MACARTHUR TRANSIT VILLAGE PROJECT

Volume 1. Draft Environmental Impact Report
SCH No. 2006022075

Prepared for:
City of Oakland

January 2008

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CITY OF OAKLAND

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

Community and Economic Development Agency
Planning & Zoning Services Division

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

COMBINED NOTICE OF RELEASE AND AVAILABILITY OF THE DRAFT ENVIRONMENTAL IMPACT REPORT AND NOTICE OF PUBLIC HEARINGS ON THE MACARTHUR TRANSIT VILLAGE PROJECT

PROJECT TITLE: **MAC ARTHUR TRANSIT VILLAGE EIR**
CASE NO. **ER 0006-04**
PROJECT SPONSOR: **MacArthur Transit Community Partners, LLC**

PROJECT LOCATION: The project site is approximately 8.2 acres and is comprised of 10 parcels, the existing BART Plaza, two unimproved roadway rights-of-way between Telegraph Avenue and Frontage Road, and Frontage Road between West MacArthur Boulevard and 40th Street. Project site addresses and APNs are shown in the table below:

Address	Assessor Parcel Number	Current Use
532 39th Street	012-0969-053-03	BART Parking
516 Apgar Street	012-0968-055-01	BART Parking
515 Apgar Street	012-0967-049-01	BART Parking
3921 Telegraph Avenue	012-0969-002-00	Braids By Betty
3915 Telegraph Avenue	012-0969-003-00	Chef Yu Restaurant
3911 Telegraph Avenue	012-0969-053-02	Abyssinia Market
3901 Telegraph Avenue	012-0969-004-00	Lee's Auto
3875 Telegraph Avenue	012-0968-003-01	Medical Offices
526 W. MacArthur Boulevard	012-0967-009-00	Hotel
544 W. MacArthur Boulevard	012-0967-010-00	Hotel
BART Plaza	--	BART Plaza
39th Street, between Telegraph Ave. and Frontage Rd.	--	BART Parking
Apgar Street, between Telegraph Ave. and Frontage Rd.	--	BART Parking

DESCRIPTION OF PROJECT: The proposed project consists of a new Transit Village at the MacArthur BART station. The General Plan designates the project site as Neighborhood Center Mixed Use and the Existing Zoning is Commercial Shopping, Mediated Design Review (C-28/S-18) and High Density Residential, Mediated Design Review (R-70/S-18). The proposed project includes a rezone from C-28/S-18 and R-70/S-18 to Transit Oriented Development (S-15). The proposed project would require a series of discretionary actions associated with approval of the proposed project including, but not limited to: Rezone, S-15 Zone Text Amendment, Planned Unit Development/Development Plans, Design Review, Owner Participation Agreement/Disposition and Development Agreement, Development Agreement, Subdivision Maps, and Tree Removal Permits. Parcels that comprise the project site are included in the Hazardous Waste and Substances Sites (Cortese) List.

The proposed project would involve the demolition of all existing buildings and parking lots on the project site to allow for the construction of a new mixed-use, transit village development project. The transit village includes five new buildings that will accommodate for-rent and for-sale residential units, neighborhood-serving commercial and commercial uses, live/work units and a community center or childcare use. New land uses in the project area would be consistent with the land uses prescribed in the S-15, Transit-Oriented Development Zone. The project also includes two new internal roadways, a parking garage, landscaping and other streetscape improvements (i.e., benches and street lighting), and improvements to the BART plaza. In summary the project includes the following elements:

- Demolition of existing structures and remediation of hazardous materials;
- Up to 675 dwelling units (562 market-rate units and 113 affordable rentals units);
- Up to 44,000 square feet of commercial space (includes up to 18 live/work units);
- 5,000 square feet of community center space or childcare facility;
- Approximately 1,000 parking spaces (structured), which includes 300 exclusive BART patrons parking spaces, and 30 to 45 on-street parking spaces would be provided.
- The development of pedestrian and bicycle friendly internal streets and walkways;
- Two new traffic signals at the intersections of Village Drive/Telegraph Avenue and West MacArthur Boulevard/Frontage Road;
- A Residential Parking Permit program option for the adjacent neighborhoods;
- Improvements to the BART Plaza and other public access improvements; and
- Sustainable development that meets the objectives of the US Green Building Council LEED Neighborhood Development (ND) Pilot Program goals.

ENVIRONMENTAL REVIEW: A Draft Environmental Impact Report (DEIR) was been prepared for the project, under the requirements of the California Environmental Quality Act (CEQA), pursuant to Public Resources Code Section 21000 et. seq. The DEIR analyzes potentially significant environmental impacts in the following environmental categories: Land Use; Public Policy; Transportation, Circulation and Parking; Air Quality; Noise and Vibration; Hydrology and Water Quality; Geology, Soils and Seismicity; Public Health and Hazards; Public Services; Utilities and Infrastructure; Cultural Resources and Paleontological Resources; and Aesthetic Resources. The Draft EIR identifies two significant unavoidable environmental impacts related to Transportation, Circulation and Parking (unacceptable Level of Service at two intersections: Broadway/MacArthur Boulevard and Market Street/MacArthur Boulevard under the Cumulative Year 2030 Baseline Plus Project condition). 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. The Draft EIR may also be reviewed at the following website:
http://www.oaklandnet.com/government/ceda/revised/planningzoning/MajorProjectsSection/macarthur.html

PUBLIC HEARINGS: The City Planning Commission will conduct a public hearing on the Draft EIR and the project on **March 5, 2008 at 6:00 p.m**. in Hearing Room 1, City Hall, 1 Frank H. Ogawa Plaza.

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 invited to comment on the EIR and the project. There is no fee for commenting, and all comments received will be considered by the City prior to finalizing the EIR and making a decision on the project. Comments on the Draft EIR should focus on the sufficiency of the EIR in discussing possible impacts on the physical environment, ways in which potential adverse effects might be minimized, 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 hearing described above or in writing. Please address all written comments to Charity Wagner, Consulting Planner RE: Case No. ER 0006-04, City of Oakland, Community and Economic Development Agency, Planning Division, 250 Frank H. Ogawa Plaza, Suite 3315, Oakland, CA 94612; 510-238-6538 (fax); or e-mailed to clwagner@rrmdesign.com. Comments should be received no later than 4:00 p.m. on March 17, 2008. Please reference case number ER 000604 in all correspondence. If you challenge the environmental document or project in court, you may be limited to raising only those issues raised at the Planning Commission public hearing described above, or in written correspondence received by the Community and Economic Development Agency on or prior to 4:00 p.m. on March 17, 2008. After all comments are received, a Final EIR will be prepared and the Planning Commission will consider certification of the Final EIR and render a decision/make a recommendation on the project at a later meeting date to be scheduled. For further information, please contact Charity Wagner at (415) 730-6718 at clwagner@rrmdesign.com.

January 31, 2008
File Number ER 0006-04

Gary Patton
Deputy Director of Planning & Zoning
Major Development Projects

Form A
Notice of Completion & Environmental Document Transmittal

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

SCH # **2006022075**

Project Title: Mac Arthur Transit Village

Lead Agency: City of Oakland
Mailing Address: 250 Frank H. Ogawa Plaza
City: Oakland   Zip: 94612
Contact Person: Charity Wagner, Consulting Planner
Phone: (415) 730-6718
County: Alameda

Project Location:

County: Alameda   City/Nearest Community: Oakland
Cross Streets: Telegraph Avenue and 40th Street   Zip Code: 94609
Total Acres: 8.2
Assessor's Parcel No. multiple (see attached)   Section: ____ Twp. ____ Range: ____ Base: ____
Within 2 Miles: State Hwy #: State Route 24/I-580   Waterways: San Francisco Bay
Airports: NA   Railways: Oakland Terminal Railway   Schools: multiple

Document Type:

CEQA: ☐ NOP ☐ Early Cons ☐ Neg Dec ☐ Mit Neg Dec ☒ Draft EIR ☐ Supplement to EIR (Note prior SCH # below) ☐ Subsequent EIR (Note prior SCH # below) ☐ Other ____

NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI

Other: ☐ Joint Document ☐ Final Document ☐ Other ____

Local Action Type:

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

Development Type:

☒ Residential: Units 675 Acres ____
☐ Office: Sq.ft. ____ Acres ____ Employees ____
☒ Commercial: Sq.ft. 44,000 Acres ____ Employees ____
☐ Industrial: Sq.ft. ____ Acres ____ Employees ____
☐ Educational ____
☐ Recreational ____
☐ Water Facilities: Type ____ MGD ____
☐ Transportation: Type ____
☐ Mining: Mineral ____
☐ Power: Type ____ MW ____
☐ Waste Treatment: Type ____ MGD ____
☐ Hazardous Waste: Type ____
☒ Other: community use (potentially day care) 5,000 Sq.ft.

Project Issues Discussed in Document:

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

Present Land Use/Zoning/General Plan Designation:

General Plan: Neighborhood Center Mixed Use; Zoning: Commercial Shopping and High Density Residential/ Mediated Design Review (C-28/S-18 and R-70/S-18)

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

Please see attached.

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

September 2005

Reviewing Agencies Checklist

continued

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

- x Air Resources Board
- ____ Boating & Waterways, Department of
- ____ California Highway Patrol
- ____ Caltrans District # ____
- ____ Caltrans Division of Aeronautics
- x Caltrans Planning
- ____ Coachella Valley Mountains Conservancy
- ____ Coastal Commission
- ____ Colorado River Board Commission
- ____ Conservation, Department of
- ____ Corrections, Department of
- ____ Delta Protection Commission
- ____ Education, Department of
- ____ Office of Public School Construction
- ____ Energy Commission
- ____ Fish & Game Region # ____
- ____ Food & Agriculture, Department of
- ____ Forestry & Fire Protection
- ____ General Services, Department of
- ____ Health Services, Department of
- ____ Housing & Community Development
- ____ Integrated Waste Management Board
- ____ Native American Heritage Commission
- ____ Office of Emergency Services
- ____ Office of Historic Preservation
- ____ Parks & Recreation
- ____ Pesticide Regulation, Department of
- ____ Public Utilities Commission
- ____ Reclamation Board
- ____ Regional WQCB # ____
- ____ Resources Agency
- ____ S.F. Bay Conservation & Development Commission
- ____ San Gabriel & Lower Los Angeles Rivers & Mountains Conservancy
- ____ San Joaquin River Conservancy
- ____ Santa Monica Mountains Conservancy
- ____ State Lands Commission
- ____ SWRCB: Clean Water Grants
- ____ SWRCB: Water Quality
- ____ SWRCB: Water Rights
- ____ Tahoe Regional Planning Agency
- x Toxic Substances Control, Department of
- ____ Water Resources, Department of
- S Other San Francisco Bay Area Rapid Transit District
- ____ Other ____

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

Starting Date January 31, 2008

Ending Date March 15, 2008

Lead Agency (Complete if applicable):

Consulting Firm: RRM Design Group

Address: 10 Liberty Ship Way

City/State/Zip: Sausalito, CA 94965

Contact: Lynette Dias, Principal

Phone: (415) 331-8282

Applicant: MacArthur Transit Community Partners, LLC

Address: 130 Webster Street

City/State/Zip: Oakland, CA 94607

Phone: (510) 273-2009

Signature of Lead Agency Representative [signature] Date 1-28-08

Authority cited: Section 21083 and 21087, Public Resources Code. Reference: Section 21161, Public Resources Code.

Assessor's Parcel Nos.
012-0969-053-03; 012-0968-055-01; 012-0967-049-01; 012-0969-002-00; 012-0969-003-00; 012-0969-053-02; 012-0969-004-00; 012-0968-003-01; 012-0967-009-00; 012-0967-010-00

Project Description:
The proposed project consists of a new Transit Village at the MacArthur BART station. The General Plan designates the project site as Neighborhood Center Mixed Use and the Existing Zoning is Commercial Shopping, Mediated Design Review (C-28/S-18) and High Density Residential, Mediated Design Review (R-70/S-18). The proposed project includes a rezone from C-28/S-18 and R-70/S-18 to Transit Oriented Development (S-15). The proposed project would require a series of discretionary actions associated with approval of the proposed project including, but not limited to: Rezone, S-15 Zone Text Amendment, Planned Unit Development/Development Plans, Design Review, Owner Participation Agreement/Disposition and Development Agreement, Development Agreement, Subdivision Maps, and Tree Removal Permits. Parcels that comprise the project site are not included in the Hazardous Waste and Substances Sites (Cortese) List; however, other hazards or hazardous waste, not included in the Cortese List, may be located on the project site.

The proposed project would involve the demolition of all existing buildings and parking lots on the project site to allow for the construction of a new mixed-use, transit village development project. The transit village includes five new buildings that will accommodate for-rent and for-sale residential units, neighborhood-serving commercial and commercial uses, live/work units and a community center or childcare use. New land uses in the project area would be consistent with the land uses prescribed in the S-15, Transit-Oriented Development Zone. The project also includes two new internal roadways, a parking garage, landscaping and other streetscape improvements (i.e., benches and street lighting), and improvements to the BART plaza. In summary the project includes the following elements:

- Demolition of existing structures and remediation of hazardous materials;
- Up to 675 dwelling units (562 market-rate units and 113 affordable rentals units);
- Up to 44,000 square feet of commercial space (includes up to 18 live/work units);
- 5,000 square feet of community center space or childcare facility;
- Approximately 1,000 parking spaces (structured), which includes 300 exclusive BART patrons parking spaces, and 30 to 45 on-street parking spaces would be provided.
- The development of pedestrian and bicycle friendly internal streets and walkways;
- Two new traffic signals at the intersections of Village Drive/Telegraph Avenue and West MacArthur Boulevard/Frontage Road;
- A Residential Parking Permit program option for the adjacent neighborhoods;
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- Sustainable development that meets the objectives of the US Green Building Council LEED Neighborhood Development (ND) Pilot Program goals.

TABLE OF CONTENTS

VOLUME 1. DRAFT EIR

List of Figures

List of Tables

I. INTRODUCTION

A. PURPOSE OF EIR

In compliance with the California Environmental Quality Act (CEQA), this Draft Environmental Impact Report (EIR) describes the environmental consequences of the proposed MacArthur Transit Village Project (project). This EIR is designed to inform City staff, the Planning Commission, City Council, Redevelopment Agency, San Francisco Bay Area Rapid Transit District (BART), other responsible and interested agencies, and the general public of: (1) the proposed project and the potential environmental consequences of the project, (2) mitigation measures recommended to lessen or avoid significant adverse impacts, and (3) a reasonable range of feasible alternatives to the project. The information contained in the EIR will be reviewed and considered by public agencies prior to making a decision to approve, reject, or modify the proposed project. The City of Oakland (City) is the lead agency for environmental review of the proposed project, and BART is a Responsible Agency.

B. PROPOSED PROJECT

The 8.2-acre project site is located in North Oakland, within the block bound by 40th Street, Telegraph Avenue, West MacArthur Boulevard, and State Route 24, as shown in Figure I-1. The project site includes the BART parking lot, the BART plaza, Frontage Road between West MacArthur Boulevard and 40th Street, and seven privately owned parcels.

The MacArthur Transit Village Project seeks to redevelop and revitalize an underutilized site in Oakland to create a vibrant transit village that provides pedestrian-oriented, mixed-use development (residential, commercial and community services) that enhances the character of the neighborhood and improves access to (for all travel modes) and ridership of BART.

The project would include five buildings with up to 675 units of high-density multi-family housing, up to 44,000 square feet of neighborhood-serving commercial, and 5,000 square feet of community or childcare facility space. Up to 113 units, approximately 17 percent of the units (20 percent of total market-rate units), would be below market-rate, with the remainder of the units being market-rate residential units. The project includes approximately 700 residential, commercial and community use parking spaces and 300 BART parking spaces.

The proposed project also includes several public infrastructure upgrades, including two new streets in the project site, improvements to the existing access road that connects 40th

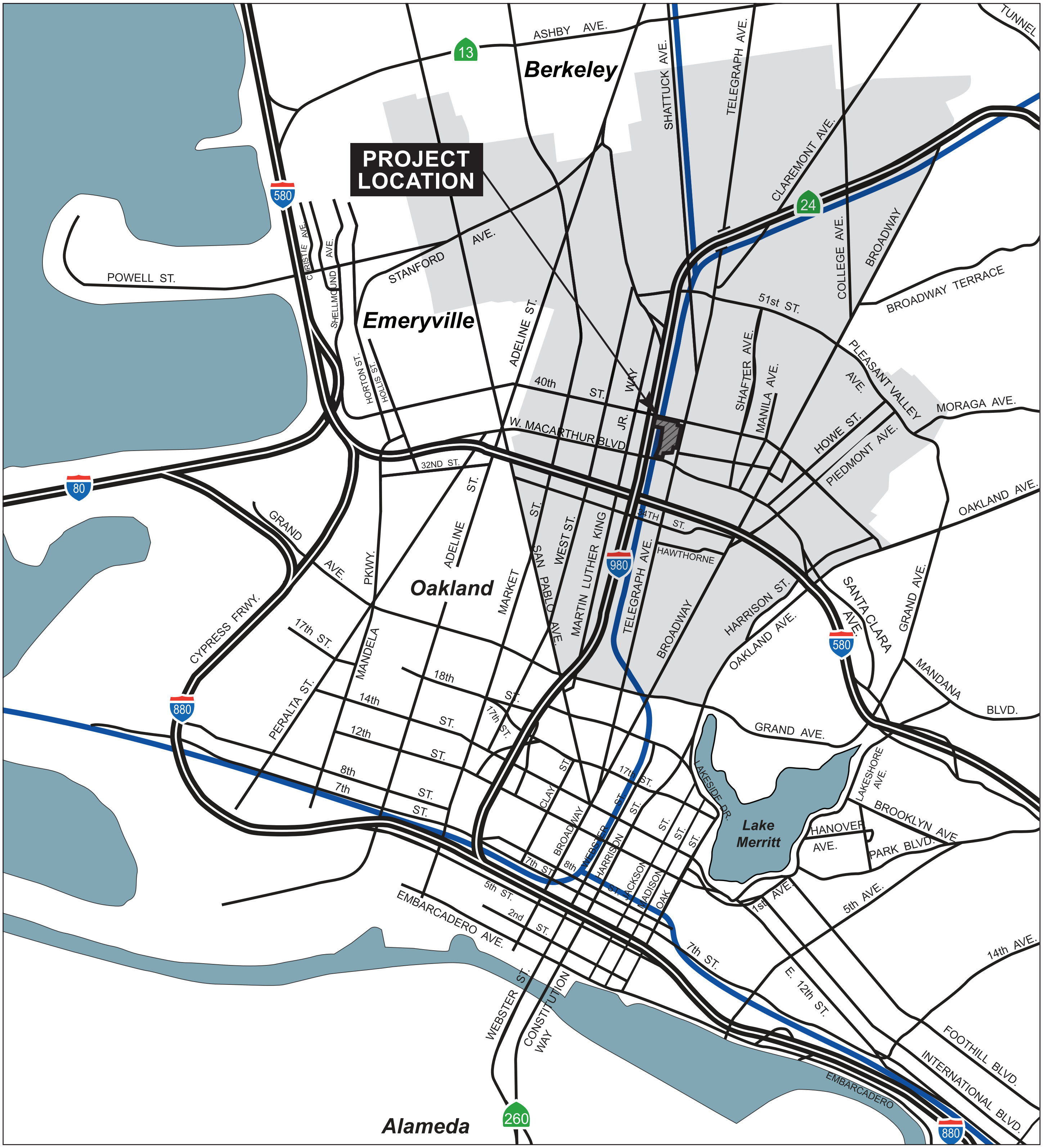

FIGURE I-1

N

0 2000 4000

feet

Legend

Project Site

Cumulative Project Study Area for Select Topics (Land Use, Transportation, Operational Noise and Aesthetics)

MacArthur Transit Village Project EIR

Project Location and Regional Vicinity Map

SOURCE: CALIFORNIA STATE AUTOMOBILE ASSOCIATION, 2000.

Street with MacArthur Boulevard, the renovation of the existing BART entry plaza, inter-modal improvements, a new intermodal area, and a new public plaza adjacent to the commercial space.

C. EIR SCOPE

The City of Oakland circulated two Notices of Preparation (NOP), which stated that all environmental topics identified in Appendix G of the CEQA Guidelines would be evaluated in the EIR. The first NOP was published on February 15, 2006, and the public comment period for the scope of the EIR lasted from February 15, 2006 to March 16, 2006. Due to changes in the project description, a second NOP was circulated on June 13, 2007. The public comment period lasted from June 13, 2007 to July 13, 2007. Both NOPs were sent to property owners within 500 feet of the project site. The NOPs were also sent to responsible and trustee agencies, organizations, and interested individuals. Additionally, the NOPs were sent to the State Clearinghouse.

Two scoping sessions were held for the project. The first was a public scoping session for public agencies on February 28, 2006. Additionally, a scoping meeting was held in conjunction with a Planning Commission meeting on March 15, 2006. Comments received by the City on the NOP at the agency scoping meeting and at the public scoping meeting were taken into account during the preparation of the EIR. NOP comments were received from public agencies, area property owners and concerned citizens regarding a wide range of issues to be addressed in this EIR. Topic areas that were most widely referenced in the NOP comments letters include transportation, parking, air quality, noise, visual resources, storm drainage and water quality, utilities and infrastructure. Additionally, several comments related to non-CEQA topics (i.e., building design and architecture and crime). The NOPs and written comments received are included in Appendix A.

The following environmental topics are addressed in this EIR:

A. Land Use
B. Public Policy
C. Transportation, Circulation and Parking
D. Air Quality
E. Noise and Vibration
F. Hydrology and Water Quality
G. Geology, Soils and Seismicity
H. Public Health and Hazards
I. Public Services
J. Utilities and Infrastructure
K. Cultural and Paleontological Resources
L. Aesthetic Resources

Environmental topics not warranting detailed evaluation (agricultural resources, biological resources, mineral resources, and population and housing) are discussed in Chapter VI.D, under Effects Found Not to be Significant.

D. REPORT ORGANIZATION

This EIR is organized into the following chapters:

- *Chapter I – Introduction:* Discusses the overall EIR purpose; provides a summary of the proposed project; describes the EIR scope; and summarizes the organization of the EIR.
- *Chapter II – Summary:* Provides a summary of the impacts that would result from implementation of the proposed project, and describes Standard Conditions of Approval and mitigation measures recommended to avoid or reduce significant impacts.
- *Chapter III – Project Description*: Provides a description of the project objectives, project site, site development history, the proposed development, and required approval process.
- *Chapter IV – Setting, Impacts, Standard Conditions of Approval, and Mitigation Measures*: Describes the following for each environmental technical topic: existing conditions (setting); Standard Conditions of Approval; significance criteria; potential environmental impacts and their level of significance; Standard Conditions of Approval relied upon to ensure significant impacts would not occur; and mitigation measures recommended when necessary to mitigate identified impacts. Cumulative impacts are also discussed in each technical topic section. Potential adverse impacts are identified by levels of significance, as follows: less-than-significant impact (LTS), significant impact (S), and significant and unavoidable impact (SU). The significance level is identified for each impact before and after implementation of the recommended mitigation measure(s).
- *Chapter V – Alternatives*: Provides an evaluation of seven alternatives to the proposed project. Three of the alternatives are included to meet the CEQA requirement that require an EIR to describe a range of reasonable alternatives to the project, which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project. The CEQA alternatives include the: No Project/No Build Alternative; Existing Zoning Alternative; and Mitigated Reduced Building/Site Alternative. Three additional planning alternatives to the project are also considered: Proposed Project with Full BART Replacement Parking Alternative; Tower Alternative; and Increased Commercial Alternative. These alternatives are evaluated primarily to consider variants to the project that may be desirable to the project developer, the City, BART, and/or members of the community, but might not lessen or avoid any of the significant, adverse environmental effects of the project.

- *Chapter VI – CEQA-Required Assessment Conclusions:* Provides the required analysis of growth-inducing impacts; significant irreversible changes; effects found not to be significant; and significant unavoidable and cumulative impacts.
- *Chapter VII – Report Preparation*: Identified preparers of the EIR, references used, and the persons and organizations contacted.
- *Appendices:* The appendices contain the NOPs and written comments submitted on the NOPs; traffic, air quality and noise modeling data and supporting analysis; the Water Supply Assessment; and Land Use Database and Cumulative Growth Scenario.

All supporting technical documents and the reference documents are available for public review at the City of Oakland Community and Economic Development Agency, Planning Division, under case number ER06004.

The Draft EIR is available for public review for the period identified in the Notice of Availability attached to the front of this document. During this time, written comments on the Draft EIR may be submitted to the City of Oakland Community & Economic Development Agency, Planning Division at the address indicated on the Notice of Availability. Responses to all comments received on the environmental analysis in the Draft EIR during the specified review period will be included in the Response to Comments/Final EIR.

II. SUMMARY

A. PROJECT UNDER REVIEW

This EIR has been prepared to evaluate the potential environmental effects of the MacArthur Transit Village project. The project site includes the BART parking lot, the BART plaza, Frontage Road between West MacArthur Boulevard and 40th Street, and seven privately-owned parcels. The MacArthur Transit Village Project seeks to redevelop and revitalize an underutilized site in Oakland to create a vibrant transit village that provides pedestrian-oriented, mixed-use development (residential, commercial and community services) that enhances the character of the neighborhood and improves access to (for all travel modes) and ridership of BART.

The 8.2-acre project site is located in North Oakland, within the block bound by 40th Street, Telegraph Avenue, West MacArthur Boulevard, and State Route 24 (SR-24), as shown in Figure I-1. The project would include five buildings with up to 675 units of high-density multi-family housing, up to 44,000 square feet of neighborhood-serving commercial, and 5,000 square feet of community space or childcare facility space. Approximately 17 percent of the units (20 percent of total market-rate units) would be below market-rate (affordable), with the remainder of the units being market-rate condominiums. The project includes approximately 700 residential, commercial and community use parking spaces and 300 BART patron parking spaces. The proposed project is described in detailed in Chapter III, Project Description.

B. SUMMARY OF IMPACTS AND MITIGATION MEASURES

This summary provides an overview of the analysis contained in Chapter V, Setting, Impacts, Standard Conditions of Approval, and Mitigation Measures. CEQA requires a summary to include discussion of: (1) potential areas of controversy; (2) significant impacts; (3) cumulative impacts; (4) significant irreversible and unavoidable impacts; and (5) alternatives to the proposed project. Each of these topics are summarized below.

1. Potential Areas of Controversy

Letters and verbal comments received on the Notices of Preparation (NOP) (February 15, 2006 and June 13, 2006) raised a number of topics that the commentors wanted addressed in the EIR, including transportation, parking, air quality, noise, visual resources, storm drainage and water quality, utilities and infrastructure impacts that may result from the proposed project. In addition, some of the comments offered in the NOP comment letters addressed the merits of the project itself and not the potential adverse environmental impacts that are the subject of this EIR. Verbal comments offered by those in attendance at the CEQA Scoping Sessions, held on February 28, 2006 and March 15, 2006, included many of the comments offered in writing as comments on the NOP. Copies of the NOPs and written comment letters are included in Appendix A.

2. Significant Impacts

Under CEQA, a significant impact on the environment is defined as "…a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance."[1] Implementation of the proposed project has the potential to result in adverse environmental impacts related to transportation. Transportation impacts would be significant without the implementation of Standard Conditions of Approval and mitigation measures, but, with the exception of two intersections (#3 and #22), would be reduced to a less-than-significant level if the Standard Conditions of Approval and mitigation measures noted in this report are implemented. Impacts are anticipated to be less than significant for all other environmental topics.

3. Alternatives to the Proposed Project

Chapter V includes the analysis of three alternatives to the proposed project to meet the requirements of CEQA to analyze a range of reasonable alternatives to the project that would feasibly attain most of the project's basic objectives and avoid or substantially lessen any of the significant effects of the project. The three project CEQA alternatives analyzed in Chapter V include:

- The **No Project/No Build Alternative**, which assumes the continuation of existing conditions within the project site.
- The **Existing Zoning Alternative**, which assumes development in accordance with the existing zoning (C-28 and R-70) and General Plan land use designation (Neighborhood Center Mixed-Use). The Existing Zoning Alternative would include demolition of all existing buildings and the BART parking lot and remediation of hazardous materials on-site. Development under this alternative would include 530 dwelling units, 44,000 square feet of commercial space (this may include a community space) and approximately 1,015 parking spaces (including 300 exclusive BART parking spaces). Development would consist of five new buildings (including a parking garage). Structures within the existing C-28 zone (properties adjacent to MacArthur Boulevard and Telegraph Avenue) would have a maximum height of 55 feet and structures within the R-70 zone (properties currently developed with the BART parking lot) would have a maximum height of 40 feet. This alternative would include new access/circulation improvements and BART plaza improvements.

[1] 14 California Code Regs. 15382; Public Resources Code 21068.

- The **Mitigated Reduced Building/Site Alternative**, which assumes development would only occur on the BART parking lot. The Mitigated Reduced Building/Site Alternative would include demolition of the BART parking lot, but all other buildings and uses would remain. Development under this alternative would include four five- to six-story structures with approximately 200 dwelling units, 20,000 square feet of commercial space and 750 parking spaces (including 300 exclusive BART parking spaces).

Three additional planning alternatives to the project are also considered in this EIR. These alternatives may not lessen or avoid any of the significant, adverse environmental effects of the project as they are evaluated primarily to consider variants to the project that may be desirable to the project developer, the City, BART, and/or members of the community. The planning/project merit alternatives analyzed in Chapter V include:

- The **Proposed Project with Full BART Replacement Parking Alternative**, which assumes the proposed project is developed with a 600-space parking garage for BART patrons (as opposed to a 300-space parking garage for BART patrons). Parking spaces under the Proposed Project with Full BART Replacement Parking would be approximately 1,300 with 600 exclusive BART parking spaces. All other project components remain the same (up to 675 residential units, 44,000 square feet of commercial area and 5,000 square feet of community space or childcare facility). Site improvements and circulation pattern are the same the proposed project.
- The **Tower Alternative**, which assumes a 23-story tower building would be constructed at Building D. Under the proposed project, Building D is a four-story residential building. In the Tower Alternative, residential units would increase to 868 units with 720 market-rate and 148 affordable units (as opposed to 675 residential units with 562 market-rate and 113 affordable units) and parking would increase to approximately 1,210 parking spaces, including 300 exclusive BART parking spaces. All other project components remain relatively similar with 34,000 square feet of commercial area and 7,500 square feet of community space or childcare facility. Site improvements and circulation pattern are the same the proposed project.
- The **Increased Commercial Alternative**, which assumes 172,000 square feet of commercial office development, would occur at Building A. Under the proposed project, Building A is a five- to six-story mixed-use building with 230 market-rate units above 26,000 square feet of ground floor commercial and live/work flex space. Under the Commercial Alternative, 172,000 square feet of commercial office space is introduced onto the site with 475 residential units (395 market-rate and 80 affordable units), 27,000 square feet of commercial commercial area and 5,000 of community space or childcare facility. Site improvements and circulation pattern are the same the proposed project.

4. Significant Unavoidable and Cumulative Impacts

As discussed at the end of each topical section in Chapter IV, Setting, Impacts and Mitigation Measures, the project would not significantly contribute to any significant cumulative impacts for any topics other than transportation. The project would significantly contribute to cumulative impacts at the following intersections:

- Telegraph Avenue/52nd Street and Claremont Avenue intersection (#2)
- Telegraph Avenue/51st Street intersection (#3)
- West Street/40th Street intersection (#8)
- the Telegraph Avenue/40th Street intersection (#13)
- Market Street/MacArthur Boulevard intersection (#16)
- Telegraph Avenue/MacArthur Boulevard intersection (#20)
- Broadway/MacArthur Boulevard intersection (#22)

The project's contribution to the cumulative impact at each of the above intersections can be mitigated to a less-than-significant level except at intersection #3 and intersection #22. No other significant and unavoidable impacts would result.

C. SUMMARY TABLE

Information in Table II-1, Summary of Impacts, City Standard Conditions of Approval and Mitigation Measures has been organized to correspond with environmental issues discussed in Chapter IV. The table is arranged in four columns: (1) impacts; (2) level of significance prior to mitigation (when mitigation is necessary); (3) required Standard Conditions of Approval and/or recommended mitigation measures; and (4) level of significance after implementation of Standard Conditions of Approval and/or mitigation. Levels of significance are categorized as follows: LTS = Less Than Significant; S = Significant; and SU = Significant and Unavoidable. A series of mitigation measures is noted where more than one mitigation measure is required to achieve a less-than-significant impact, and alternative mitigation measures are identified when available. For a complete description of potential impacts and recommended mitigation measures, please refer to the specific discussions in Chapter IV.

Table II-2 lists recommended improvements identified throughout the document to address project issues not considered significant environmental impacts under CEQA. The recommendations should be considered by the City during the review of the project's merits, independent of the CEQA impacts and mitigation measures. The failure to adopt such recommendations, however, would not result in any new impacts or the increase in severity of previously identified impacts.

Table II-1 Summary of Impacts, Conditions of Approval (COA) and Mitigation Measures (MM)

Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
A. LAND USE			
No significant land use impacts would occur.			
B. PUBLIC POLICY			
No significant public policy impacts would occur.			
C. TRANSPORTATION, CIRCULATION AND PARKING			
No significant construction period transportation-related impacts would occur with implementation of the City Standard Conditions of Approval listed in this table.		**COA TRANS-1:** Prior to the issuance of each building permit, the project sponsor and construction contractor shall meet with the Transportation Services Division and other 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 sponsor shall develop a construction management plan for review and approval by the City Transportation Services Division. The plan shall also be submitted to BART and AC Transit for review and comment. The plan shall include at least the following items and requirements: • 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. • Notification procedures for adjacent property owners and public safety personnel regarding when major deliveries, detours, and lane closures will occur. • Location of construction staging areas for materials, equipment, and vehicles (must be located on the project site). • Identification of haul routes for movement of construction vehicles that would minimize impacts on vehicular and pedestrian traffic, circulation and safety; and provision for monitoring surface streets used for haul routes so that any damage and debris attributable to the haul trucks can be identified and corrected by the project applicant.	LTS

LTS = Less Than Significant , SU = Significant and Unavoidable, S = Significant

Table II-1 Summary of Impacts, Conditions of Approval (COA) and Mitigation Measures (MM)

Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
COA TRANS-1 *continued*		• Temporary construction fences to contain debris and material and to secure the site. • Provisions for removal of trash generated by project construction activity. • A process for responding to, and tracking, complaints pertaining to construction activity, including identification of an on-site complaint manager. • Subject to City review and approval, prior to start of construction, a construction worker transportation demand management (TDM) program shall be implemented to encourage construction workers to carpool or use alternative transportation modes in order to reduce the overall number of vehicle trips associated with construction workers. • Identification and maintenance of vehicular, bicycle, pedestrian and transit access to and from the BART Station. It is anticipated that this Construction Traffic Management Plan would be developed in the context of a larger Construction Management Plan, which would address other issues such as hours of construction on-site, limitations on noise and dust emissions, and other applicable items.	
TRANS-1: The addition of project traffic would cause a significant impact at the Telegraph Avenue/51st Street intersection (#3) under Cumulative Year 2015 Baseline Plus Project conditions. The project would contribute to LOS E operations during the PM peak hour and increase critical movement average delay by more than 6 seconds.	S	TRANS-1: Optimize signal timing (i.e., adjust the allocation of green time for each intersection approach) at the Telegraph Avenue/51st Street intersection and coordinate signal phasing and timing with the adjacent Telegraph Avenue/52nd Street and Claremont Avenue intersection and other intersections in the same coordination group. To implement this measure, the project sponsor shall submit a signal optimization plan to City of Oakland's Transportation Services Division for review and approval. The plan shall consist of signal timing parameters for the signals in the coordination group. The project sponsor shall fund the cost of preparing and implementing the plan.	LTS

LTS = Less Than Significant , SU = Significant and Unavoidable, S = Significant

Table II-1 Summary of Impacts, Conditions of Approval (COA) and Mitigation Measures (MM)

Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
TRANS-1 *continued*		As shown in Table IV.C-15, after implementation of this measure, the intersection would continue to operate at LOS E during the PM peak hour. However, the increase in average delay for the critical movements would be reduced to less than the 6-second threshold of significance. No significant effects would result from implementation of this measure.	
TRANS-2: The addition of project traffic would cause a significant impact at the Market Street/MacArthur Boulevard intersection (#16) under Cumulative Year 2015 Baseline Plus Project conditions. The project would degrade intersection operations from LOS D to LOS E during the PM peak hour.	S	TRANS-2: Change the signal cycle length to 90 seconds and optimize signal timing (i.e., adjust the allocation of green time for each intersection approach) at the Market Street/MacArthur Boulevard intersection. To implement this measure, the project sponsor shall submit a signal optimization plan to City of Oakland's Transportation Services Division for review and approval. The plan shall consist of signal timing parameters for the Market Street/MacArthur Boulevard intersection. The project sponsor shall fund the cost of preparing and implementing the plan. As shown in Table IV.C-15, after implementation of this measure, the intersection would operate at LOS C during both AM and PM peak hours. No significant effects would result from implementation of this measure.	LTS
TRANS-3: The addition of project traffic would cause a significant impact at the Telegraph Avenue/52nd Street and Claremont Avenue intersection (#2) under Cumulative 2030 Baseline Plus Project conditions. The project would contribute to LOS F operations and increase intersection average delay by more than 2 seconds during the AM peak hour; would contribute to LOS E operations and increase critical movement average delay by more than 6 seconds during the PM peak hour.	S	TRANS-3: Implement the following measures: • Prohibit left-turns from northbound Telegraph Avenue into westbound 52nd Street during the peak commute times (i.e., 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.). Currently, a small volume of traffic uses this movement (about 10 peak hour vehicles), which can be diverted to 51st Street. Thus, the peak hour prohibition on left-turns would not result in excessive and circuitous diversions. • Change signal cycle length to 120 seconds and optimizing signal timing (i.e., adjust the allocation of green time for each intersection approach) at the Telegraph Avenue/52nd Street and Claremont Avenue intersection; coordinate signal timing and phasing with the adjacent Telegraph Avenue/51st Street intersection and other intersections in the same coordination group.	LTS

LTS = Less Than Significant , SU = Significant and Unavoidable, S = Significant

Table II-1 Summary of Impacts, Conditions of Approval (COA) and Mitigation Measures (MM)

Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
TRANS-3 *continued*		To implement these measures, the project sponsor shall submit the following to City of Oakland's Transportation Services Division for review and approval: • Signing plans to prohibit left-turns from northbound Telegraph Avenue into westbound 52nd Street. • Signal timing plans for the signals in the coordination group. The project sponsor shall fund the cost of preparing and implementing these plans. As shown in Table IV.C-17, after implementation of this measure, the intersection would continue to operate at LOS F during the AM peak hour. However, the increase in intersection average delay would be reduced to less than the two-second threshold of significance. The intersection would operate at LOS C during the PM peak hour after implementation of this measure. The increase in signal cycle length may result in additional delay for pedestrians and bicycles. However, no significant effects would result from implementation of this measure.	
TRANS-4: The addition of project traffic would cause a significant impact at the Telegraph Avenue/51st Street intersection (#3) under Cumulative Year 2030 Baseline Plus Project conditions. The project would contribute to LOS F operations during both AM and PM peak hours; would increase critical movement average delay by more than 4 seconds during the AM peak hour; and would increase intersection average delay by more than 2 seconds during the PM peak hour.	S	TRANS-4: Implement the following measures: • Change signal cycle length to 120 seconds and optimize signal timing (i.e., adjust the allocation of green time for each intersection approach) at the Telegraph Avenue/51st Street intersection and coordinate signal phasing and timing with the adjacent Telegraph Avenue/52nd Street and Claremont Avenue intersection and other intersections in the same coordination group. To implement this measure, the project sponsor shall submit a signal optimization plan to City of Oakland's Transportation Services Division for review and approval. The plan shall consist of signal timing parameters for the signals in the coordination group. The project sponsor shall fund the cost of preparing and implementing the plan.	SU

LTS = Less Than Significant , SU = Significant and Unavoidable, S = Significant

Table II-1 Summary of Impacts, Conditions of Approval (COA) and Mitigation Measures (MM)

Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
TRANS-4 *continued*		As shown in Table IV.C-17, after changing the signal cycle and turns, the intersection would continue to operate at LOS F during the PM peak hour, and the increase in average delay for the critical movements would continue to be more than the 4-second threshold of significance. Thus, this measure is not sufficient to mitigate the impact to a less-than-significant level. In addition, the increase in signal cycle length may result in additional delay for pedestrians and bicycles. • To help further minimize impacts at this intersection, a Transportation Demand Management (TDM) program shall be implemented at the project site to encourage more residents and employees to shift from driving alone to other modes of travel. Potential TDM measures may include, but are not limited to, transit ticket subsidies, awareness programs, direct transit sales, providing a guaranteed ride home program, and parking management strategies. The effectiveness of the TDM program shall be regularly monitored, and if necessary adjusted to meet its goals. The project applicant shall submit the TDM program to the City for its review and approval. The plan shall also be submitted to BART for review and comment. The project applicant shall also be responsible for funding and implementing the TDM program. The components of the proposed TDM program have not been finalized. Additionally, it is difficult to accurately predict a TDM program's effectiveness and to quantify the effects on reducing project trip generation. To present a conservative analysis, this study assumes that the intersection would continue to operate at LOS F with the implementation of this mitigation measure. Thus, these measures will partially mitigate the impact, but are not sufficient to mitigate the impact to a less-than-significant level.	

LTS = Less Than Significant , SU = Significant and Unavoidable, S = Significant

Table II-1 Summary of Impacts, Conditions of Approval (COA) and Mitigation Measures (MM)

Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
TRANS-5: The addition of project traffic would cause a significant impact at the West Street/40th Street intersection (#8) under Cumulative Year 2030 Baseline Plus Project conditions. The project would degrade intersection operations from LOS D to LOS E in the PM peak hour.	S	TRANS-5: Optimize signal timing (i.e., adjust the allocation of green time for each intersection approach) at the West Street/40th Street intersection. To implement this measure, the project sponsor shall submit a signal optimization plan to City of Oakland's Transportation Services Division for review and approval. The plan shall consist of signal timing parameters for the West Street/40th Street intersection. The project sponsor shall fund the cost of preparing and implementing the plan. As shown in Table IV.C-17, after implementation of this measure, the intersection would operate at LOS A during the PM peak hour. No significant effects would result from implementation of this measure.	LTS
TRANS-6: The addition of project traffic would cause a significant impact at the Telegraph Avenue/40th Street intersection (#13) under Cumulative Year 2030 Baseline Plus Project conditions. During the PM peak hour, the project would contribute to LOS F operations and would increase critical movement average delay by more than 4 seconds.	S	TRANS-6: Implement the following measures: • Provide protected/permitted left-turn phasing on eastbound and westbound 40th Street approaches. • Change signal cycle length to 105 seconds during the PM peak hour, and optimize signal timing (i.e., adjust the allocation of green time for each intersection approach) at the Telegraph Avenue/40th Street intersection. The change in signal cycle length may also require coordination with other intersections in the same coordination group. To implement these measures, the project sponsor 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 provide left-turn phasing on eastbound and westbound 40th Street approaches. • Signal timing plans for the signals in the coordination group. The project sponsor shall fund the cost of preparing and implementing these plans.	LTS

LTS = Less Than Significant , SU = Significant and Unavoidable, S = Significant

Table II-1 Summary of Impacts, Conditions of Approval (COA) and Mitigation Measures (MM)

Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
TRANS-6 *continued*		As shown in Table IV.C-17, after implementation of these measures, the intersection would operate at LOS D during both AM and PM peak hours. The increase in signal cycle length may result in additional delay for pedestrians and bicycles. However, no significant effects would result from implementation of this measure.	
TRANS-7: The addition of project traffic would cause a significant impact at the Market Street/MacArthur Boulevard intersection (#16) under Cumulative Year 2030 Baseline Plus Project conditions. The project would contribute to LOS F operations, and would increase intersection average delay by more than 2 seconds, during both AM and PM peak hours.	S	TRANS-7: The impact shall be mitigated by the following: • Stripe a left-turn lane on northbound Market Street at MacArthur Boulevard. The left-turn lane can be accommodated within the existing right-of-way, but may result in loss of a few on-street parking and relocation of an AC Transit bus stop on northbound Market Street. • Change signal cycle length to 110 seconds during the AM peak hour and 90 seconds during the PM peak hour, and optimize signal timing (i.e., adjust the allocation of green time for each intersection approach) at the Market Street/MacArthur Boulevard intersection. To implement these measures, the project sponsor shall submit the following to City of Oakland's Transportation Services Division for review and approval: • Plans, Specifications, and Estimates (PS&E) to stripe a left-turn lane on northbound Market Street at MacArthur Boulevard. • Signal timing plans for the Market Street/MacArthur Boulevard intersection. The project sponsor shall fund the cost of preparing and implementing these plans. As shown in Table IV.C-17, after implementation of these measures, the intersection would operate at LOS C during both AM and PM peak hours. The increase in signal cycle length may result in additional delay for pedestrians and bicycles. However, no significant effects would result from implementation of this measure.	LTS

LTS = Less Than Significant , SU = Significant and Unavoidable, S = Significant

Table II-1 Summary of Impacts, Conditions of Approval (COA) and Mitigation Measures (MM)

Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
TRANS-8: The addition of project traffic would cause a significant impact at the Telegraph Avenue/MacArthur Boulevard intersection (#20) under Cumulative Year 2030 Baseline Plus Project conditions. The project would degrade intersection operations from LOS D to LOS E in the AM peak hour.	S	TRANS-8: Implement the following measures: • Provide protected/permitted left-turn phasing on northbound and southbound Telegraph Avenue approaches. • Change signal cycle length to 120 seconds and optimize signal timing (i.e., adjust the allocation of green time for each intersection approach) at the Telegraph Avenue/MacArthur Boulevard intersection. Signal phasing and timing shall also be coordinated with other intersections in the same coordination group. To implement this measure, the project sponsor 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 provide left-turn phasing on northbound and southbound Telegraph Avenue approaches. • Signal timing parameters for the signals in the coordination group. The project sponsor shall fund the cost of preparing and implementing the plan. As shown in Table IV.C-17, after implementation of this measure, the intersection would operate at LOS D during the AM peak hour and LOS E during the PM peak hour. The increase in signal cycle length may result in additional delay for pedestrians and bicycles. No significant effects would result from implementation of this measure.	LTS

LTS = Less Than Significant , SU = Significant and Unavoidable, S = Significant

Table II-1 Summary of Impacts, Conditions of Approval (COA) and Mitigation Measures (MM)

Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
TRANS-9: The addition of project traffic would cause a significant impact at the Broadway/ MacArthur Boulevard intersection (#22) under Cumulative Year 2030 Baseline Plus Project conditions. The project would contribute to LOS F operations and would increase intersection average delay by more than 2 seconds during the AM peak hour.	S	TRANS-9: Implement the following measures: • To help further minimize impacts at this intersection, a Transportation Demand Management (TDM) program shall be implemented at the project site to encourage more residents and employees to shift from driving alone to other modes of travel. Potential TDM measures may include, but are not limited to, transit ticket subsidies, awareness programs, direct transit sales, providing a guaranteed ride home program, and parking management strategies. The effectiveness of the TDM program shall be regularly monitored, and if necessary adjusted to meet its goal. The project applicant shall submit the TDM program to the City for its review and approval. The plan shall also be submitted to BART for review and comment. The project applicant shall also be responsible for funding and implementing the TDM program. The components of the proposed TDM program have not been finalized. Additionally, it is difficult to accurately predict a TDM program's effectiveness and to quantify the effects on reducing project trip generation. To present a conservative analysis, this study assumes that the intersection would continue to operate at LOS F with the implementation of this mitigation measure. Thus, these measures will partially mitigate the impact, but are not sufficient to mitigate the impact to a less-than-significant level.	SU

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Table II-1 Summary of Impacts, Conditions of Approval (COA) and Mitigation Measures (MM)

Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
D. Air Quality			
No significant construction-related air quality impacts would occur with implementation of the City Standard Conditions of Approval listed in this table.		**COA 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 BAAQMD basic and enhanced dust control procedures required for construction sites. These include: **BASIC (Applies to ALL construction sites)** 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 2 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.	LTS

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Table II-1 Summary of Impacts, Conditions of Approval (COA) and Mitigation Measures (MM)

Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
Air Quality *continued*		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.	
		ENHANCED (All "Basic" Controls listed above plus the following if the construction site is greater than 4 acres) a) All "Basic" controls listed above, plus: b) Install sandbags or other erosion control measures to prevent silt runoff to public roadways. c) Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for one month or more). d) Designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holidays and weekend periods when work may not be in progress. The name and telephone number of such person shall be provided to the BAAQMD prior to the start of construction as well as posted on-site over the duration of construction. e) Install appropriate wind breaks at the construction site to minimize wind blown dust.	

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Table II-1 Summary of Impacts, Conditions of Approval (COA) and Mitigation Measures (MM)

Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
Air Quality *continued*		**COA 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 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.	
E. NOISE AND VIBRATION			
No significant construction-related noise and vibration impacts would occur with implementation of the City Standard Conditions of Approval listed in this table.		**COA NOISE-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 a.m. and 7:00 p.m. Monday through Friday, except that pile driving and/or other extreme noise generating activities greater than 90 dBA limited to between 8:00 a.m. and 4:00 p.m. Monday through Friday.	

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Table II-1 Summary of Impacts, Conditions of Approval (COA) and Mitigation Measures (MM)

Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
Noise & Vibration *continued*		b) Any construction activity proposed to occur outside of the standard hours of 7:00 a.m. to 7:00 p.m. 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 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: • 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. • 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.	LTS

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Table II-1 Summary of Impacts, Conditions of Approval (COA) and Mitigation Measures (MM)

Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
Noise & Vibration *continued*		**COA NOISE-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 city 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 wherever possible 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.	LTS

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Table II-1 Summary of Impacts, Conditions of Approval (COA) and Mitigation Measures (MM)

Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
Noise & Vibration *continued*		**COA NOISE-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 City 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 City Building Services Division staff and Oakland Police Department; (during regular construction hours and off-hours); b) A sign posted on-site pertaining with 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.	LTS
		COA NOISE-4: Interior Noise. *Prior to issuance of a building permit.* 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) shall be incorporated into project building design, based upon recommendations of a qualified acoustical engineer. Final recommendations for sound-rated assemblies will depend on the specific building designs and layout of buildings on the site and shall be determined during the design phase; however, the following sound-rated assembly recommendations, based on	

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Table II-1 Summary of Impacts, Conditions of Approval (COA) and Mitigation Measures (MM)

Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
Noise & Vibration *continued*		the conceptual project layout and design (described in Chapter III, Project Description) should be included in the final study and will be included in the Standard Condition of Approval: An alternate form of ventilation, such as air conditioning systems, shall be included in the design for all units located within 659 feet of the centerline of SR-24, or within 153 feet of the centerline of 40th Street, or within 166 feet of the centerline of MacArthur Boulevard to ensure that widows can remain closed for prolonged periods of time to meet the interior noise standard and Uniform Building Code Requirements. All residential building façades directly exposed to and within 240 feet of the centerline of SR-24 must be constructed to meet the interior DNL 45 dB requirement; this likely could be achieved with an overall STC-30 rating with windows having a minimum STC-34 rating. This could be achieved with a typical 1-inch insulated glazing assembly, possibly with one light being laminated (or other appropriate example assembly). Quality control must be exercised in construction to ensure all air-gaps and penetrations of the building shell are controlled and sealed.	
		COA NOISE-5: Pile Driving and Other Extreme Noise Generators. *Ongoing throughout demolition, grading, and/or construction.* To further reduce potential pier drilling, pile driving and/or other extreme noise generating construction impacts greater than 90 dBA, a set of site-specific noise attenuation measures shall be completed under the supervision of a qualified acoustical consultant. Prior to commencing construction, a plan for such measures shall be submitted for review and approval by the City to ensure that maximum feasible noise attenuation will be achieved. This plan shall be based on the final design of the project. A third-party peer review, paid for by the project applicant, may be required to assist the City in evaluating the feasibility and effectiveness of the noise reduction plan submitted by the project applicant. The criterion for approving the plan shall be a determination that maximum feasible noise attenuation will be achieved. A special inspection deposit is required to ensure compliance with the noise reduction plan. The amount of the deposit shall be	

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Table II-1 Summary of Impacts, Conditions of Approval (COA) and Mitigation Measures (MM)

Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
Noise & Vibration *continued*		determined by the Building Official and the deposit shall be submitted by the project applicant concurrent with submittal of the noise reduction plan. The noise reduction plan shall include, but not be limited to, an evaluation of implementing the following measures. These attenuation measures shall include as many of the following control strategies as applicable to the site and construction activity: a) Erect temporary plywood noise barriers around the construction site, particularly along on sites adjacent to residential buildings; b) Implement "quiet" pile driving technology (such as pre-drilling of piles, the use of more than one pile driver to shorten the total pile driving duration), where feasible, in consideration of geotechnical and structural requirements and conditions; c) Utilize noise control blankets on the building structure as the building is erected to reduce noise emission from the site; d) Evaluate the feasibility of noise control at the receivers by temporarily improving the noise reduction capability of adjacent buildings by the use of sound blankets for example, and implement such measure if such measures are feasible and would noticeably reduce noise impacts; and e) Monitor the effectiveness of noise attenuation measures by taking noise measurements.	LTS
		COA NOISE-6: Vibrations Adjacent Historic Structures. *Prior to issuance of a demolition, grading or building permit*. The project applicant shall retain a structural engineer or other appropriate professional to determine threshold levels of vibration and cracking that could damage buildings adjacent to the project site and design means and methods of construction that shall be utilized to not exceed the thresholds.	

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Table II-1 Summary of Impacts, Conditions of Approval (COA) and Mitigation Measures (MM)

Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
F. HYDROLOGY AND WATER QUALITY			
No significant hydrology and water quality impacts would occur with implementation of the City Standard Conditions of Approval listed in this table.		**COA HYDRO-1 (same as COA GEO-1): Erosion and Sedimentation Control Plan.** *Prior to any grading activities.* a) The project applicant shall obtain a grading permit if required by the Oakland Grading Regulations pursuant to Section 15.04.780 of the Oakland Municipal Code. The grading permit application shall include an erosion and sedimentation control plan. The erosion and sedimentation control plan shall include all necessary measures to be taken to prevent excessive stormwater runoff or carrying by stormwater runoff of solid materials on to lands of adjacent property owners, public streets, or to creeks as a result of conditions created by grading operations. The plan shall include, but not be limited to, such measures as short-term erosion control planting, waterproof slope covering, check dams, interceptor ditches, benches, storm drains, dissipation structures, diversion dikes, retarding berms and barriers, devices to trap, store and filter out sediment, and stormwater retention basins. Off-site work by the project applicant may be necessary. The project applicant shall obtain permission or easements necessary for off-site work. There shall be a clear notation that the plan is subject to changes as changing conditions occur. Calculations of anticipated stormwater runoff and sediment volumes shall be included, if required by the Director of Development or designee. The plan shall specify that, after construction is complete, the project applicant shall ensure that the storm drain system shall be inspected and that the project applicant shall clear the system of any debris or sediment. *Ongoing throughout grading and construction activities.* b) The project applicant shall implement the approved erosion and sedimentation plan. No grading shall occur during the wet weather season (October 15 through April 15) unless specifically authorized in writing by the Building Services Division.	LTS

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Table II-1 Summary of Impacts, Conditions of Approval (COA) and Mitigation Measures (MM)

Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
Hydrology & Water Quality *continued*		**COA HYDRO-2: Stormwater Pollution Prevention Plan (SWPPP).** *Prior to and ongoing throughout demolition, grading, and/or construction activities.* The project applicant must obtain coverage under the General Construction Activity Storm Water Permit (General Construction Permit) issued by the State Water Resources Control Board (SWRCB). The project applicant must file a notice of intent (NOI) with the SWRCB. The project applicant will be required to prepare a stormwater pollution prevention plan (SWPPP). At a minimum, the SWPPP shall include a description of construction materials, practices, and equipment storage and maintenance; a list of pollutants likely to contact stormwater; site-specific erosion and sedimentation control practices; a list of provisions to eliminate or reduce discharge of materials to stormwater; Best Management Practices (BMPs), and an inspection and monitoring program. Prior to the issuance of any construction-related permits, the project applicant shall submit a copy of the SWPPP and evidence of approval of the SWPPP by the SWRCB to the Building Services Division. Implementation of the SWPPP shall start with the commencement of construction and continue though the completion of the project. After construction is completed, the project applicant shall submit a notice of termination to the SWRCB.	LTS
		COA HYDRO-3: Post-Construction Stormwater Pollution Management Plan. *Prior to issuance of building permit (or other construction-related permit.* The applicant shall comply with the requirements of Provision C.3 of the National Pollutant Discharge Elimination System (NPDES) permit issued to the Alameda Countywide Clean Water Program. The applicant shall submit with the application for a building permit (or other construction-related permit) a completed Stormwater Supplemental Form for the Building Services Division. The project drawings submitted for the building permit (or other construction-related permit) shall contain a stormwater pollution management plan, for review and approval by the City, to limit the discharge of pollutants in stormwater after construction of the project to the maximum extent practicable.	LTS

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Table II-1 Summary of Impacts, Conditions of Approval (COA) and Mitigation Measures (MM)

Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
Hydrology & Water Quality *continued*		a) The post-construction stormwater pollution management plan shall include and identify the following: • All proposed impervious surface on the site; • Anticipated directional flows of on-site stormwater runoff; and • Site design measures to reduce the amount of impervious surface area and directly connected impervious surfaces; and • Source control measures to limit the potential for stormwater pollution; and • Stormwater treatment measures to remove pollutants from stormwater runoff. b) The following additional information shall be submitted with the post-construction stormwater pollution management plan: • Detailed hydraulic sizing calculations for each stormwater treatment measure proposed; and • Pollutant removal information demonstrating that any proposed manufactured/mechanical (i.e., non-landscape-based) stormwater treatment measure, when not used in combination with a landscape-based treatment measure, is capable or removing the range of pollutants typically removed by landscape-based treatment measures. All proposed stormwater treatment measures shall incorporate appropriate planting materials for stormwater treatment (for landscape-based treatment measures) and shall be designed with considerations for vector/mosquito control. Proposed planting materials for all proposed landscape-based stormwater treatment measures shall be included on the landscape and irrigation plan for the project. The applicant is not required to include on-site stormwater treatment measures in the post-construction stormwater pollution management plan if he or she secures approval from Planning and Zoning of a proposal that demonstrates compliance with the requirements of the City's Alternative Compliance Program.	

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Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
Hydrology & Water Quality *continued*		*Prior to final permit inspection.* The applicant shall implement the approved stormwater pollution management plan.	
		COA HYDRO-4: Maintenance Agreement for Stormwater Treatment Measures. *Prior to final zoning inspection.* For projects incorporating stormwater treatment measures, the applicant shall enter into the "Standard City of Oakland Stormwater Treatment Measures Maintenance Agreement," in accordance with Provision C.3.e of the NPDES permit, which provides, in part, for the following: • The applicant accepting responsibility for the adequate installation/ construction, operation, maintenance, inspection, and reporting of any on-site stormwater treatment measures being incorporated into the project until the responsibility is legally transferred to another entity; and • Legal access to the on-site stormwater treatment measures for representatives of the City, the local vector control district, and staff of the Regional Water Quality Control Board, San Francisco Region, for the purpose of verifying the implementation, operation, and maintenance of the on-site stormwater treatment measures and to take corrective action if necessary. The agreement shall be recorded at the County Recorder's Office at the applicant's expense.	LTS
G. GEOLOGY, SOILS AND SEISMICITY			
No significant geology, soils and seismicity impacts would occur with implementation of the City Standard Conditions of Approval listed in this table.		**COA GEO-1 (same as COA HYDRO-1): Erosion and Sedimentation Control Plan.** *Prior to any grading activities.* a) The project applicant shall obtain a grading permit if required by the Oakland Grading Regulations pursuant to Section 15.04.780 of the Oakland Municipal Code. The grading permit application shall include an erosion and sedimentation control plan. The erosion and sedimentation control plan shall include all necessary measures to be taken to prevent excessive stormwater runoff or carrying by stormwater runoff of solid materials on to lands of adjacent property owners, public streets, or to creeks as a result of conditions created by grading operations. The plan shall include, but not be limited to, such measures as short-term erosion control planting, waterproof	LTS

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Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
Geology, Soils and Seismicity *continued*		slope covering, check dams, interceptor ditches, benches, storm drains, dissipation structures, diversion dikes, retarding berms and barriers, devices to trap, store and filter out sediment, and stormwater retention basins. Off-site work by the project applicant may be necessary. The project applicant shall obtain permission or easements necessary for off-site work. There shall be a clear notation that the plan is subject to changes as changing conditions occur. Calculations of anticipated stormwater runoff and sediment volumes shall be included, if required by the Director of Development or designee. The plan shall specify that, after construction is complete, the project applicant shall ensure that the storm drain system shall be inspected and that the project applicant shall clear the system of any debris or sediment. *Ongoing throughout grading and construction activities.* b) The project applicant shall implement the approved erosion and sedimentation plan. No grading shall occur during the wet weather season (October 15 through April 15) unless specifically authorized in writing by the Building Services Division.	
		COA GEO-2: Soils Report. *Required as part of the submittal of a Tentative Tract or Tentative Parcel Map.* A preliminary soils report for each construction site within the project area shall be required as part if this project. The soils reports shall be based, at least in part, on information obtained from on-site testing. Specifically the minimum contents of the report should include: *A. Logs of borings and/or profiles of test pits and trenches:* a) The minimum number of borings acceptable, when not used in combination with test pits or trenches, shall be two (2), when in the opinion of the Soils Engineer such borings shall be sufficient to establish a soils profile suitable for the design of all the footings, foundations, and retaining structures. b) The depth of each boring shall be sufficient to provide adequate design criteria for all proposed structures.	LTS

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Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
Geology, Soils and Seismicity *continued*		c) All boring logs shall be included in the soils report. *B. Test pits and trenches:* a) Test pits and trenches shall be of sufficient length and depth to establish a suitable soils profile for the design of all proposed structures. b) Soils profiles of all test pits and trenches shall be included in the soils report. *C. A plat shall be included which shows the relationship of all the borings, test pits, and trenches to the exterior boundary of the site. The plat shall also show the location of all proposed site improvements. All proposed improvements shall be labeled.* *D. Copies of all data generated by the field and/or laboratory testing to determine allowable soil bearing pressures, sheer strength, active and passive pressures, maximum allowable slopes where applicable and any other information which may be required for the proper design of foundations, retaining walls, and other structures to be erected subsequent to or concurrent with work done under the grading permit.* E. *Soils Report.* A written report shall be submitted which shall but is not limited to the following: a. Site description. b. Local and site geology. c. Review of previous field and laboratory investigations for the site. d. Review of information on or in the vicinity of the site on file at the Information Counter, City of Oakland, Office of Planning and Building. e. Site stability shall be addressed with particular attention to existing conditions and proposed corrective attention to existing conditions and proposed corrective actions at locations where land stability problems exist. f. Conclusions and recommendations for foundations and retaining structures, resistance to lateral loading, slopes, and specifications, for fills, and pavement design as required.	

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Table II-1 Summary of Impacts, Conditions of Approval (COA) and Mitigation Measures (MM)

Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
Geology, Soils and Seismicity *continued*		g. Conclusions and recommendations for temporary and permanent erosion control and drainage. If not provided in a separate report they shall be appended to the required soils report. h. All other items which a Soils Engineer deems necessary. i. The signature and registration number of the Civil Engineer preparing the report. *F. The Director of Planning and Building may reject a report that she/he believes is not sufficient. The Director of Planning and Building may refuse to accept a soils report if the certification date of the responsible soils engineer on said document is more than three years old. In this instance , the Director may be require that the old soils report be recertified, that an addendum to the soils report be submitted, or that a new soils report be provided.*	
		COA GEO-3: Geotechnical Report. *Required as part of the submittal of a tentative Tract Map or tentative Parcel Map.* a) A site-specific, design level, Landslide or Liquefaction geotechnical investigation for each construction site within the project area shall be required as part if this project. Specifically: Each investigation shall include an analysis of expected ground motions at the site from identified faults. The analyses shall be accordance with applicable City ordinances and polices, and consistent with the most recent version of the California Building Code, which requires structural design that can accommodate ground accelerations expected from identified faults. The investigations shall determine final design parameters for the walls, foundations, foundation slabs, surrounding related improvements, and infrastructure (utilities, roadways, parking lots, and sidewalks). The investigations shall be reviewed and approved by a registered geotechnical engineer. All recommendations by the project engineer, geotechnical engineer, will be included in the final design, as approved by the City of Oakland.	LTS

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Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
Geology, Soils and Seismicity *continued*		The geotechnical report shall include a map prepared by a land surveyor or civil engineer that shows all field work and location of the "No Build" zone. The map shall include a statement that the locations and limitations of the geologic features are accurate representations of said features as they exist on the ground, were placed on this map by the surveyor, the civil engineer or under their supervision, and are accurate to the best of their knowledge. Recommendations that are applicable to foundation design, earthwork, and site preparation that were prepared prior to or during the projects design phase, shall be incorporated in the project. A peer review is required for the Geotechnical Report. Personnel reviewing the geologic report shall approve the report, reject it, or withhold approval pending the submission by the applicant or subdivider of further geologic and engineering studies to more adequately define active fault traces. Final seismic considerations for the site shall be submitted to and approved by the City of Oakland Building Services Division prior to commencement of the project. b) Tentative Tract or Parcel Map approvals shall require, but not be limited to approval of the Geotechnical Report.	
H. PUBLIC HEALTH AND HAZARDS			
No significant public health and hazards impacts would occur with implementation of the City Standard Conditions of Approval listed in this table.		**COA HAZ-1: Hazards Best Management Practices.** *Prior to issuance of a demolition, grading, or building permit.* The project applicant and construction contractor shall ensure that construction best management practices are implemented as part of construction to minimize the potential negative effects to groundwater and soils. These shall include the following: a) Follow manufacture's recommendations on use, storage, and disposal of chemical products used in construction; b) Avoid overtopping construction equipment fuel gas tanks; c) During routine maintenance of construction equipment, properly contain and remove grease and oils;	LTS

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Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
Public Health & Hazards *continued*		d) Properly dispose of discarded containers of fuels and other chemicals. e) Ensure that construction would not have a significant impact on the environment or pose a substantial health risk to construction workers and the occupants of the proposed development. Soil sampling and chemical analyses of samples shall be performed to determine the extent of potential contamination beneath all UST's, elevator shafts, clarifiers, and subsurface hydraulic lifts when on-site demolition, or construction activities would potentially affect a particular development or building. f) If soil, groundwater or other environmental medium with suspected contamination is encountered unexpectedly during construction activities (e.g., identified by odor or visual staining, or if any underground storage tanks, abandoned drums or other hazardous materials or wastes are encountered), the applicant shall cease work in the vicinity of the suspect material, the area shall be secured as necessary, and the applicant shall take all appropriate measures to protect human health and the environment. Appropriate measures shall include notification of regulatory agency(ies) and implementation of the actions described in Standard Conditions of Approval (see COA HAZ-3 and HAZ-5 below) as necessary, to identify the nature and extent of contamination. Work shall not resume in the area(s) affected until the measures have been implemented under the oversight of the City or regulatory agency, as appropriate.	
		COA HAZ-2: Asbestos Removal in Structures. *Prior to issuance of a demolition permit*. If asbestos is found to be present in building materials to be removed, demolition and disposal is required to be conducted in accordance with procedures specified by Regulation 11, Rule 2 (Asbestos Demolition, Renovation and Manufacturing) of Bay Area Air Quality Management District (BAAQMD) regulations, as may be amended.	LTS

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Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
Public Health & Hazards *continued*		**COA HAZ-3: Phase I and/or Phase II Reports.** *Prior to issuance of a demolition, grading, or building permit.* Prior to issuance of demolition, grading, or building permits the project applicant shall submit to the Fire Prevention Bureau, Hazardous Materials Unit, a Phase I environmental site assessment report, and a Phase II report if warranted by the Phase I report for the project site. The reports shall make recommendations for remedial action, if appropriate, and should be signed by a Registered Environmental Assessor, Professional Geologist, or Professional Engineer.	LTS
		COA HAZ-4: Lead-Based Paint/Coatings, Asbestos, or PCB Occurrence Assessment. *Prior to issuance of a demolition, grading, or building permit.* The project applicant shall submit a comprehensive assessment report, signed by a qualified environmental professional, documenting the presence or lack thereof of asbestos-containing materials (ACM), lead-based paint, and any other building materials or stored materials classified as hazardous waste by State or federal law.	LTS
		COA HAZ-5: Environmental Site Assessment Reports Remediation. *Prior to issuance of a demolition, grading, or building permit.* If the environmental site assessment reports recommend remedial action, the project applicant shall: a) Consult with the appropriate local, State, and federal environmental regulatory agencies to ensure sufficient minimization of risk to human health and environmental resources, both during and after construction, posed by soil contamination, groundwater contamination, or other surface hazards including, but not limited to, underground storage tanks, fuel distribution lines, waste pits and sumps. b) Obtain and submit written evidence of approval for any remedial action if required by a local, State, or federal environmental regulatory agency.	LTS

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Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
Public Health & Hazards *continued*		c) Submit a copy of all applicable documentation required by local, State, and federal environmental regulatory agencies, including but not limited to: permit applications, Phase I and II environmental site assessments, human health and ecological risk assessments, remedial action plans, risk management plans, soil management plans, and groundwater management plans. Prior to issuing any permits for construction at the project site, a Construction-Phase Risk Management Plan (RMP) shall be prepared for the project. The RMP shall include any health and safety measures determined necessary in the HHRA to protect the health of construction workers and nearby public during construction activities. These measures may potentially include dust control, air monitoring, and/or the use of personal protective equipment during construction activities. Action levels for contaminants of concern shall be established, with detailed descriptions of corrective actions to be taken in the event that the action levels are reached during monitoring. The RMP shall also include safety and emergency response measures included in the City's Standard Conditions HAZ-1 and HAZ-2. The RMP shall be reviewed and approved by the City of Oakland or designated regulatory oversight agency. d) Implementation of COA HAZ-5 would require a Remediation Action Plan (RAP). Required remedial actions shall include measures to ensure that any potential added health risks to future site users as a result of hazardous materials are reduced to a cumulative human health risk of less than 1 × 10-6 (one in one million) for carcinogens and a cumulative hazard index of 1.0 for non-carcinogens, or other site-specific goals established by regulatory oversight agencies. The potential risks to human health in excess of these goals may be reduced either by remediation of the contaminated soils or groundwater (e.g., excavation.	

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Public Health & Hazards *continued*		and off-site disposal of soils and treatment of groundwater) and/or implementation of institutional controls and engineering controls (IC/EC). IC/EC may include the use of hardscape (buildings and pavements), importation of clean soil in landscaped areas to eliminate exposure pathways, and deed restrictions. Specific remedies would depend on the findings of the site-specific HHRA and the requirements of the regulatory agencies	
		COA HAZ-6: Lead-Based Paint Remediation. *Prior to issuance of a demolition, grading, or building permit.* If lead-based paint is present, the project applicant shall submit specifications signed by a certified Lead Supervisor, Project Monitor, or Project Designer for the stabilization and/or removal of the identified lead paint in accordance with all applicable laws and regulations, including but not necessarily limited to: Cal/OSHA's Construction Lead Standard, 8 CCR1532.1 and DHS regulation 17 CCR Sections 35001 through 36100, as may be amended.	LTS
		COA HAZ-7: Asbestos Remediation. *Prior to issuance of a demolition, grading, or building permit.* If asbestos-containing materials (ACM) are present, 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.	LTS
		COA HAZ-8: Other Materials Classified as Hazardous Waste. *Prior to issuance of a demolition, grading, or building permit.* If other building materials or stored materials classified as hazardous waste by State or federal law is present, the project applicant shall submit written confirmation that all State and federal laws and regulations shall be followed when profiling, handling, treating, transporting and/or disposing of such materials.	LTS

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Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
Public Health & Hazards *continued*		**COA HAZ-9: Health and Safety Plan per Assessment.** *Prior to issuance of a demolition, grading, or building permit.* If the required lead-based paint/coatings, asbestos, or PCB assessment finds presence of such materials, the project applicant shall create and implement a health and safety plan to protect workers from risks associated with hazardous materials during demolition, renovation of affected structures, and transport and disposal.	LTS
		COA HAZ-10: Fire Safety Phasing Plan. *Prior to issuance of a demolition, grading, or building permit and concurrent with any p-job submittal permit.* The project applicant shall submit a separate fire safety phasing plan to the Planning and Zoning Division and Fire Services Division for their review and approval. The fire safety plan shall include all of the fire safety features incorporated into the project and the schedule for implementation of the features. Fire Services Division may require changes to the plan or may reject the plan if it does not adequately address fire hazards associated with the project as a whole or the individual phase.	LTS
		COA HAZ-11: Fire Safety. *Prior to and ongoing throughout demolition, grading, and/or construction..* The project applicant and construction contractor will ensure that during project construction, all construction vehicles and equipment will be fitted with spark arrestors to minimize accidental ignition of dry construction debris and surrounding dry vegetation.	LTS
I. PUBLIC SERVICES			
No significant public services impacts would occur with implementation of the City Standard Conditions of Approval listed in this table.		**COA SERV-1: Conformance with other Requirements.** *Prior to issuance of a demolition, grading, P-job, or other construction related permit.* a) The project applicant shall comply with all other applicable federal, state, regional and/or local codes, requirements, regulations, and guidelines, including but not limited to those imposed by the City's Building Services Division, the City's Fire Marshal, and the City's Public Works Agency.	LTS

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Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
Public Services *continued*		b) The applicant shall submit approved building plans for project-specific needs related to fire protection to the Fire Services Division for review and approval, including, but not limited to automatic extinguishing systems, water supply improvements and hydrants, fire department access, and vegetation management for preventing fires and soil erosion.	
		COA SERV-2: Fire Safety Phasing Plan. *Prior to issuance of a demolition, grading, and/or construction and concurrent with any p-job submittal permit,* the project applicant shall submit a separate fire safety phasing plan to the Planning and Zoning Division and Fire Services Division for their review and approval. The fire safety plan shall include all of the fire safety features incorporated into the project and the schedule for implementation of the features. Fire Services Division may require changes to the plan or may reject the plan if it does not adequately address fire hazards associated with the project as a whole or the individual phase.	LTS
J. UTILITIES AND INFRASTRUCTURE			
No significant utilities and infrastructure impacts would occur with implementation of the City Standard Conditions of Approval listed in this table.		**COA UTIL-1: Waste Reduction and Recycling.** The project applicant will submit a Construction & Demolition Waste Reduction and Recycling Plan (WRRP) and an Operational Diversion Plan (ODP) for review and approval by the Public Works Agency. *Prior to issuance of demolition, grading, or building permit.* Chapter 15.34 of the Oakland Municipal Code outlines requirements for reducing waste and optimizing construction and demolition (C&D) recycling. Affected projects include all new construction, renovations/ alterations/modifications with construction values of $50,000 or more (except R-3), and all demolition (including soft demo).The WRRP must specify the methods by which the development will divert C&D debris waste generated by the proposed project from landfill disposal in accordance with current City requirements. Current standards, FAQs, and forms are available at www.oaklandpw.com/Page39.aspx or in the Green Building Resource Center. After approval of the plan, the project applicant shall implement the plan.	LTS

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Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
Utilities & Infrastructure *continued*		*Ongoing.* The ODP will identify how the project complies with the Recycling Space Allocation Ordinance, (Chapter 17.118 of the Oakland Municipal Code), including capacity calculations, and specify the methods by which the development will meet the current diversion of solid waste generated by operation of the proposed project from landfill disposal in accordance with current City requirements. The proposed program shall be in implemented and maintained for the duration of the proposed activity or facility. Changes to the plan may be re-submitted to the Environmental Services Division of the Public Works Agency for review and approval. Any incentive programs shall remain fully operational as long as residents and businesses exist at the project site.	
		COA UTIL-2: Storm Water and Sewer. *Prior to completing the final design for the project's sewer service.* Confirmation of the capacity of the City's surrounding stormwater and sanitary sewer system and state of repair shall be completed by a qualified civil engineer with funding from the project applicant. The project applicant shall be responsible for the necessary stormwater and sanitary sewer infrastructure improvements to accommodate the proposed project. In addition, the applicant shall be required to pay additional fees to improve sanitary sewer infrastructure if required by the City. Improvements to the existing sanitary sewer collection system shall specifically include, but are not limited to, mechanisms to control or minimize increases in infiltration/inflow to offset sanitary sewer increases associated with the proposed project. To the maximum extent practicable, the applicant will be required to implement Best Management Practices to reduce the peak stormwater runoff from the project site. Additionally, the project applicant shall be responsible for payment of the required installation or hook-up fees to the affected service providers.	LTS

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Table II-1 Summary of Impacts, Conditions of Approval (COA) and Mitigation Measures (MM)

Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
K. CULTURAL AND PALEONTOLOGICAL RESOURCES			
No significant cultural and paleontological resources impacts would occur with implementation of the City Standard Conditions of Approval listed in this table.		**COA CULT-1: Archaeological Resources.** *Ongoing throughout demolition, grading, and/or construction* Pursuant to CEQA Guidelines section 15064.5 (f), "provisions for historical or unique archaeological resources accidentally discovered during construction" should be instituted. Therefore, in the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and the project applicant and/or lead agency shall consult with a qualified archaeologist or paleontologist to assess the significance of the find. If any find is determined to be significant, representatives of the project proponent and/or lead agency and the qualified archaeologist would meet to determine the appropriate avoidance measures or other appropriate measure, with the ultimate determination to be made by the City of Oakland. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and a report prepared by the qualified archaeologist according to current professional standards. In considering any suggested measure proposed by the consulting archaeologist in order to mitigate impacts to historical resources or unique archaeological resources, the project applicant shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project site while measure for historical resources or unique archaeological resources is carried out.	LTS

LTS = Less Than Significant , SU = Significant and Unavoidable, S = Significant

Table II-1 Summary of Impacts, Conditions of Approval (COA) and Mitigation Measures (MM)

Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
Cultural & Paleontological Resources *continued*		Should an archaeological artifact or feature be discovered on-site during project construction, all activities within a 50-foot radius of the find would be halted until the findings can be fully investigated by a qualified archaeologist to evaluate the find and assess the significance of the find according to the CEQA definition of a historical or unique archaeological resource. If the deposit is determined to be significant, the project applicant and the qualified archaeologist shall meet to determine the appropriate avoidance measures or other appropriate measure, subject to approval by the City of Oakland, which shall assure implementation of appropriate measure measures recommended by the archaeologist. Should archaeologically-significant materials be recovered, the qualified archaeologist shall recommend appropriate analysis and treatment, and would prepare a report on the findings for submittal to the Northwest Information Center.	
		COA CULT-2: Human Remains. *Ongoing throughout demolition, grading, and/or construction* In the event that human skeletal remains are uncovered at the project site during construction or ground-breaking activities, all work shall immediately halt and the Alameda County Coroner shall be contacted to evaluate the remains, and following the procedures and protocols pursuant to Section 15064.5 (e)(1) of the CEQA Guidelines. If the County Coroner determines that the remains are Native American, the City shall contact the California Native American Heritage Commission (NAHC), pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code, and all excavation and site preparation activities shall cease within a 50-foot radius of the find until appropriate arrangements are made. If the agencies determine that avoidance is not feasible, then an alternative plan shall be prepared with specific steps and timeframe required to resume construction activities. Monitoring, data recovery, determination of significance and avoidance measures (if applicable) shall be completed expeditiously.	LTS

LTS = Less Than Significant , SU = Significant and Unavoidable, S = Significant

Table II-1 Summary of Impacts, Conditions of Approval (COA) and Mitigation Measures (MM)

Impact	Level of Significance Without MM	Standard COA/MM	Level of Significance With MM/COA
Cultural & Paleontological Resources *continued*		**COA CULT-3: Paleontological Resources.** *Ongoing throughout demolition, grading, and/or construction* In the event of an unanticipated discovery of a paleontological resource during construction, excavations within 50 feet of the find shall be temporarily halted or diverted until the discovery is examined by a qualified paleontologist (per Society of Vertebrate Paleontology standards (SVP 1995,1996)). The qualified paleontologist shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the City determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project on the qualities that make the resource important, and such plan shall be implemented. The plan shall be submitted to the City for review and approval.	LTS
L. AESTHETIC RESOURCES			
No significant lighting impacts would occur with implementation of the City Standard Conditions of Approval listed in this table.		**COA AES-1: Lighting Plan**. *Prior to the issuance of an electrical or building permit* The proposed lighting fixtures shall be adequately shielded to a point below the light bulb and reflector and that prevent unnecessary glare onto adjacent properties. All lighting shall be architecturally integrated into the site.	LTS

LTS = Less Than Significant , SU = Significant and Unavoidable, S = Significant

Table II-2 Recommendations

TRANS-1: In consultation with City of Oakland staff and pending feasibility studies, the following improvements should be considered in and around the project area: • Removal of the slip right-turns on northbound and southbound Telegraph Avenue at West MacArthur Boulevard. • Providing street furniture and widening sidewalks where feasible in and around the project site. • Providing pedestrian scale lighting on MacArthur Boulevard under the freeway overpass. • Specific intersection improvements, such as advanced stop bars, median refuge islands, reduced corner curb radii, raised crosswalks, curb bulb-outs, audible pedestrian signals, and pedestrian and bicycle signal detection.
TRANS-2: Project applicant should pay to monitor traffic volumes and speeds on the following roadways before and after the completion of the proposed project: • 37th Street between West MacArthur Boulevard and Telegraph Avenue; • 38th Street between Telegraph Avenue and Webster Street; and • Clarke Street and Ruby Street between 38th Street and 40th Street. In consultation with local residents, and in accordance with all legal requirements, appropriate traffic calming measures, such as speed humps, or roadway closures, should be considered if and when excessive traffic volumes or speeding are observed. These potential improvements should be funded by the project applicant.
NOISE-1: All exterior active use areas, including playgrounds, patios, and decks, shall either be shielded by buildings to block any direct line of sight to 40th Street, MacArthur Boulevard, or SR-24; or be located a minimum of 87 feet from the centerline of 40th Street, a minimum of 94 feet from the centerline of MacArthur Boulevard, and a minimum of 372 feet from the centerline of SR-24.

III. PROJECT DESCRIPTION

This chapter describes the proposed MacArthur Transit Village Project (project), which is evaluated in this Environmental Impact Report (EIR). The chapter begins with a description of the project site, regional and planning context, objectives and a discussion of relevant project background, followed by a detailed description of the proposed project and a discussion of the intended uses of the EIR and required project approvals and entitlements.

A. PROJECT SITE

1. Location

The project site is located in North Oakland, within the area bounded by 40th Street, Telegraph Avenue, West MacArthur Boulevard, and State Route 24, as shown in Figure III-1. The project site includes the BART parking lot, the BART plaza, Frontage Road between West MacArthur Boulevard and 40th Street, and seven privately owned parcels. Several parcels in the area are not included in the project site, as shown in Figure III-2, including the parcel on the southwest corner of 40th Street and Telegraph Avenue, and some of the parcels that front on Telegraph Avenue (between Apgar Street and West MacArthur Boulevard) and West MacArthur Boulevard.

2. Site Characteristics

The project site is approximately 8.2 acres and is comprised of 10 parcels, the existing BART Plaza, two unimproved roadway rights-of-way between Telegraph Avenue and Frontage Road, and Frontage Road between West MacArthur Boulevard and 40th Street. Three of the parcels are owned by the San Francisco Bay Area Rapid Transit District (BART) (APNs: 012-0969-053-03; 012-0967-049-01; 012-0968-055-01); the remaining seven parcels are privately owned (APNs: 012-0969-002-00; 012-0969-003-00; 012-0969-053-02; 012-0969-004-00; 012-0968-003-01; 012-0967-009-00; 012-0967-010-00). The size and existing use for each parcel are listed in Table III-1, and the location of the parcels is shown in Figure III-2.

BART Plaza and fare gates.

The majority of the project site is currently developed with a below-grade surface parking lot with approximately 600 parking spaces for the MacArthur BART Station. The parcels that

FIGURE III-1

N

0 1000 2000
feet

Legend

Project Site

MacArthur Transit Village Project EIR
Project Location and
Regional Vicinity Map

SOURCE: CALIFORNIA STATE AUTOMOBILE ASSOCIATION, 2000.

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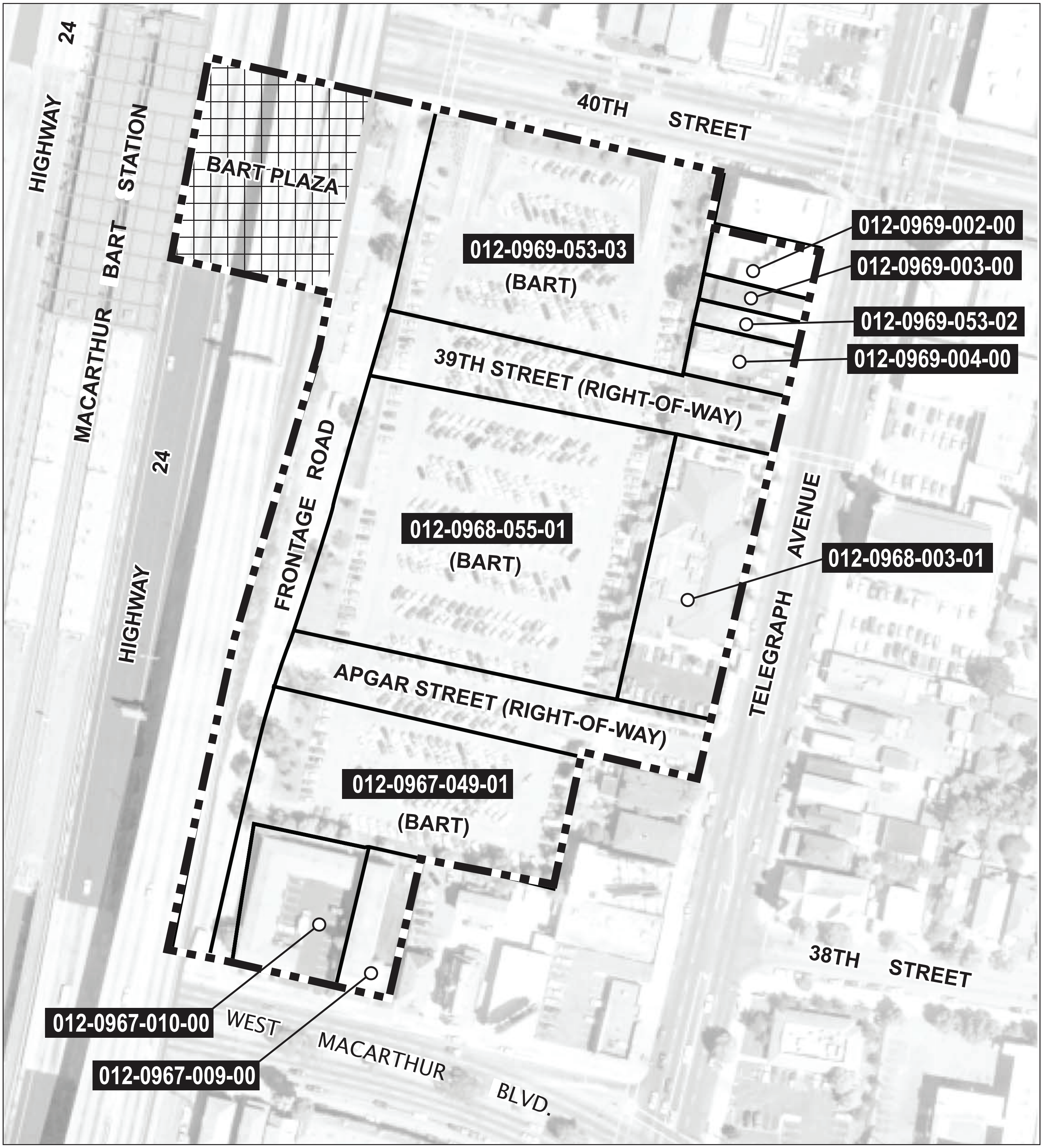

FIGURE III-2

Legend

Project site
BART Plaza
Parcel lines

N

0 75 150
feet

MacArthur Transit Village Project EIR
Parcels within Project Site

SOURCE: CITY OF OAKLAND, 2006.

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Table III-1 Project Site Parcels and BART Plaza

Address	Assessor Parcel Number	Current Use	Acreage (Acres)
532 39th Street	012-0969-053-03	BART Parking	1.61
516 Apgar Street	012-0968-055-01	BART Parking	2.07
515 Apgar Street	012-0967-049-01	BART Parking	1.12
3921 Telegraph Avenue	012-0969-002-00	Braids By Betty	0.15
3915 Telegraph Avenue	012-0969-003-00	Chef Yu Restaurant	0.06
3911 Telegraph Avenue	012-0969-053-02	Abyssinia Market	0.06
3901 Telegraph Avenue	012-0969-004-00	Lee's Auto	0.11
3875 Telegraph Avenue	012-0968-003-01	Medical Offices	0.61
526 W. MacArthur Boulevard	012-0967-009-00	Hotel	0.20
544 W. MacArthur Boulevard	012-0967-010-00	Hotel	0.17
BART Plaza	--	BART Plaza	0.80
39th Street, between Telegraph Ave. and Frontage Rd.	--	BART Parking	0.62
Apgar Street, between Telegraph Ave. and Frontage Rd.	--	BART Parking	0.60
Total			**8.18**

Source: City of Oakland and MacArthur Transit Community Partners, 2007.

front on Telegraph Avenue and West MacArthur Boulevard are developed with commercial development. The structures vary in height and construction materials, and contain commercial and office uses. Minimal landscaping is located around the perimeter of the project site.

The BART Plaza is located under State Route 24, west of the proposed frontage road. This plaza provides pedestrian access to the MacArthur BART Station fare gates, and includes a vendor area, a bicycle storage area, public art, and waiting areas for shuttle and bus operators. The MacArthur BART station is served by three of the five BART lines: Richmond-Fremont BART line, the Richmond-Daly City BART line, and the Pittsburg/Bay Point – Daly City BART line.[1]

Frontage Road is located between the BART Plaza and the BART parking lot, and extends between West MacArthur Boulevard and 40th Street. Frontage Road is currently used by shuttle operators and kiss-and-ride drivers for drop off/pick up of BART passengers and by BART service vehicles for station maintenance.

[1] Destinations for the Richmond and Pittsburg/Bay Point lines are proposed to change to the following in January 2008: Richmond-Millbrae and Pittsburg/Bay Point – SFO Airport.

The project site consists of privately-owned parcels and BART-owned parcels. The project sponsor will seek to negotiate acquisition of the privately-owned parcels and will work with BART to reach an agreement for the sale or lease of the parcels owned by BART. It is anticipated that ownership of the BART Plaza improvements will be retained by BART.

3. Surrounding Land Uses

As the project site is located within an urban area, there are a variety of land uses surrounding the site. A church, commercial, and residential uses are located to the east across Telegraph Avenue from the project site. To the north of the project site, across 40th Street, are residential and commercial uses. Residential and commercial uses extend further north of the project site. State Route 24, and the BART tracks, are located to the west of the project site. A residential neighborhood that includes a mix of densities is located further west. The State Route 24/ Interstate 580 interchange is located southwest of the project site. Commercial uses are located to the south of the project site. A more detailed discussion of existing and planned land uses is provided in Section IV.A, Land Use, and Figure IV.A-1 illustrates the existing land uses on and surrounding the project site.

Adjacent to project site, across 40th Street.

4. Existing General Plan, Zoning, and Redevelopment Plan Designations

The General Plan land use classification for the project site, as established by the Land Use and Transportation Element (LUTE) of the Oakland General Plan,[2] is Neighborhood Center Mixed-Use. The land use classifications for the project site and surrounding area are shown on Figure IV.B-1, in Section IV.B, Public Policy. The LUTE states that the desired character for future development within the Neighborhood Center Mixed Use designation is commercial or mixed use developments that are pedestrian-oriented and serve nearby neighborhoods, or urban residential with ground-floor commercial development.

View of project site with State Route 24 in foreground.

[2] City of Oakland, 1998. *General Plan, Land Use and Transportation Element.* March.

The zoning designations for the project site include Commercial Shopping (C-28/S-18) and High Density Residential (R-70/S-18). The zoning designations of the project site and surrounding area are shown in Figure IV.B-2 in Section IV.B, Public Policy. The C-28 zone is intended to create, preserve, and enhance major boulevards of medium-scale commercial establishments and to encourage mixed-use residential and non-residential development. The R-70 zone is intended to create, preserve, and enhance areas for apartment living at high densities in desirable settings, including areas having good accessibility to transportation routes and major shopping and community centers.[3] The S-18 is an overlay zone that requires design review of major projects (when said projects are not otherwise subject to design review via a Conditional Use Permit or Planned Unit Development Permit) to ensure that new construction is compatible with surrounding land uses.

The project site is within the Broadway/MacArthur/San Pablo Redevelopment Plan Area.[4] The purpose of the Redevelopment Plan includes eliminating blight, retaining existing businesses and attracting new commercial enterprises, improving and creating new housing stock, and improving area infrastructure.

B. PROJECT BACKGROUND

In 1993, the City of Oakland, BART, and residents and merchants from around the MacArthur BART station created a Citizen's Planning Committee (CPC) for the MacArthur BART site and surrounding neighborhood. Neighborhood associations, block groups, merchants, and others have representatives on the CPC have been meeting to create a development vision for the site and surrounding area.

In 2004, BART and the City of Oakland Redevelopment Agency (Agency) released a Request for Proposals for a development team to plan, design, construct, and operate a mixed-use project with a residential focus at the MacArthur BART Station in Oakland. In April 2004, BART and the Agency selected a development team for the MacArthur Transit Village: the MacArthur Transit Community Partners, LLC (MTCP). MTCP is comprised of two development firms: BRIDGE Urban Infill Land Development and McGrath Properties, Inc.

In 2006, MTCP proposed an 800 residential unit project that included two 22-story towers, 30,000 square feet of commercial space, and over 1,000 parking spaces. In February 2006, the City of Oakland published a Notice of Preparation for an Environmental Impact Report to evaluate that project and the Planning Commission heard comments on the scope of the EIR.

[3] City of Oakland Municipal Code, Title 17, Planning Code, Section 17.28 and 17.44.

[4] City of Oakland, 2000. *Redevelopment Plan for the Broadway/MacArthur/San Pablo Redevelopment Project.* Amended March, 2007.

In 2007 MTCP revised the proposed project to include fewer residential units (2007 project). This project includes up to 675 residential units (including up to 113 affordable units), up to 44,000 square feet of commercial space, 5,000 square feet of community space in five buildings with a maximum height of seven stories. Approximately 1,000 parking spaces are also proposed. On June 13, 2007, the City of Oakland published a revised NOP for the 2007 project, and accepted public comments on the scope of this EIR until July 13, 2007. The 2007 project is evaluated in this EIR.

C. PROJECT OBJECTIVES

The MacArthur Transit Village Project seeks to redevelop and revitalize an underutilized site in Oakland to create a vibrant transit village that provides pedestrian-oriented, mixed-use development (housing, commercial and community services) that enhances the character of the neighborhood and improves BART ridership and access to BART (for all travel modes). Specifically, the project seeks to:

- Create a transit-oriented community that encourages pedestrian and bicycle access and the use of public transportation.
- Increase transit ridership and enhance quality of life at and around the BART station by encouraging and supporting high quality transit-oriented development (TOD) within walking distance of the BART station.
- Enhance City and local community redevelopment efforts and strengthen existing neighborhood-serving businesses.
- Improve safety on and around the project site by activating the development's street-level experience through ground floor commercial and residential stoop entries that promote more "eyes on the street."
- Provide a substantial number of affordable housing units that can be developed on the site to serve low and very low income families.
- Develop market-rate residential units at urban densities that provide housing opportunities for a range of income levels.
- Develop urban infill housing with convenient transportation access near the urban core that would serve to divert housing from outlying areas and reduce long distance commute traffic-related pollution.
- Become a model transit village for environmentally friendly and sustainable development.
- Construct financially feasible developments with sufficient flexibility to adjust to market needs and to provide reasonable returns on investment so as to secure construction and long-term financing.

- Provide transit patrons and community residents with additional opportunities to purchase goods and services.
- Provide employment opportunities from development and operation of mixed-use development around the station.

Additionally, the following objectives relate specifically to BART improvements:

- Increase BART ridership.
- Improve the existing public open space in front of the BART fare gates, including the BART Plaza and the area surrounding the station, to revitalize the station area and incorporate the plaza into the design of the development to more effectively link it to the surrounding community.
- Encourage alternatives to single-occupant vehicle access to the BART station, such as access by walking, bicycles, passenger drop-off/pick-up and transit.
- Increase TOD projects on and off BART property through creative planning and development partnerships with the local community.
- Minimize the physical barriers created in the community by the construction of the BART Station and State Route 24 through the reintegration of the BART Station with the surrounding community.

D. PROPOSED PROJECT

The proposed project would involve the demolition of all existing buildings and parking lots on the project site to allow for the construction of a new mixed-use, transit village development project. The transit village includes five new buildings that will accommodate for-rent and for-sale residential units, neighborhood-serving commercial and commercial uses, live/work units and a community center or childcare use. New land uses in the project area would be consistent with the land uses prescribed in the S-15, Transit-Oriented Development Zone. The project also includes two new internal roadways, a parking garage, landscaping and other streetscape improvements (i.e., benches and street lighting), and improvements to the BART plaza. In summary the project includes the following elements:

- Demolition of existing structures and remediation of hazardous materials;
- Up to 675 dwelling units (562 market-rate units and 113 affordable rentals units);
- Up to 44,000 square feet of commercial space (includes up to 18 live/work units);
- 5,000 square feet of community center space or childcare facility;
- Approximately 1,000 parking spaces (structured), which includes 300 exclusive BART patrons parking spaces, and 30 to 45 on-street parking spaces would be provided.
- The development of pedestrian and bicycle friendly internal streets and walkways;

- Two new traffic signals at the intersections of Village Drive/Telegraph Avenue and West MacArthur Boulevard/Frontage Road;
- A Residential Parking Permit program option for the adjacent neighborhoods;
- Improvements to the BART Plaza and other public access improvements; and
- Sustainable development that meets the objectives of the US Green Building Council LEED Neighborhood Development (ND) Pilot Program goals.

The following discussion provides a detailed description of the project based on information provided by the applicant.

1. Demolition

All of the existing structures on the project site, as identified in Table III-1, would be demolished.[5] This includes removal of the on-site billboard and the BART parking lot; however, the BART Plaza will be maintained at its current location. In addition to removal of buildings and parking lots, all of the trees on the project site are anticipated to be removed.

BART parking lot and trees along eastern project boundary to be removed.

2. Buildings and Uses

The proposed project would involve the construction of five buildings (A-E) on the project site, including three mixed-use buildings with ground floor commercial and commercial spaces and residential units on upper floors, one entirely residential building and one parking garage. Figure III-3 shows a Conceptual Site Plan for the proposed project. Table III-2 and the text below provides a summary of the proposed buildings and uses within the project. Figures III-4 through III-9 show conceptual building floor plans and elevations for the proposed project.

a. Building A. Building A is a four- to six-story building (with a below-grade podium parking garage) located in the northeast corner of the project site with frontage on 40th Street, Telegraph Avenue, and Village Drive (a new street proposed within the project area).

[5] The north wall of the single-story commercial building at 3901 to 3921 Telegraph Avenue may have some structural connections attached to the south wall of the 3-story commercial/residential building at 505 40th Street and the commercial building would be demolished as part of the project. Special measures would be included in the project's Demolition Plan, which is required by Standard Condition 33, to ensure that structural integrity of the existing structure at 505 40th Street is not compromised as a result of this project.

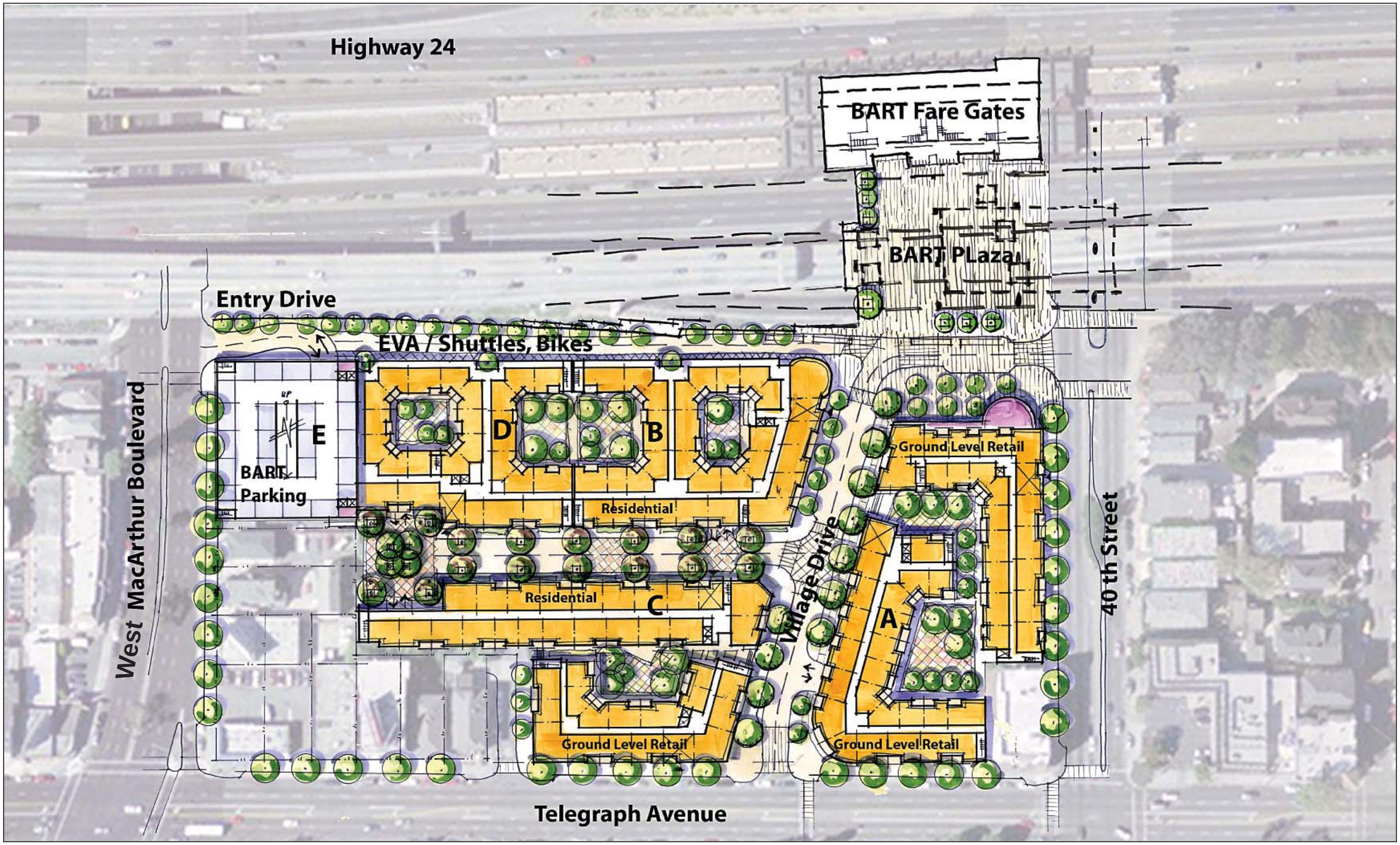

FIGURE III-3

MacArthur Transit Village Project EIR
Conceptual Site Plan

SOURCE: MACARTHUR TRANSIT COMMUNITY PARTNERS, LLC, 2007

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Figure III-4

MacArthur Village Project EIR
Conceptual Garage Level Plan

SOURCE: MACARTHUR TRANSIT COMMUNITY PARTNERS,LLC, 2007.

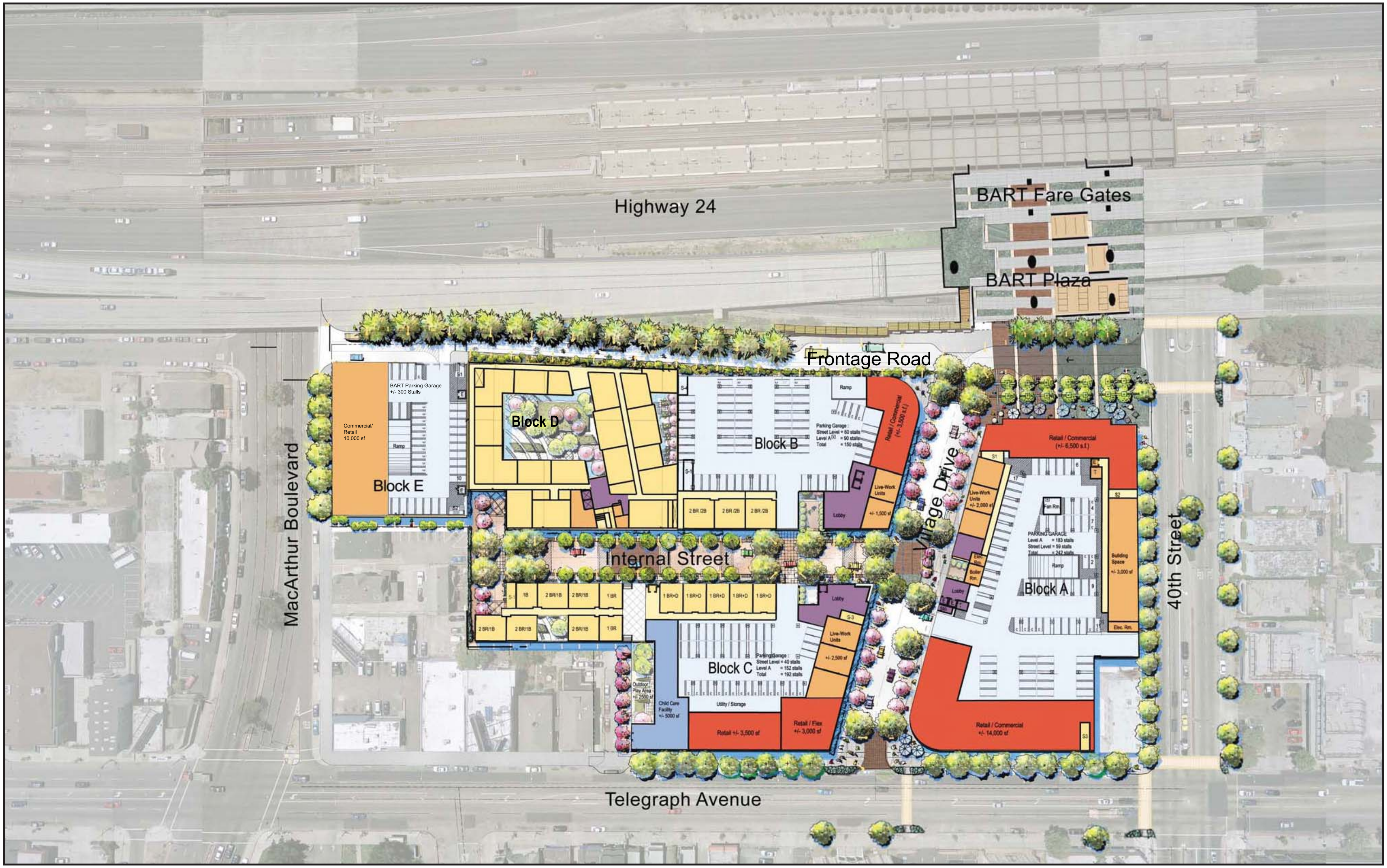

Figure III-5

MacArthur Village Project EIR
Conceptual Street Level Plan

SOURCE: MACARTHUR TRANSIT COMMUNITY PARTNERS,LLC, 2007.
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Figure III-6

MacArthur Village Project EIR
Conceptual Upper Level Plan

SOURCE: MACARTHUR TRANSIT COMMUNITY PARTNERS,LLC, 2007.

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Figure III-7

MacArthur Village Project EIR
Conceptual 40th St. Elevation

SOURCE: MACARTHUR TRANSIT COMMUNITY PARTNERS,LLC, 2007.

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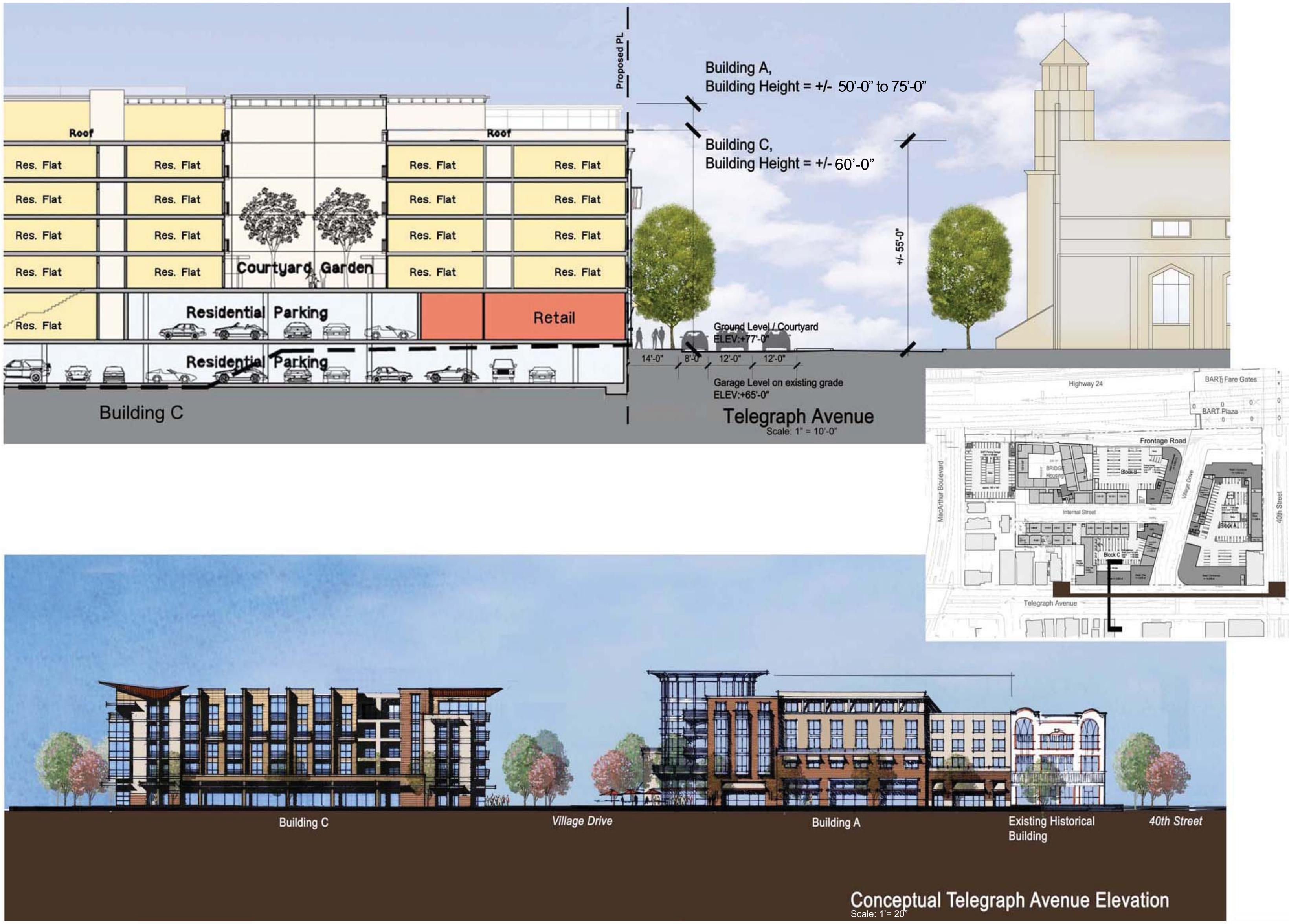

Figure III-8

MacArthur Village Project EIR
Conceptual Telegraph Avenue Elevation

SOURCE: MACARTHUR TRANSIT COMMUNITY PARTNERS,LLC, 2007.
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Figure III-9

MacArthur Village Project EIR
Conceptual Internal Street Elevation

SOURCE: MACARTHUR TRANSIT COMMUNITY PARTNERS,LLC, 2007.

Table III-2 Summary of Proposed Development

Building	Square Footage[a]	Number of Stories	Building Height (Feet)	Residential Units/ Affordable Units	Commercial SF[b]	Community SF	Parking Spaces
A	255,500	4/6	50-85	240/10	26,000	--	265
B	163,100	6	60-85	150/5	5,500	--	150
C	218,100	5/6	50-75	195/8	12,500	--	195
D	124,300	5	60	90/90	0	--	90
E	127,000	7	65	--	--	5,000	300
Total	**888,000**	--		**675/113**	**44,000**	**5,000**	**1,000**

[a] Square footage does not include underground parking.
[b] Square footage includes "flex space."
Source: MacArthur Transit Community Partners, LLC, 2007.

Building A is a mixed-use building with approximately 26,000 square feet of commercial space located on the ground floor, 230 market-rate residential units and 10 affordable units on the upper floors. Figures III-4a and Figure III-4b show conceptual floor plans and elevations of Building A. The commercial uses would front onto Telegraph Avenue, 40th Street and Village Drive and though no specific businesses are known at this time, the commercial uses are planned to include neighborhood-serving commercial and commercial uses consistent with the uses allowed in the S-15 Zone (i.e., cafes and restaurants, commercial uses, personal services, and general food sales). Of the 26,000 square feet of commercial space in Building A, 6,000 square feet, would be "flex spaces" on 40th Street and Village Drive. Flex spaces in Building A may be occupied by live/work units, commercial uses and/or common space for residents (i.e., gym or recreation room) in the buildings in which the flex space is located. Access to the residential units is provided by internal courtyards and vehicular access to the parking garage under Building A is provided by a driveway on Village Drive.

a. Building B. Building B is a six-story building (with a below-grade podium parking garage) located along the western edge of project site, south of Village Drive and adjacent to the shuttle access road with building frontage on Village Drive, Entry Drive and the proposed north/south internal street. Building B is a mixed-use building with approximately 5,500 square feet of commercial space and flex space on the ground floor and 145 market-rate residential units and five affordable residential units located on all floors. Figures III-5a and Figure III-5b show conceptual floor plans and elevations of Building B. The commercial uses would front onto Village Drive and though no specific uses are known at this time, the commercial uses are planned to be neighborhood-serving commercial and commercial uses consistent with the uses allowed in the S-15 Zone (i.e., cafes and restaurants, commercial uses, personal services, and general food sales). Of the 5,500 square feet of commercial space in Building B, 1,500 square feet would be "flex space" on Village Drive. Flex spaces may be occupied by live/work units or commercial uses. Residential units would be located on the upper floors of Building B and on the ground floor adjacent to the internal street. Access to the residential units is provided by internal courtyards and individual unit entrances that front onto the internal street. Front entrances with stoops and small porches are envisioned along the internal street frontage of Building B. Vehicular access to the parking garage under Building B is provided by a driveway on the internal street.

b. Building C. Building C is a five- and six-story building (with a below-grade podium parking garage) located along the eastern edge of the project site at the southwest corner of Telegraph Avenue and Village Drive. Building C is a mixed-use building with approximately 12,500 square feet of commercial space on the ground floor and 187 market-rate residential units and eight affordable units on the upper floors. Figures III-6a and Figure III-6b show conceptual floor plans and elevations of Building C. The commercial units would front onto Telegraph Avenue and Village Drive and though no specific uses are known at this time, the commercial uses are planned to be neighborhood-serving commercial and commercial uses consistent with the uses allowed in the S-15 Zone (i.e., cafes and restaurants, commercial uses, personal services, and general food sales). Of the 12,500 square feet of commercial space in Building C, 2,500 square feet would be "flex space" on Village Drive. Flex spaces may be occupied by live/work units or commercial uses. Additionally, the 5,000 square feet of community-serving space (like a childcare facility) may be located on the ground floor of Building C (if not incorporated into Building E). Residential units would be located on the upper floors of Building C and on the ground floor adjacent to the internal street. Access to the units is provided by internal courtyards and individual unit entrances that front onto the internal street. Vehicular access to the parking garage under Building C is provided by two driveways on the internal street.

c. Building D. Building D is a five-story building (with a below-grade podium parking garage) located along the western edge of the project site (directly south of Building B) with building frontage on the internal street and Entry Drive. Figures III-7a and Figure III-7b show conceptual floor plans and elevations of Building D. Building D is an entirely residential building with approximately 90 for-rent, below-market-rate (affordable) apartment units. Building D would include a community room with a kitchen and shared laundry facilities for use by apartment tenants. Access to the apartment units would be provided via internal courtyards and vehicular access to the parking garage under Building D is provided by a driveway on the internal street.

d. Building E. Building E is a seven-story parking garage located at the southwest corner of the project site with frontage on West MacArthur Boulevard and Entry Drive. Figures III-8a and Figure III-8b show conceptual floor plans and elevations of Building E. The garage would accommodate 300 parking spaces for BART patrons and the ground floor would include

5,000 square feet of commercial space. The commercial space would front onto West MacArthur Boulevard and it may be used to accommodate the proposed community serving use (if not incorporated into Building C). Pedestrian access to Building E would be located on West MacArthur Boulevard, Entry Drive and the internal street. Vehicular access to the Building E would be provided by a two-way driveway on Frontage Road, which vehicles would access via West MacArthur Boulevard.

3. Internal Circulation and Parking

Several circulation improvements are proposed for the project site. Three internal roadways would be constructed as part of the proposed project: Frontage Road, Village Drive, and an internal north/south street off of Village Drive. New sidewalks, bicycle paths, and streetscape improvements would be constructed. Proposed circulation improvements are discussed below and Figure III-10 shows the proposed circulation plan for the project site.

a. Frontage Road. The existing Frontage Road would be reconfigured, but remain in the same location as the existing Frontage Road, which is parallel to State Route 24, extending from 40th Street to West MacArthur Boulevard. Frontage Road is a two-way road for the segments between 40th Street and Village Drive and between West MacArthur Boulevard and the Parking Garage driveway. South of the Frontage Road/Village Drive intersection, and before the Parking Garage, vehicular access would be limited to emergency vehicle access, southbound shuttle operators, and building services. Therefore, the majority of traffic at this section of Frontage Road would be shuttles traveling southbound between 40th Street and West MacArthur Boulevard. Additionally, the intersection of Frontage Road and West MacArthur Boulevard provides access to and from the Parking Garage (Building E) and vehicles can also access Frontage Road at the Village Drive intersection to exit onto 40th Street. The applicant is proposing a traffic signal at the intersection of West MacArthur Boulevard and Frontage Road. Sidewalks would be provided along the west side of Frontage Road and two-way bicycle access would be included on Frontage Road. No parking would be permitted along Frontage Road, with the exception of loading and unloading areas for shuttle providers. Shuttle providers would stage shuttles on West MacArthur Boulevard under the underpass.

Existing Frontage Road is currently used by shuttles and passenger vehicles.

b. Village Drive. Village Drive would be a two-way, two-lane road with a 60-foot right-of-way between Telegraph Avenue and the Frontage Road. Village Drive would be open to vehicular traffic and pedestrians, as well as patrons who use kiss-and-ride. On-street parking

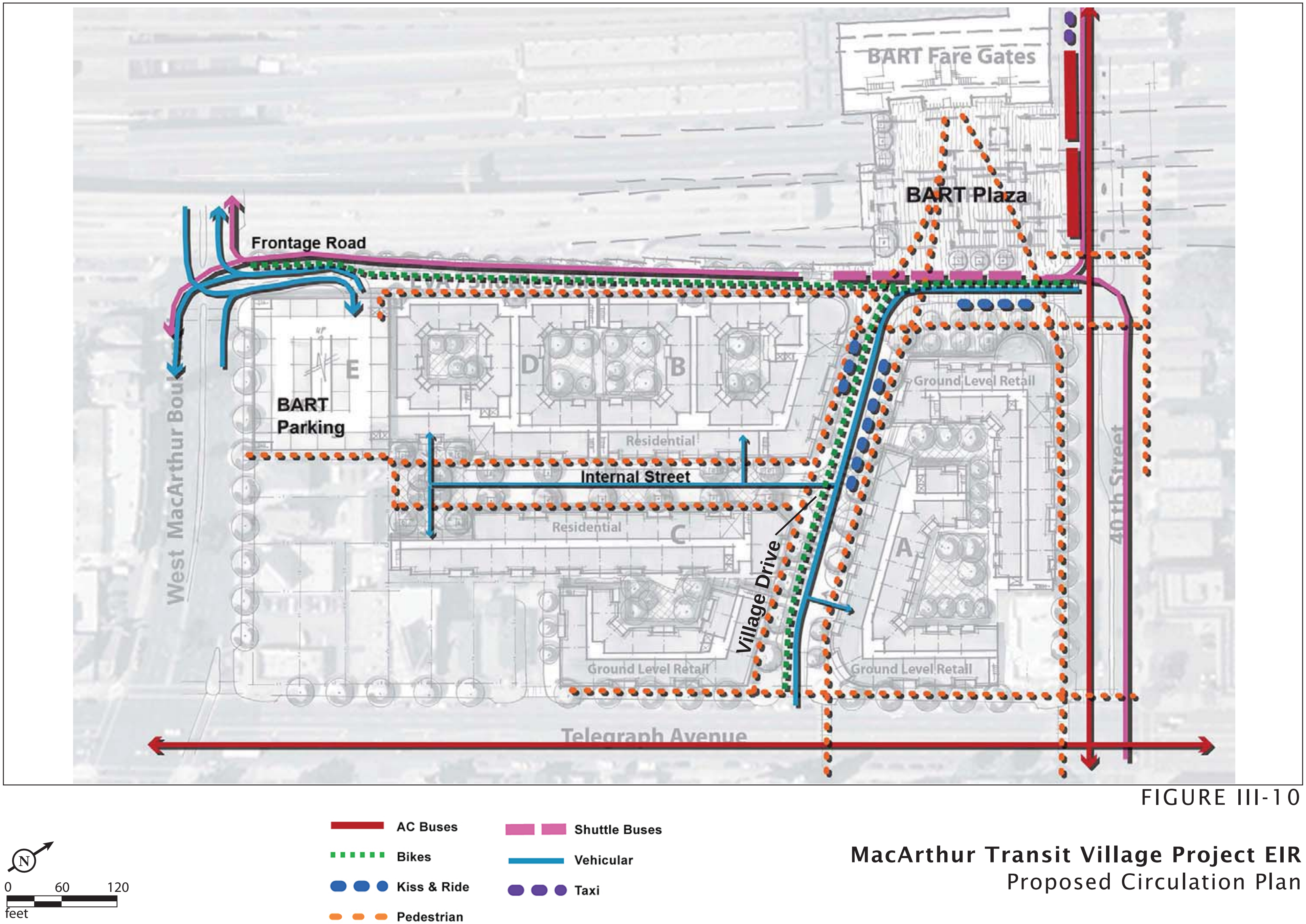

FIGURE III-10

MacArthur Transit Village Project EIR
Proposed Circulation Plan

SOURCE: MV&E PARTNERS, JUNE 2007

I:\MGB0701 macarthur bart\figures\Fig_III4.ai (7/24/07) and kiss-and-ride loading and unloading areas would be provided on Village Drive. Village Drive also includes large sidewalks because it is envisioned as the main pedestrian connection through the project site. Ground floor commercial and live-work units in Buildings A, B and C would be oriented to face Village Drive with pedestrian scale commercial uses with outdoor seating areas and commercial displays at the transit village plaza (across from the BART plaza) and on Telegraph Avenue. The applicant is proposing the installation of a traffic signal at the Village Drive/Telegraph Avenue intersection.

c. Internal Street. An internal two-way street with a 45-foot right-of-way is proposed south of Village Drive. The internal street would provide vehicular access to Buildings B, C, and D. The internal street is not a through street; a turn-around area is provided at the terminus of the street. On-street parking and sidewalks are proposed for both sides of the internal street at the southern edge of the project site. The internal street is envisioned as a residential street (no commercial space would front onto the internal street). Residential unit entrances (including stoops and small porches) would face onto the internal street. The primary pedestrian access to the internal street would be from Village Drive, but a pedestrian pathway located along the east elevation of the parking garage (Building E) would also allow pedestrians to access the internal street from West MacArthur Boulevard.

d. Parking. The project includes a total of approximately 1,000 spaces: 700 parking spaces amongst the below-grade and at-grade parking garages within Buildings A, B, C and D, 300 parking spaces within the parking garage for BART patrons (Building E) and 30 to 45 on-street parking spaces. The parking areas for Buildings A, B, C and D would be provided below-grade and at-grade at a ratio of one parking space per unit within each building. Approximately 25 parking spaces within Building A would be accessible for use by patrons of commercial units. Table III-2 describes the number of parking spaces within each building. In addition to parking within proposed structures, approximately 30 to 45 on-street parking spaces would be located along Village Drive and the internal street. Street parking would provide parking spaces for patrons of the commercial units. No parking would be permitted on Frontage Road.

Existing BART patron parking spaces to be replaced with parking structure.

e. Residential Permit Parking. The proposed project would include a Residential Parking Permit program (RPP) that would extend approximately ¼-mile radius around the project site. This component of the project is proposed to offset potential parking impacts in the surrounding neighborhood that would be associated with a reduction in the amount of BART Parking by approximately 300 spaces on the project site. The RPP restricts on-street parking by non-residents to less than two hours during the weekdays. In Oakland, residents must petition to create an RPP. At least 51 percent of residents in a proposed RPP area must sign the petition. If approved, the RPP program would be considered for implementation prior to demolition of the existing BART surface parking lot.

4. Landscaping Plazas and Streetscape

Landscaping would be incorporated along all roadways proposed within the site, and would also include installation of street trees along the project boundaries on 40th Street, Telegraph Avenue, and West MacArthur Boulevard. Figure III-11 shows a preliminary landscape plan. Streetscape improvements including informational/ directional signs, benches, and street lighting would also be provided along project streets and open space. Ornamental street paving is also proposed at project driveways to identify entrance into the project site. Landscaped open space would be provided by internal courtyards within Buildings A, B, C and D for the enjoyment of the residents.

The conceptual site plan for the proposed project (see Figures III-3) includes approximately 60,000 square feet of group open space (about 90 square feet per unit). The group open space areas include the common area courtyards, common landscape areas, and the transit village plaza (west of Building A). The conceptual plans currently do not show any private open space areas. However, the project will include private balconies on approximately 50 percent of the units. Additional private balconies may be incorporated as the architectural design of the buildings evolves.

5. Plaza Improvements

The existing BART Plaza, located between Frontage Road and the fare gates, would be renovated. Though precise plans for the BART Plaza renovation are not known at this time, it is anticipated that the BART Plaza improvements will include bike lockers, pedestrian pathways, lighting, and seating improvements.

The proposed project also includes a public plaza across from the BART Plaza in between Frontage Road and Building A. This plaza is intended to provide for an outdoor seating area (perhaps in connection with proposed commercial uses in Building A) and landscaping.

6. Demolition and Construction Schedule

The project would be constructed over approximately seven years (see Table III-3). The phasing program discussed below is conceptual in that phasing is expected to occur sequentially; however, some phases could occur concurrently, or phasing may occur out of sequence depending on market conditions.

Table III-3 Phasing Schedule

Phase	Schedule
BART Plaza Improvements	2009
Site Remediation and Demolition	2009
BART Parking Structure (Building E)	2009
Affordable Development (Building D)	2009
Building B	2010
Building A	2012
Building C	2014

Source: MTCP, 2007.

Figure III-11

MacArthur Village Project EIR
Conceptual Landscape Master Plan

SOURCE: MACARTHUR TRANSIT COMMUNITY PARTNERS,LLC, 2007.
MGB0701 MacArthur BART Transit Village\PRODUCTS\DEIR\Admin\MacArthur BART Graphics Files\figures

During all phases of construction (and demolition), the project sponsor will work closely with BART officials to reduce and eliminate unnecessary delays and impacts to the BART parking lot and BART patrons.

Phase I would include construction of the 300-space BART patron parking garage, due to the future removal of the BART parking lot. Phase I would also include site remediation and construction of the first half of the development infrastructure. As a transit village, the new development has a significant amount of new infrastructure to better support access and circulation for all modes of transportation and the new mixed-used structures. The first phase of infrastructure is anticipated to include the internal drive, the Frontage Road improvements and the portion of Village Drive that extend from the Frontage Road to the internal drive. The dense site combined with the logistical challenges of a running transit station will require the project sponsor to build the new infrastructure first before starting construction on future development. Once the BART parking garage is complete, the second half of the infrastructure may be completed. The second phase of infrastructure would include the remaining portion of Village Drive (from the internal street to Telegraph Avenue), installation of a new traffic signal at West MacArthur Boulevard and the entry to the BART garage.

Phase II would include construction of Building D, the 90-unit affordable development parcel. It is anticipated the new Internal Drive will be used for staging and loading. The new Frontage Road will also provide access for shuttles and temporary use by cars and bicycles.

Phase III would include construction of Building B, the 150-unit building with up to 5,500 square feet of commercial space, located at the corner of the Frontage Road and Village Drive. Construction of Building B would complete the new construction proposed along the Frontage Road and begin to articulate the new activity area just outside the BART fare gates. By Phase III, all new infrastructure improvements are expected to be complete (with adjusted circulation routes based on construction activity). If required, the traffic light at Telegraph Avenue and Village Drive will be added as part of this phase.

Phase IV would include construction of Building A, the 240-unit building with up to 26,000 square feet of new commercial space, located at the intersection of the Frontage Road and 40th Street. Phase IV would complete the transit village plaza across from the BART fare gates.

Phase V would include construction of Building C, the 195-unit building with up to 12,500 square feet of commercial space along Telegraph Avenue. This phase would include development of the potential child care facility (if not located in Building E).

7. Remediation Activities

The proposed project includes remediation of hazardous materials identified on the project site. The magnitude and extent of concentrations of hazardous materials[6] found on-site are detailed in Section IV.H, Public Health and Hazards. Remediation activities include soil excavation, off-site transportation and disposal of excavated soils, on-site stockpile management and monitoring for dust and vapors, groundwater extraction and treatment from open excavations, and construction of a long-term groundwater treatment/injection system.

8. LEED ND/Sustainability Elements

The MacArthur Transit Village has been chosen to participate in the LEED ND Pilot Program. The LEED ND Pilot Program was created by the U.S. Green Building Council (USGBC), the Congress for New Urbanism, and the National Resources Defense Council to test national standards for sustainable neighborhood developments. Unlike other U.S. Green Building Council (USGBC) LEED programs, LEED ND places significant emphasis on the design elements that bring buildings together into a neighborhood focusing on pedestrian experience and encouraging social interaction. LEED ND credits are broken up into four categories: (1) Smart Location and Linkage (SLL), (2) Neighborhood Pattern and Design (NPD), (3) Green Construction and Technology, and (4) Innovation and Design Process. LEED certification provides independent, third-party verification that a development's location and design meet accepted high standards for environmentally responsible, sustainable, development.

9. Rezone and Text Amendment

The project applicant also proposes to change the zoning on the project site from Commercial Shopping, Mediated Design Review (C-28/S-18) and High Density Residential, Mediated Design Review (R-70/S-18) to Transit Oriented Development (S-15). The proposed rezone would allow the project to be developed under the S-15 Zone, which, unlike the existing zoning, includes specific land use and development provisions for TOD projects. The City may also consider an amendment to the S-15 text to allow an increase in the maximum permitted building height (from 55 to 85 feet) to reduce the open space requirements for this site as City staff believes that current requirements may not be

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[6] The California Health and Safety Code defines a hazardous material as "...any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety, or to the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, radioactive materials, and any material which a handler or administering agency has a reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment." (Health and Safety Code Section 25501)

appropriate for this site and could compromise achieving other City policies related to transit oriented development.

E. DISCRETIONARY ACTIONS

It is anticipated that this EIR will provide environmental review for all discretionary approvals and actions necessary for the project. A number of permits and approvals would be required before the development of the project could proceed. As Lead Agency for the proposed project, the City of Oakland would be responsible for the majority of approvals required for development. BART owns a significant portion of the project site and is a Responsible Agency. BART will utilize this EIR for its approvals. Other agencies also have some authority related to the project and its approvals. A list of required permits and approvals that may be required by the City and other agencies includes, without limitation, those provided in Table III-4 at the end of this section.

Both the City of Oakland and BART would require a series of discretionary actions associated with approval of the proposed project, which are described below, and summarized in Table III-4.

1. City of Oakland

Key discretionary actions required by the City of Oakland are outlined below.

a. Rezone. The project applicant proposes to change the zoning on the project site from Commercial Shopping, Mediated Design Review (C-28/S-18) and High Density Residential, Mediated Design Review (R-70/S-18) to Transit Oriented Development (S-15). A rezone of the project site would require the review and recommendation by the Planning Commission with final approval by the City Council.

b. S-15 Zone Text Amendment. The project may include a City-initiated text amendment to the Transit-Oriented Development (S-15) Zone to amend the maximum permitted height from 55 feet to 85 feet and reduce the open space requirements for this site as City Staff believes that the current open space requirements may not be appropriate for this site due to its location adjacent to BART and State Route 24 and that they could compromise achieving other City policies related to Transit Oriented Development. A text amendment to the Planning Code would require review and recommendation by the Planning Commission with final approval by the City Council.

c. Planned Unit Development/Development Plans. The proposed project would require approval of a Planned Unit Development Permit (PUD), Preliminary Development Plan, and subsequent Final Development Plan, depicting the project site layout and design. The PUD and Development Plans would require review and approval by the Planning Commission.

Table III-4 Required Permits and Approvals

Lead Agency	Permit/Approval
City of Oakland Planning Commission City Council Redevelopment Agency Design Review Committee Parks and Recreation	• Rezone • Text amendment to S-15 Transit-Oriented Development Zone • Planned Unit Development/Preliminary and Final Development Plans • Design Review • Redevelopment Agency actions, including an Owner Participation Agreement/Disposition and Development Agreement • Development Agreement • Minor Conditional Use Permits or Variances, if determined necessary once detailed plans are submitted • Tree Removal Permits • Subdivision Maps to combine parcels, create new parcels, and create condominiums • General City Administrative Permits including demolition, excavation and encroachment permits
Responsible Agencies	
Bay Area Rapid Transit District (BART)	• Approval of property transaction • Approval of BART plaza improvements • Issuance of any encroachment permits for BART property, if necessary • Reciprocal Easement Agreement to address City of Oakland and BART responsibilities for maintenance of sidewalks and streets within the project • Parking agreement between developer and BART to enable a private party to own, operate and maintain the BART parking garage
East Bay Municipal Utility District (EBMUD)	• Approval of water lines, water hookups and review of water needs
California Department of Transportation (Caltrans)	• Approval of plans and encroachment permit for improvements located within the State right-of-way; improvements within public right-of-way
California Regional Water Quality Control Board (RWQCB)	• National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharge
Alameda County Department of Environmental Health	• Permitting of hazardous waste removal activities
Other Agencies	
Regional Water Quality Control Board	• Approval and oversight of remediation plan for hazardous materials abatement
Bay Area Air Quality Management District (BAAQMND)	• Permitting of asbestos abatement activities
Department of Toxics and Substances Control (DTSC)	• Approval and oversight of remediation plan for hazardous materials abatement

Source: LSA Associates, Inc., 2007.

d. Design Review. The proposed project would require Preliminary Design Review by the Design Review Committee. The project would be subject to the design provisions outlined in the Planning Code, which would require approval by the Planning Commission.

e. Owner Participation Agreement/Disposition and Development Agreement/ Potential Redevelopment Plan Amendment. The project applicant would enter into an Owner Participation Agreement/Disposition and Development Agreement with the City of Oakland Redevelopment Agency which will provide for the amount and form of the Agency's financial assistance for the project and the requirements that will be placed on the project in order to be eligible for this financial assistance. The Preliminary Design Review may consider an amendment to the Redevelopment Plan as it relates to the MacArthur site. This agreement will require review and approval by the Redevelopment Agency (City Council).

f. Development Agreement. The project sponsor has requested that the City enter into a Development Agreement with the project sponsor to provide for an extended, vested entitlement period; to specify requirements for project phasing; to confirm the project's community benefit contribution; to stipulate what City regulations will apply throughout the term of the Development Agreement; and to establish other commitments by either party. The City Planning Commission would review the Development Agreement and forward its recommendation to the City Council for a final decision.

g. Subdivision Maps. The project will require two subdivision maps to: (1) consolidate and/or reorganize existing parcel lines for parcels within the project site; (2) allow the sale of the proposed residential units; and (3) create separate parcels to allow for separate ownership of each building parcel.

h. Tree Removal Permits. Pursuant to the City's Protected Trees Ordinance, the project applicant would be required to obtain an approved Tree Removal Permit prior to removal of (or construction activity near) a "Protected Tree," as defined in Oakland Municipal Code. Tree permits would require approval by the Oakland Office of Parks and Recreation.

2. BART

Discretionary actions that would be undertaken by BART are described below.

a. Property Transaction. BART owns the surface parking lot that is proposed to be developed as part of the project. The ground lease and/or sale of the property would require review and approval by the BART Board.

b. BART Plaza Improvements. Any improvements proposed to the BART Plaza would require approval by the BART Board. (BART may consider the plaza improvements in connection with the overall program transaction. If that is the case, a separate action for the plaza improvements would not be required.)

IV. SETTING, IMPACTS, STANDARD CONDITIONS OF APPROVAL, AND MITIGATION MEASURES

This chapter contains an analysis of the environmental topics relevant to the MacArthur Transit Village Project, and, as such, constitutes the major portion of this Draft EIR. Sections A through L of this chapter describe the existing setting for each topic relevant to the proposed project, the potential impacts that could result from implementation of the project, relevant City policies and Standard Conditions of Approval that would minimize potential adverse effects that could result from implementation of the project, and mitigation measures necessary to reduce impacts of the project.

The following provides an overview of the scope of the analysis included in this chapter, organization of the sections, the methods for determining what impacts are significant, and the applicability of the City's Uniformly Applied Development Standards (also referred to as Standard Conditions of Approval).

ENVIRONMENTAL TOPICS

The following environmental topics are analyzed in this chapter:

A. Land Use
B. Public Policy
C. Transportation, Circulation and Parking
D. Air Quality
E. Noise and Vibration
F. Hydrology and Water Quality
G. Geology, Soils and Seismicity
H. Public Health and Hazards
I. Public Services
J. Utilities and Infrastructure
K. Cultural and Paleontological Resources
L. Aesthetic Resources

Topics determined to not be directly relevant to the proposed project are briefly discussed in Chapter VI, under Effects Found Not to Be Significant, and include Agricultural Resources, Biological Resources, Mineral Resources and Population and Housing.

FORMAT OF TOPIC SECTIONS

Each environmental topic section generally includes two main subsections: (1) Setting; and (2) Impacts (construction, project and cumulative), Standard Conditions of Approval, and Mitigation Measures. Identified significant impacts are numbered and shown in bold type, and the corresponding mitigation measures are numbered and indented. Significant impacts and mitigation measures are numbered consecutively within each topic and begin with a shorthand abbreviation for the impact section (e.g., LAND for Land Use). The following abbreviations are used for individual topics:

LAND:	Land Use
POL:	Public Policy
TRANS:	Transportation, Circulation and Parking
AIR:	Air Quality
NOISE:	Noise and Vibration
HYD:	Hydrology and Water Quality
GEO:	Geology, Soils and Seismicity
HAZ:	Public Health and Hazards
PUB:	Public Services
UTL:	Utilities and Infrastructure
CULT:	Cultural and Paleontological Resources
AES:	Aesthetic Resources

The following notations are provided after each identified significant impact and mitigation measure:

SU	=	Significant and Unavoidable
S	=	Significant
LTS	=	Less than Significant

These notations indicate the significance of the impact with and without mitigation.

DETERMINATION OF SIGNFICANCE

Under CEQA, a significant effect is defined as a substantial, or potentially substantial, adverse change in the environment.[1] Each impact evaluation in this chapter is prefaced by criteria of significance, which are the thresholds for determining whether an impact is significant.

This criteria of significance utilized in this EIR are from the City of Oakland's Thresholds/ Criteria of Significance Guidelines. To help clarify and standardize analysis and decision-making in the environmental review process in the City of Oakland, the City has established

[1] Public Resources Code Section 21068.

the Thresholds/Criteria of Significance Guidelines (which have been in general use since at least 2002). The Thresholds are offered as guidance in preparing environmental review documents. The City requires use of its thresholds unless the location of the project or other unique factors warrants the use of different thresholds. The thresholds are intended to implement and supplement provisions in the CEQA Guidelines for determining the significance of environmental effects, including Sections 15064, 15064.5, 15065, 15382 and Appendix G, and form the basis of the City's Initial Study and Environmental Review Checklist.

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

CUMULATIVE ANALYSIS CONTEXT

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

The methodology used for assessing cumulative impacts typically varies depending on the specific topic being analyzed. For example, the geographic and temporal (time-related) parameters related to a cumulative analysis of air quality impacts are not necessarily the same as those for a cumulative analysis of noise or aesthetic impacts. This is because the geographic area that relates to air quality is much larger and regional in character than the geographic area that could be impacted by potential noise or aesthetic impacts from a proposed project and other cumulative projects/growth. The noise and aesthetic cumulative impacts 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.

Since 2000, the City of Oakland has developed and maintained a cumulative growth scenario and land use database primarily for use in cumulative transportation analyses for

Oakland EIRs. Oakland's growth scenario is developed using a forecast-based approach (i.e., an approach based on regional forecasts of economic activity and demographic trends). The ABAG projections provide the citywide and regional economic and demographic inputs. The scenario also incorporates extensive local information and input regarding the locations for growth and change within the city including past, present, existing, pending and reasonably foreseeable future development in the area surrounding the project site. The latter provide specificity about growth and development in Oakland for use in allocating growth to subareas and traffic analysis zones (TAZs) within the city. Transportation analyses using the ACCMA's travel demand model require inputs at the TAZ level. The scenario also includes existing development conditions within the baseline and growth projections for adjacent jurisdictions.

This cumulative growth scenario was updated for this project (see Appendix E) by Hausrath Economic Group (HEG) and is used as a basis for the cumulative analysis for each topic analyzed in this EIR with a focus on the geographic areas in closer proximity to the project site including North Oakland, parts of West Oakland and Downtown/Oakland Central, south of I-580 to Grand Avenue between San Pablo Avenue on the west and Harrison Street on the east (see Figure 1 in Appendix E, also shown in Figure I-1 on page 2).

However, as discussed above, the geographic area for evaluating cumulative impacts can vary depending on the specific topic being analyzed. Recognizing this, the cumulative discussions included in Sections IV.A through IV-L explain the geographic scope of the area affected by each cumulative effect (e.g., watershed or air basin) and drawn on the information in the cumulative growth scenario consistent with the defined geographic area. The geographic area considered for each cumulative impact depends upon the impact that is being analyzed. For example, in assessing aesthetic impacts, only development within the vicinity of the project would contribute to a cumulative visual effect; in assessing air quality impacts, on the other hand, all development within the air basin contributes to regional emissions of criteria pollutants, and basinwide projections of emissions is the best tool for determining the cumulative effect.

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 mitigate environmental effects. For the MacArthur Transit Village project, all of the relevant standard conditions have been incorporated as part of the project.

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)/approvals(s) required for the project. Depending on the specific characteristics of the project type and/or project site, the City will determine which Standard Conditions of Approval apply to a specific project; for example, Standard Conditions of Approval related to creek protection permits will only be applied to projects on creekside properties.

Because these Standard Conditions of Approval are mandatory City requirements, the impact analysis assumes that these will be imposed and implemented by the project. If a Standard Condition of Approval would reduce a potentially significant impact to less than significant, the impact will be determined to be less than significant and no mitigation is imposed.

The Standard Conditions of Approval incorporate development policies and standards from various adopted plans, policies, and ordinances (such as the Oakland Planning and Municipal Codes, Oakland Creek Protection, Stormwater Water Management and Discharge Control Ordinance, Oakland Tree Protection Ordinance, Oakland Grading Regulations, National Pollutant Discharge Elimination System (NPDES) permit requirements, Housing Element-related mitigation measures, California Building Code, and Uniform Fire Code, among others), which have been found to substantially mitigate environmental effects. Where there are peculiar circumstances associated with a project or project site that will result in significant environmental impacts despite implementation of the Standard Conditions of Approval, the City will determine whether there are feasible mitigation measures to reduce the impact to less-than-significant levels.

A. LAND USE

This section evaluates the proposed project's potential land use impacts. This section describes the existing land use setting, and evaluates the compatibility of the proposed land uses with existing and planned land uses in the vicinity of the project site. A discussion of the project's consistency with relevant land use policies is provided in Section IV.B, Public Policy.

1. Setting

The following section describes existing land uses within the project site and its vicinity. A description of planned development in the vicinity is also provided.

a. Overview. The project site, which is approximately 8.2 acres, is located in north Oakland. The project site is within the area bounded by 40th Street, Telegraph Avenue, West MacArthur Boulevard, and State Route 24 (SR-24). Figure III-1 shows the location of the project site.

View of project site, looking west toward State Route 24.

Commercial structure on Telegraph Avenue.

Major roads are immediately adjacent to the project site. The eastern edge of the site is adjacent to Telegraph Avenue, a major commercial street that runs north/south through the cities of Oakland and Berkeley. West MacArthur Boulevard, immediately south of the project site, and 40th Street, immediately north of the project site, both run in an east/west direction through Oakland and Emeryville. SR-24 and the BART tracks are elevated approximately 19 to 50 feet above the site and form the site's western edge.

The General Plan land use classification for the project site is Neighborhood Center Mixed Use. The zoning designations for the project site include Commercial Shopping, Mediated Design Review (C-28/S-18) and High Density Residential, Mediated Design Review (R-70/S-18). A discussion of these classifications is included in Section IV.B, Public Policy.

b. Existing Land Uses within the Project Site. The project site includes 10 parcels, an internal roadway, two roadway segments (between Telegraph Avenue and Frontage Road) that are currently used as part of the BART parking lot, and the BART Plaza. Table III-1 provides the

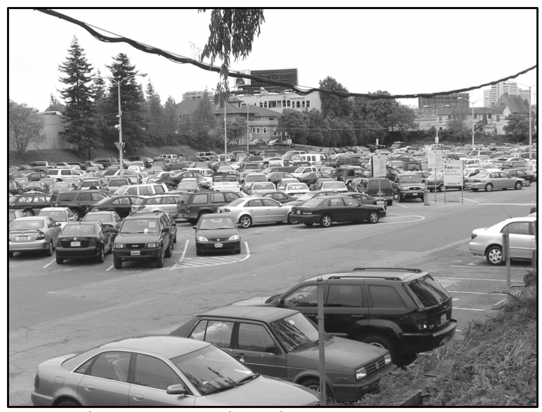
Assessor Parcel Number (APN), addresses, land use, and size of the parcels within the project area and Figure IV.A-1 shows land uses within and adjacent to the project site.

There are a variety of commercial uses within the project site. On the eastern boundary of the project site, there are five parcels that front on Telegraph Avenue. The parcels located northwest of the Telegraph Avenue/39th Street intersection include a car wash, restaurant/food shop, market, and hair salon. The buildings on these parcels are a mix of one- and two-story structures. The parcel south of the Telegraph Avenue/39th Street intersection contains a one-story medical office.

Existing motels on W. MacArthur Boulevard.

Two project parcels front on West MacArthur Boulevard. These two parcels contain motels located within two-story structures.

The BART parking lot comprises the largest portion of the project site. Three parcels, one of which fronts on 40th Street, are owned by BART. Unimproved portions of the Apgar Street and 39th Street rights-of-way are located between these parcels and are also used for BART parking.



MacArthur BART parking lot.

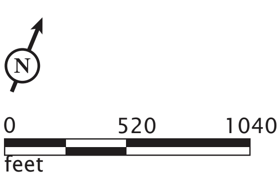
Frontage Road runs north/south between 40th Street and West MacArthur Boulevard and is located west of the BART parking lot. This roadway is used by BART patrons, shuttle operators, and bicyclists.

The BART Plaza is located on the westernmost part of the project site under SR-24. This plaza includes both hardscape and landscaping and provides a waiting area for connecting transportation modes, bicycle storage, public art, and vendors.

Buildings on southwest corner of Telegraph Avenue and 40th Street.

c. Existing Land Uses in the Vicinity of the Project Site. The project site is located within an urban area surrounded by a mix of uses, as shown in Figure IV.A-1. Telegraph Avenue borders the project site on the east and the project site

FIGURE IV.A-1



Legend

Project Site

MacArthur Transit Village Project EIR
Existing Land Uses in the Project Area

SOURCE: GOOGLE EARTH, 2007.

I:\MGB0701 macarthur bart\figures\Fig_IV.A1.ai (8/2/07) includes more than half the parcels on the west side of Telegraph Avenue between West MacArthur Boulevard and 40th Street. Parcels on Telegraph Avenue that are not included in the project site and are immediately adjacent to the project include commercial/residential buildings on the southwest corner of Telegraph Avenue and 40th Street (505 40th Street), and four parcels south at Apgar Street (3801, 3833, 3841 and 3847) Telegraph Avenue are developed with commercial uses. Immediately across Telegraph Avenue from the site are commercial, institutional (churches), and residential uses. The neighborhood further east of Telegraph Avenue is primarily residential and includes a mix of single-family, duplex, and multi-family dwelling units.

To the north, 40th Street borders the project site with residential uses located immediately across the street, except for the northwest corner of the Telegraph Avenue/40th Street intersection, which is a mini-mall. Telegraph Avenue runs to the north of the project site, beyond 40th Street, and contains a variety of commercial uses. Residential uses are located further east and west of Telegraph Avenue (beyond the commercial uses). The Temescal neighborhood is also located north of the project site.

Residential neighborhood adjacent to the BART parking lot project site on 40th Street.

SR-24 and the BART tracks are located immediately west of the project site. Access to the neighborhood west of the project site is provided via SR-24/BART track underpasses at 42nd Street, 40th Street, and West MacArthur Boulevard. Martin Luther King Junior Way, which runs in a north/south direction and is parallel to SR-24, contains primarily commercial uses. The areas further west of Martin Luther King Jr. Way are primarily residential.

Existing residential buildings on West MacArthur Boulevard to remain.

West MacArthur Boulevard borders the project site to the south and about half of the parcels on the north side of West MacArthur Boulevard between SR-24 and Telegraph Avenue are part of the project site. The parcels on the north side of West MacArthur Boulevard that are not part of the project are developed with commercial and multi-family residential uses (518, 514 and 510 West MacArthur Boulevard). Commercial and residential uses are located on the south side of West MacArthur Boulevard across from the project site. The SR-24/Interstate 980 (I-980) interchange is located south of the project site.

d. Planning Projects within the Area. There are several development projects (planned and under construction) within the vicinity of the project site and in the neighborhood of North Oakland which will result in some land use changes on individual parcels. The majority of new developments are infill residential and mixed-use projects along the Telegraph Avenue corridor and adjacent neighborhoods between Downtown Oakland and the City of Berkeley. These projects range in size from 50 units to 400 units and some include ground-floor commercial area.[1]

In addition to the mixed-use and residential projects in the area, there are other notable projects occurring in the project vicinity including, but not limited to, the following:

- *Kaiser Hospital Master Plan.* The Kaiser project is located in the area surrounding the Broadway and MacArthur Boulevard intersection, approximately ½-mile east of the project site. The project will include 1.78 million square feet of hospital/medical offices developed on 21 acres. This project is currently under construction.[2]
- *Bus Rapid Transit (BRT).* The Alameda County Transit Board of Directors approved a Bus Rapid Transit (BRT) plan for the Berkeley/Oakland/San Leandro transportation corridor in August 2001. An EIR for the BRT Plan was released in April 2007. The recommended BRT alignment would extend from the downtown Berkeley BART station to the Bay Fair BART station in San Leandro and would run adjacent to the project site along Telegraph Avenue. The BRT system would feature: (1) removal of two travel lanes to allow special transit lanes dedicated to BRT along most of the corridor; (2) traffic signal priority and coordination; (3) BRT service operating every 3.6 to 5.0 minutes during peak periods; (4) approximately ¼- to ½-mile between stations; (5) pre-paid ticketing; and (6) low-floor, multi-door, low-emission buses.[3]
- *40th Street, MacArthur Transit Hub Improvements.* The 40th Street improvement project includes a new traffic signal at 40th Street and Frontage Road, crosswalk and sidewalk improvements, installation of lighting under the overpass area, a bus stop bulb-out and bike lanes on 40th Street between Martin Luther King Jr. Way and Telegraph Avenue. This project will occur in two phases with the first phase beginning in January 2008 and

[1] These projects are accounted for in the land use projections used in the cumulative analysis included in this EIR.

[2] This project is included in the land use projections used in the cumulative analysis included in this EIR.

[3] A focused transportation analysis of the project that assumes implementation of the BRT project is provided in Appendix F.

ending in April 2008; and the second phase will begin in February 2009 and end in June 2009.[1]

- *BART Seismic Retrofit Project.* BART has initiated an Earthquake Safety Program (ESP) to upgrade vulnerable portions of the original BART system to ensure safety for the public and BART employees. Portions of the original system with the highest traffic will be upgraded not only for life safety but also to ensure that they can return to operation shortly after a major earthquake. Funding for the $1.3 billion (in 2004 dollars) program comes from $980 million in General Obligation Bonds authorized by voters in the BART District on November 2, 2004, along with funds from Caltrans, Regional Measure 2 and BART passenger revenues. BART currently plans to award a contract for construction of ESP improvements in North Oakland, including MacArthur Station by September 2008. While the exact timing of construction at MacArthur Station has not been determined, all construction in the segment including MacArthur BART will be completed by July 2009. At MacArthur BART, it is expected that a four- to six-month construction period will be required, and construction activities will be confined to the interior of the station. Patron access to the station entrances and paid areas (including mezzanine and platform) will be maintained at all times.[2]

The development of these projects will not significantly alter the existing land use pattern, but they will result in an incremental increase in the density/intensity of residential and commercial development in the area, as well as, modifications and improvements to pedestrian and vehicle circulation in the area.

2. Impacts and Mitigation Measures

This section analyzes environmental impacts related to land use that could result from implementation of the proposed project. The section begins with criteria of significance, which establish the thresholds for determining whether an impact is significant. The latter part of the section discusses the potential impacts associated with the proposed project.

a. Criteria of Significance. Implementation of the proposed project would have a significant land use impact if it would:

- Physically divide an established community.
- Result in a fundamental conflict between adjacent or nearby land uses.
- Fundamentally conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan,

[1] These improvements are assumed to be in place in the Existing Plus Project and each of the cumulative scenarios analyses for the transportation, noise and air quality analyses.

[2] Mazzini, Micaela, 2008. Earthquake Safety Program. Written Communication with RRM Design Group. January 14.

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.

- Fundamentally conflict with any applicable habitat conservation plan or natural community conservation plan.

b. Less-than-Significant Land Use Impacts. The following describes the less-than-significant land use impacts associated with the proposed project.

(1) Community Integrity. The physical division of an established community typically refers to the construction of a major physical feature (such as an interstate highway or railroad tracks) or removal of a means of access (such as a local road or bridge) that would impair mobility within an existing community, or between a community and outlying areas. For instance, the construction of an interstate highway through an existing community may constrain travel from one side of the community to another; similarly, such construction may also impair travel to areas outside of the community.

The vicinity of the project site experiences high amounts of pedestrian, vehicular, and transit activity due to the location of the MacArthur BART parking lot on the project site and the MacArthur BART station immediately west of the project site.

Development of the MacArthur BART Transit Village would not result in the development of a barrier within the project site that would impede access to and in the proximity of the MacArthur BART station. The proposed project would result in the development of five buildings that would include a mix of uses, including high density residential, commercial, parking, and community uses. Three new roadways are proposed within the project site that would facilitate traffic movement from Telegraph Avenue, 40^{th} Street, and West MacArthur Boulevard into and through the project site. The project is designed to facilitate access to the project site for all travel modes, including pedestrian, bicycle, transit, and vehicular modes.

The intent of the proposed rezone to S-15 is to facilitate development of a transit-oriented development (TOD). Overall, the S-15 zone is intended to encourage a balance of pedestrian-oriented activities, transit opportunities, and concentrated development of mixture of residential, civic, commercial and light industrial activities. The S-15 zone is typically appropriate around transit centers such as BART stations and AC Transit centers. Rather, the land uses and development standards of the S-15 zone would promote the establishment of the transit village at the MacArthur BART station and would thereby foster redevelopment of multiple underutilized parcels surrounding the station.

(2) Conflict with Adjacent Land Uses. Implementation of the project would not result in the development of uses that would be intrinsically incompatible with surrounding land uses (e.g., a power plant, factory, or other noise, air pollution, of hazard-generating land use). The mixed-use development would not permanently (or temporarily) interfere with the daily operations of surrounding land uses, including the MacArthur BART Station to the west, and residential, commercial, and public uses surrounding the project site. On the contrary, it is evident that the proposed transit village, with its mix of residential and commercial uses, and the proposed infrastructure improvements would promote BART's goals for TOD and would be compatible with surrounding land uses.

The proposed project is designed with four- to six-story mixed-buildings with ground floor live/work flex area and commercial areas and a seven-story parking garage for BART patrons. The commercial areas would be occupied with uses prescribed by the S-15 zone intended to promote neighborhood serving commercial and service uses. It is anticipated that the mix of land uses would serve current residents in the neighborhood, future residents of the project, and BART patrons. Residential land uses (including market-rate and affordable units) would be compatible with existing residential uses in the area.

In addition to new and compatible land uses, the project includes multi-modal circulation improvements including rebuilding the frontage road to primarily serve shuttle providers and emergency access; new sidewalks around and within the project site, bike lanes and bike access at and around the project site, and the project also includes a reduction in the existing BART patron parking. The reduction in BART parking (from 600 surface parking spaces to 300 spaces within a parking structure) combined with the multi-modal improvements described above, are project elements consistent with City and BART transit-oriented goals for designing TOD to reduce the vehicle rideshare mode and increase multi-modal ride share. The Residential Parking Permit program (RPP) is intended to reduce potential parking conflicts that may occur in the surrounding neighborhoods as a result of the reduction in BART parking and displaced BART parkers seeking to park in adjacent residential neighborhoods.

(3) Conflict with Land Use Policy. Potential land use policy conflicts are described in detail in Section IV.B, Public Policy. Conflicts between a project and applicable policies do not constitute significant physical environmental impacts in and of themselves. A policy inconsistency is considered to be a significant adverse environmental impact only when it is related to a policy adopted for the purpose of avoiding or mitigating an environmental effect and it is anticipated that the inconsistency would result in a significant adverse physical impact based on the established significance criteria. The proposed project would not conflict with any land use policies adopted for the purpose of avoiding or mitigating an environmental effect. As a result, no significant land use impacts related to the project's consistency with land use policies would occur. Although the project proposes a rezoning for the site, the project is not fundamentally inconsistent with the uses allowed in the existing zoning, which allow high density residential and commercial uses. Moreover, the increase in height from 55 to 85 feet is generally consistent with the dense, urban character of the area. Please see Section IV.B, Public Policy, for a discussion of the project's relationship with land use policy documents.

(4) Conflict with a Habitat Conservation Plan. The project site is not currently subject to any adopted habitat conservation plan or natural community conservation plan.

c. Significant Land Use Impacts. Implementation of the proposed project would not result in any significant land use impacts.

d. Cumulative Land Use Impacts. The geographic area considered for the land use cumulative analysis includes the area in close proximity to the project site including North Oakland, parts of West Oakland and Downtown/Oakland Central, south of I-580 to Grand Avenue between San Pablo Avenue on the west and Harrison Street on the east as generally depicted on Figure I-1 on page 2. This area was defined because it includes the project site, the immediately surrounding neighborhoods, and the larger City context for the project.

As analyzed throughout this section, the proposed project would not result in a significant land use impact by potentially physically dividing an established community; or conflicting with adjacent or nearby land uses; or conflicting with applicable land use plans, policies or regulations adopted for the purpose of avoiding or mitigating an environmental effect. (The project is not located in or near an area guided by a habitat conservation plan or natural community conservation plan.) The proposed project is consistent with the City's General Plan Land Use designation for the site. Thus, the proposed project would not combined with, or add to, any potential adverse land use impacts that may be associated with other cumulative development. A review of cumulative development in the defined geographic area, including past, present, existing, pending and reasonably foreseeable future development does not reveal any significant adverse cumulative impacts in the area. Cumulative development in the area consists of residential, commercial, transit and other typical urban uses.

Cumulative development, in combination with the proposed project, has and would continue to result in the development and redevelopment of infill or vacant sites throughout the area. Infill projects in urban areas allow for the capitalization of existing transit system and infrastructure, and minimize impacts to sensitive resources that would likely be degraded in a development on a greenfield site. Additionally, by locating residential development near transit and employment centers and by incorporating a mix of uses, urban mixed-use projects reduce vehicle miles traveled. The proposed project would contribute to a higher density in the area, which is anticipated by the General Plan and Redevelopment Plan. The project is generally consistent with adopted plans and the overall vision for the area. Based on the information in this land use section and for the reasons summarized above, the project would not contribute to any significant adverse cumulative land use impacts when considered together with past, present and reasonably foreseeable future development.

B. PUBLIC POLICY

This section evaluates the consistency of the proposed project with applicable land use planning and regulatory documents. Documents reviewed include several elements from the City of Oakland's General Plan: the Land Use and Transportation Element; the Housing Element; the Pedestrian Master Plan; the Bicycle Master Plan; the Open Space, Conservation, and Recreation Element; and the Historic Preservation Element. In addition, the City of Oakland Planning Code, the Broadway/MacArthur/San Pablo Redevelopment Plan, the Sustainable Community Development Initiative, and the City of Oakland "Transit First" Policy are also discussed.

Policy conflicts in and of themselves, in the absence of adverse physical impacts, are not considered to have significant effects on the environment and are differentiated from impacts identified in the other topical sections of this chapter. Pursuant to CEQA, the fact that a specific project does not meet all of the General Plan goals, policies and objectives does not inherently result in a significant effect on the environment. Physical impacts associated with policy conflicts are addressed in the appropriate technical sections of Chapter IV (e.g., noise, traffic). Additionally, local, regional and State plans and policies, such as those relating to air quality or water quality, are discussed in the applicable topic sections of this EIR.

1. Applicable Regulatory Documents and Policy Consistency

Applicable plans and major policies and regulations that pertain to the MacArthur Transit Village project are presented below, followed by a discussion of the project's overall consistency (or inconsistency) with each regulatory document.

As noted above, conflicts with a General Plan do not inherently result in a significant effect on the environment within the context of CEQA. As stated in Section 15358(b) of the CEQA Guidelines, "[e]ffects analyzed under CEQA must be related to a physical change." Section 15125(d) of the Guidelines states that EIRs shall discuss any inconsistencies between the proposed project and applicable General Plans in the Setting section of the document (not under Impacts).

Further, Appendix G of the Guidelines (Environmental Checklist Form) makes explicit the focus on *environmental* policies and plans, asking if the project would "conflict with any applicable land use plan, policy, or regulation . . . *adopted for the purpose of avoiding or mitigating an environmental effect*" (emphasis added). Even a response in the affirmative, however, does not necessarily indicate the project would have a significant effect, unless a physical change would occur. To the extent that physical impacts may result from such conflicts, such physical impacts are analyzed elsewhere in this EIR.

a. City of Oakland General Plan. The City of Oakland General Plan (General Plan) is a comprehensive plan for growth and development of the City. The General Plan includes policies related to: land use and transportation; housing; pedestrians; bikes; open space, conservation and recreation; historic resources; estuary policy; safety; scenic highways; and noise. These topics are addressed within individual elements of the General Plan.

Regarding a project's consistency with the General Plan in the context of CEQA, the Oakland General Plan states the following:

> "The General Plan contains many policies which may in some cases address different goals, policies and objectives and thus some policies may compete with each other. The Planning Commission and City Council, in deciding whether to approve a proposed project, must decide whether, on balance, the project is consistent (i.e., in general harmony) with the General Plan. The fact that a specific project does not meet all General Plan goals, policies and objectives does not inherently result in a significant effect on the environment within the context of the California Environmental Quality Act (CEQA). (City Council Resolution No. 79312 C.M.S.; adopted June 2005)"

The MacArthur Transit Village project's consistency with each element of the General Plan is discussed.[1] Table IV.B-1 (at the end of this section) briefly describes the relationship of the proposed project and specific General Plan policies.

(1) Land Use and Transportation Element. The Land Use and Transportation Element[2] (LUTE) was adopted in March 1998 and addresses land use and transportation issues. In order to accomplish a more integrated planning process that incorporates City-wide infrastructure needs with demands for neighborhood decision-making, the LUTE includes general development policies for the City, in addition to district-specific policies. The LUTE is bound by a vision for the City that includes creating: "clean and attractive neighborhoods rich in character and diversity, each with its own distinctive identity, yet well-integrated into a cohesive urban fabric" in addition to "a diverse and vibrant downtown with around-the-clock activity."

The LUTE includes land use designations for all land within the City of Oakland. The land use designation for the project site is Neighborhood Center Mixed-Use, as shown in Figure

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[1] The Estuary Policy Plan and the Scenic Highways Plan are not discussed in this section. The project is not located in the EPP Area (west of I-880 between Adeline and 66th Street) and the project is not located adjacent to a scenic highway (Scenic Highways in Alameda County include portions of I-680, I-580 and I-80). State Route 24 is not a scenic highway within the City of Oakland.

[2] City of Oakland Community and Economic Development Agency, 1998. *Land Use and Transportation Element,* March.

IV.B-1. The Neighborhood Center Mixed-Use designation is intended to identify, create, maintain and enhance mixed-use neighborhood commercial centers. According to the General Plan, the desired character and uses within this classification are commercial or mixed uses that are pedestrian-oriented and serve nearby neighborhoods, or urban residential with ground floor commercial. The maximum floor area ratio (FAR) for this classification is 4.0. The maximum residential density is 125 units per gross acre. Vertical integration of uses, including residential units above street-level commercial space, is encouraged.

The LUTE land use designations surrounding the project site include Neighborhood Center Mixed-Use, Mixed Housing Type Residential, Urban Residential, Urban Open Space, Community Commercial, and Institutional.

In addition to land use designations, the LUTE identifies eight Transit-Oriented Districts within the City and provides a policy framework specific to Transit-Oriented Development (TOD). The MacArthur BART Station is identified as a TOD. Goals in the LUTE TOD policy framework are as follows:

- *Capitalize on our Location:* Take full advantage of Oakland's position as a major West Coast transportation hub.
- *Integrate Land Use and Transportation Planning:* Integrate transportation and land use planning at the neighborhood, city and regional levels by development of transit-oriented development, where appropriate, at transit and commercial nodes.
- *Reduce Congestion:* Reduce congestion and improve traffic flow by developing an integrated road system and traffic demand management system that provides an appropriate mix of mobility and accessibility throughout the city.
- *Promote Alternative Transportation Options:* Reduce dependency on the automobile by providing facilities that support use of other transportation modes.
- *Find Funding:* Program and provide adequate funding for needed transportation facilities and services, and related investments.
- *Safety:* Provide safe streets.
- *Improve the Environment:* Improve air quality and reduce exposure to traffic noise.

The proposed project is consistent with the Neighborhood Center Mixed-Use designation, which encourages high density mixed-use development. The proposed project would provide for a variety of commercial and residential uses on the project site that would be pedestrian-oriented and be neighborhood-serving. The project would not exceed established density or FAR parameters established for the Neighborhood Center Mixed-Use designation. Based on conceptual plans (see Chapter 3, Project Description), the project's FAR is approximately 2.9 and the project's residential density is approximately 91 units per

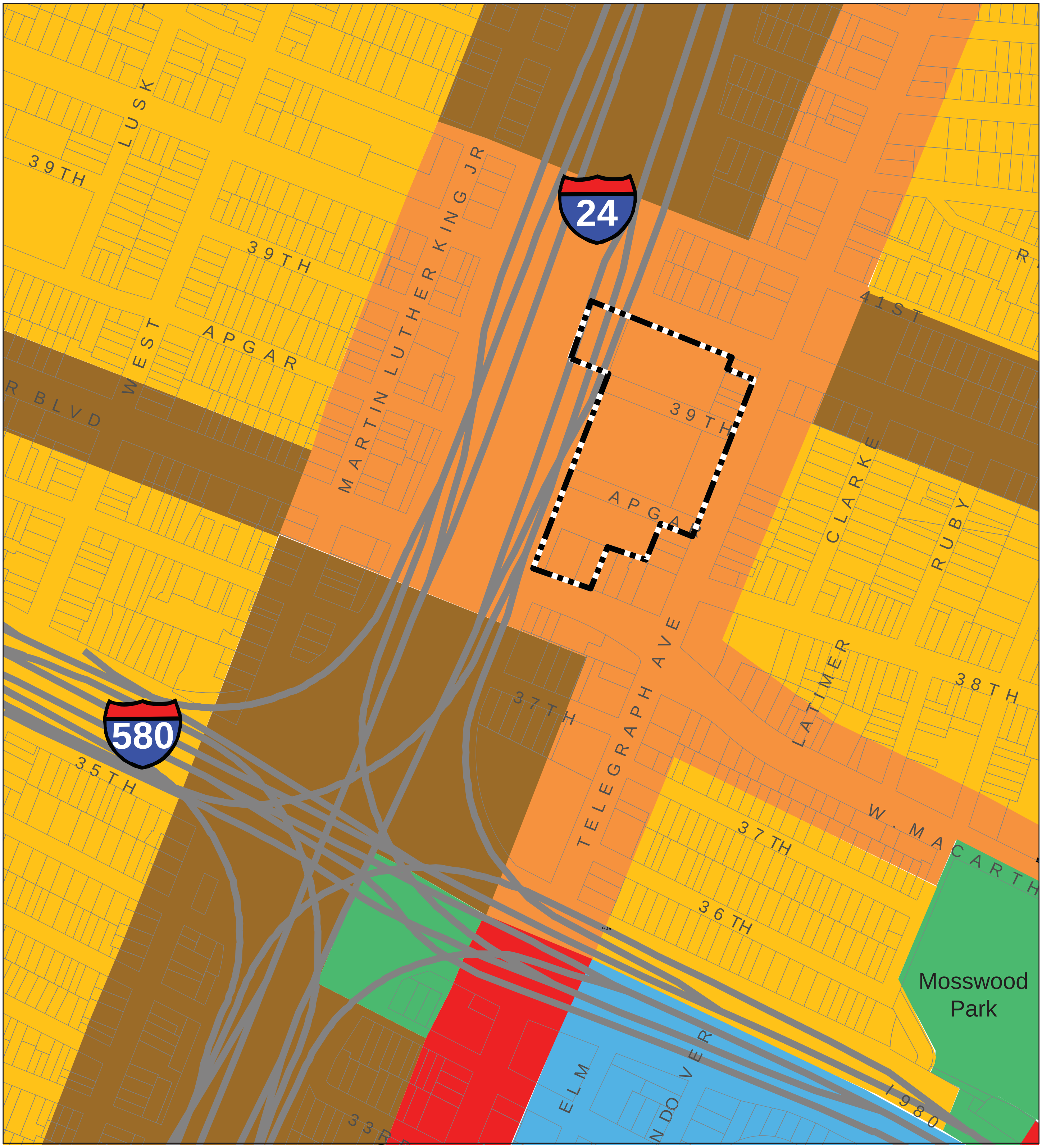

FIGURE IV.B-1

MacArthur Transit Village Project EIR

General Plan Land Use Designation Map

Legend

- Community Commercial
- Mixed Housing Type Residential
- Neighborhood Center Mixed Use
- Urban Residential
- Urban Open Space
- Institutional
- Project Site

N

0 600 1200 feet

SOURCE: CITY OF OAKLAND, 2005.

I:\MGB0701 macarthur bart\figures\Fig_IVB1.ai (8/2/07) gross acre.[3] The project would also further the goals of TOD within the city by introducing new commercial and residential land uses to the MacArthur BART Station to capitalize on the proximity of the existing public transit system. Additionally, the proposed rezoning to S-15, Transit-Oriented Development, is consistent with the Neighborhood Center Mixed-Use designation. An analysis of key LUTE policies that are applicable to the project is provided in Table IV.B-1.

(2) Housing Element. The Housing Element[4] of the General Plan was adopted by the City Council on June 15, 2004. California law requires that each city and county adopt a housing element that includes: an assessment of housing needs; a statement of the community's goals, objectives and polices related to housing; and a five-year schedule of actions to implement the goals and objectives of the housing element.

The following goals are identified in the Housing Element:

- *Goal 1:* Provide adequate sites suitable for housing for all income groups.
- *Goal 2:* Promote the development of adequate housing for low and moderate-income households.
- *Goal 3:* Remove constraints to the availability and affordability of housing for all income groups.
- *Goal 4:* Conserve and improve older housing and neighborhoods.
- *Goal 5:* Preserve affordable rental housing.
- *Goal 6:* Promote equal housing opportunity.
- *Goal 7:* Promote sustainable development and smart growth.
- *Goal 8:* Increase public access to information through technology.

The proposed project is generally consistent with applicable Housing Element policies. The proposed project would include a total of 675 units (562 market-rate units and 113 affordable rental units) and would provide a variety of unit sizes. The proposed project would be a TOD providing a variety of transit options and would include both commercial and community space. The Housing Element anticipated development on the project site, as the site was included as an "Additional Housing Opportunity Site"; however, the development anticipated on the project site was not necessary to meet the City's "Fair Share" housing goals.[5] The City is currently preparing an update to the Housing Element, and it is anticipated that the proposed housing units will help the City meet its regional

[3] FAR and residential density are based on gross site area, excluding the BART Plaza.

[4] City of Oakland, 2004. *Housing Element, January 1, 1999 – June 30, 2006,* June 15.

[5] Oakland, City of. 2004. Housing Element, Chapter 1 page 2 and Appendix C page C-25.

housing unit allocations. An analysis of key Housing Element policies is provided in Table IV.B-1.

(3) Pedestrian Master Plan. The Pedestrian Master Plan[6] is intended to promote pedestrian safety and access to ensure that Oakland is a safe, convenient, and attractive place to walk. It establishes a Pedestrian Route Network which includes streets, walkways, and trails that connect to schools, libraries, parks, neighborhoods, and commercial districts throughout the City. The Pedestrian Master Plan is a part of the LUTE Element of the General Plan.

The goals of the Pedestrian Master Plan include the following:

- *Pedestrian Safety.* Create a street environment that strives to ensure pedestrian safety.
- *Pedestrian Access.* Develop an environment throughout the City – prioritizing routes to school and transit – that enables pedestrians to travel safely and freely.
- *Streetscaping and Land Use.* Provide pedestrian amenities and promote land uses that enhance public spaces and neighborhood commercial districts.
- *Education.* Educate citizens, community groups, business associations, and developers on the safety, health, and civic benefits of walkable communities.
- *Implementation.* Integrate pedestrian considerations based on federal guidelines into projects, policies, and the City's planning process.

The Pedestrian Master Plan designates a Pedestrian Route Network that extends throughout Oakland, and identifies common walking routes to pedestrian destinations. Telegraph Avenue, adjacent to the project site, is within the Pedestrian Route Network.

The proposed project is generally consistent with the Pedestrian Master Plan as it incorporates features that enhance and facilitate pedestrian access to the project site. As part of the project, the applicant would install pedestrian enhancing features including sidewalks, benches, lighting, and public plazas. Additionally, new traffic signals proposed as part of the project would include pedestrian crossing signals facilitating pedestrian and bicycle access to the project site and to the MacArthur BART Station. An analysis of key Pedestrian Master Plan policies that are applicable to the project is provided in Table IV.B-1.

(4) Bicycle Master Plan. The Bicycle Master Plan[7] (BMP) is the official policy document addressing the development of facilities and programs to enhance the role of bicycling as a viable transportation choice in Oakland. The BMP is part of the LUTE Element

[6] City of Oakland, 2002. *Pedestrian Master Plan,* November.

[7] City of Oakland, 2007. *Bicycle Master Plan,* December.

of the General Plan. The BMP defines City policies and recommends actions that would encourage and support bicycle travel improvements. The project's consistency with the goals of the BMP is discussed below.

To develop Oakland as a bicycle-friendly community, the BMP identifies the following goals:

- *Infrastructure:* Develop the physical accommodations, including a network of bikeways and support facilities, to provide for safe and convenient access by bicycle.
- *Education:* Improve the safety of bicyclists and promote bicycling skills through education, encouragement, and community outreach.
- *Coordination:* Provide a policy framework and implementation plan for the routine.
- *Accommodation*: Accommodation of bicyclists in Oakland's projects and programs.

The proposed project is generally consistent with the goals of the BMP. The project incorporates pathways that facilitate bicycle access within the project site and to the MacArthur BART Station. The BMP states that the MacArthur BART Station is the most likely candidate for the next bike parking station.[8] Bicycle parking facilities, such as bike lockers, would be incorporated into the BART Plaza improvements (potentially an electronic key-card station) and within new mixed-use buildings associated with the proposed project, the BART parking garage and on-street within the proposed development. An analysis of key BMP policies (from both the existing plan and draft plan) that are applicable to the project site is provided in Table IV.B-1.

(5) Open Space, Conservation and Recreation Element. The Open Space, Conservation, and Recreation Element[9] (OSCAR) addresses the management of open land, natural resources and parks in Oakland. This element is divided into four major chapters that discuss Open Space, Conservation, Recreation, and Area Plans.

The OSCAR, which was adopted in June, 1996, addresses the management of the City's open land, natural resources, and parks. The City-wide park acreage goal set by the OSCAR is 10 acres of parkland per 1,000 residents. The City's park ratio at the time the OSCAR was completed (1996) was approximately 7.5 acres of parkland per 1,000 residents. The North Oakland Planning Area (in which the project is located) is one of the most heavily urbanized parts of Oakland, and with a few exceptions, lacks undeveloped natural areas. The North Oakland Planning Area is landlocked; however because of it's proximity to the hillside open spaces, it is perceived to have greater open space accessibility. Policies contained in the OSCAR that are relevant to land use within the project site are listed in Table IV.B-1 and discussed in Section IV.I, Public Services.

[8] Ibid.

[9] City of Oakland, 1996. *Open Space, Conservation, and Recreation (OSCAR) Element,* June.

(6) Historic Preservation Element. The Historic Preservation Element[10] (HPE) defines goals, objectives, policies and actions that encourage preservation and enhancement of Oakland's older buildings, districts and other physical environmental features having special historic, cultural, educational, architectural or aesthetic interest or value. HPE policies that apply to the project site include:

- Policy 1.2: Potential Designated Historic Properties: The City considers any property receiving an existing or contingency rating from the Reconnaissance or Intensive Surveys of "A" (highest importance), "B" (major importance), or "C" (secondary importance) and all properties determined by the Surveys to contribute or potentially contribute to an Area of Primary or Secondary Importance to warrant consideration for possible preservation. Unless already designated as Landmarks, Preservation Districts, or Heritage properties pursuant to Policy 1.3, such properties will be called "Potential Designated Historic Properties."
- Policy 1.3: Designated Historic Properties: The City will designate significant older properties which definitively warrant preservation as Landmarks, Preservation Districts or Heritage Properties. The designations will be based on a combination of Historical and Architectural Inventory Ratings, National Register of Historical Places criteria, and special criteria for Landmarks and Preservation District eligibility. Landmarks, properties which contribute or potentially contribute to Preservation Districts, and Heritage Properties will be called "Designated Historic Properties."
- Policy 3.1: Avoid or Minimize Adverse Historic Preservation Impacts Related to Discretionary City Actions. The City will make all reasonable efforts to avoid or minimize effects on the Character-Defining Elements of existing or Potential Designated Historic Properties which could result from private or public projects requiring discretionary City actions.
- Policy 3.3: Designated Historic Property Status for Certain City-Assisted Properties. To the extent consistent with other General Plan Goals, Policies and Objectives, as a condition for providing financial assistance to projects involving existing or Potential Designated Historic Properties, the City will require that complete application be made for such properties to receive the highest local designation for which they are eligible prior to issuance of a building permit for the project or transfer (for city-owned or controlled properties), whichever comes first. However, Landmark or Preservation District applications will not be required for projects which are small-scale or do not change exterior appearance.

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[10] City of Oakland, 1994. *City of Oakland Historic Preservation, an Element of the Oakland General Plan,* March 8.

- Policy 4.1: Archeological Resource: To protect significant archeological resources, the City will take special measures for discretionary projects involving ground disturbances located in archeologically sensitive areas.

Based on archival research conducted for this EIR analysis, no historic resources are located within the project site. A discussion of HPE policies related to the project is provided in Table IV.B-1 and specific details on the historic resources is provided in Section IV.K, Cultural and Paleontological Resources.

(7) Noise Element. The City's General Plan Noise Element is required to "analyze and quantify, to the extent practical, current and projected noise levels from the following noise sources: major traffic thoroughfares, passenger and freight railroad operations, commercial and general aviation operations, industrial plants, and other ground stationary noise sources contributing to the community noise environment".[11] These noise levels are depicted on noise contour maps that are used to guide land use decisions to reduce noise impacts, especially on sensitive receptors. According to the Noise Element, sensitive receptors include "residences, schools, churches, hospitals, elderly-care facilities, hotels and libraries and certain types of passive recreational open space." The Noise Element also includes a land use-noise compatibility matrix that illustrates the degree of acceptability of exposing various sensitive land uses to noise.

Noise-related policies are included in the LUTE and OSCAR, as well as in the Noise Element. The project site is located immediately adjacent to elevated portions State Route 24, the MacArthur BART Station including an elevated BART platform and tracks, and is also located south of 40th Street, north of West MacArthur Boulevard and West of Telegraph Avenue, all of which are major arterial streets. The project is not expected to generate new noise sources that would significantly increase noise within the project area. Additionally, the proposed project would be subject to Standard Conditions of Approval and Mitigation Measures to minimize long and short-term noise impacts. A discussion of the project's relationship with Noise Element policies is provided in Table IV.B-1.

(8) Oakland Safety Element. Adopted in November, 2004, the City of Oakland's Safety Element, Protect Oakland, is intended to "reduce the potential risk of death, injuries, property damage and economic and social dislocation resulting from large-scale hazards".[12] This Element addresses public safety, geologic hazards, fire hazards, hazardous materials, and flooding hazards. Given the topics that are addressed in the Safety Element, most of its policies generally apply citywide.

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[11] City of Oakland, 2005. *General Plan, Noise Element*, June.

[12] City of Oakland, 2004. *General Plan, Safety Element*, November.

The proposed project is generally consistent with the Safety Element. The project would be required to conform to all applicable safety regulations and requirements regarding seismic safety, and activities to remediate all contamination at the project site. A discussion of the project's relationship with relevant Safety Element policies is included in Table IV.B-1.

b. City of Oakland Planning Code. The City of Oakland Planning Code (Planning Code) implements the policies of the General Plan and other City plans, policies, and ordinances. The Planning Code divides the City into zones, each of which is assigned different land use and development regulations. These regulations direct the construction, nature, and extent of building use. The zoning districts within the project site are High Density (R-70)/Mediated Residential Design (S-18) and Commercial Shopping District (C-28)/Mediated Residential Design (S-18). Figure IV.B-2 shows the existing Planning Code zoning designations within and around the project site.

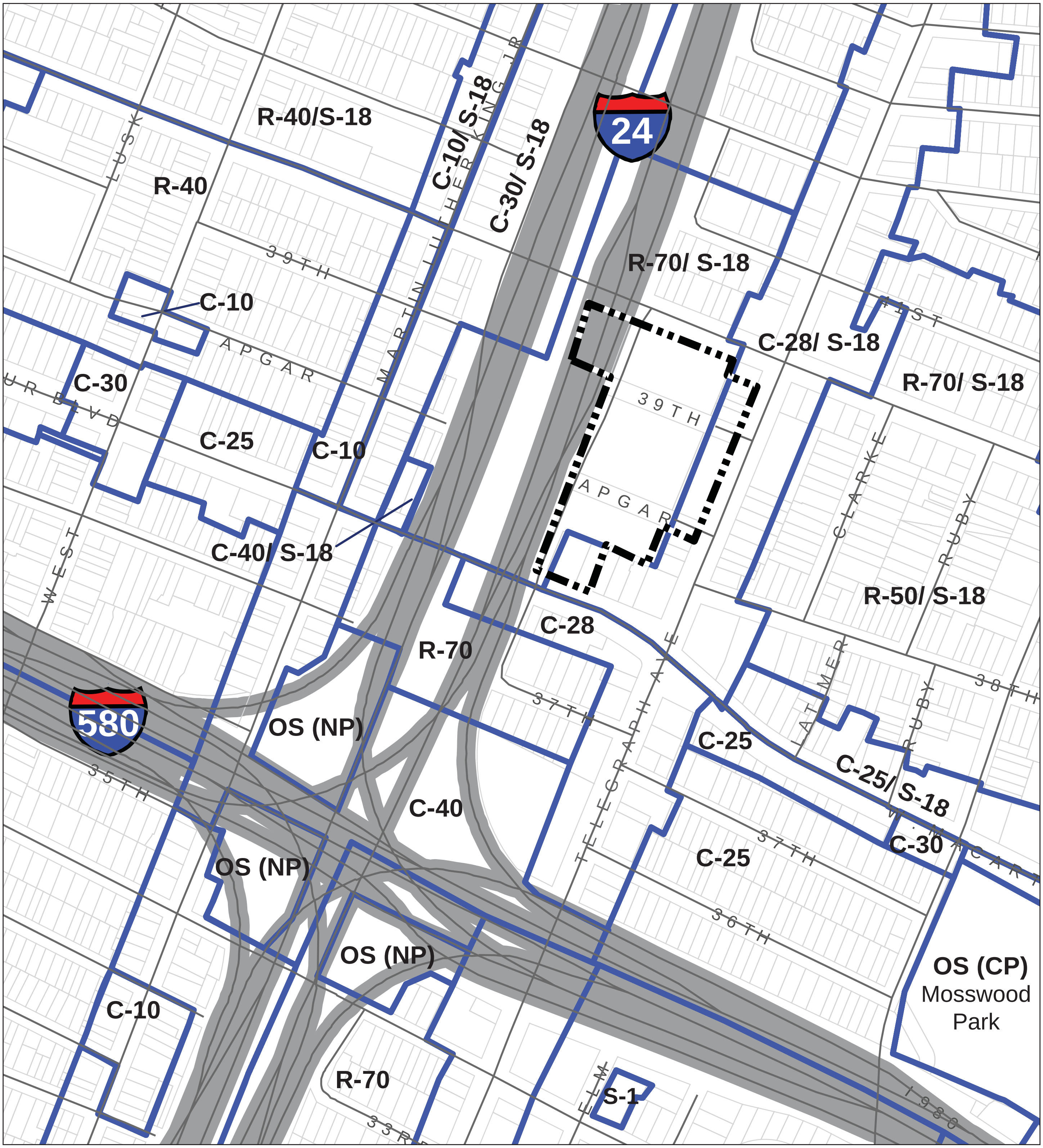
The project applicant is requesting a rezone of the project site to Transit-Oriented Development (S-15). A description of both the existing and proposed zoning for the project site is found below.

(1) Existing Zoning. The project's relationship with existing zoning designations is discussed below.

High Density (R-70). The intent of the R-70 Zone is to create, preserve and enhance areas for apartment living at high densities in desirable settings, and is typically appropriate to areas having good accessibility to transportation routes and major shopping and community centers. The maximum allowable density within this zoning designation is 96 units/acre and the maximum height is 40 feet.

Commercial Shopping District (C-28). The intent of the C-28 Zone is to create, preserve, and enhance major boulevards of medium-scale commercial establishments featuring some specified high density nodes in attractive settings oriented to pedestrian comparison shopping. This zone is also intended to encourage mixed-use and nonresidential developments. The maximum residential density in this zone is 96 units/acre and the maximum height is 55 feet.

Mediated Residential Design Review Combining District (S-18). This zone is intended to offer owners of properties in close proximity to projects that involve new construction of one or two units on a lot, an opportunity to resolve directly with the project applicant or the applicant's representatives, through mediation, any issues concerning the project design, and especially issues concerning the project's massing or bulk and any view, privacy and solar access impacts of the project on neighboring properties.



Legend

Project Site

Zoning District

Commercial Zoning

C-10 Local Retail

C-25 Office Commercial

C-28 Commercial Shopping District

C-30 District Shopping

C-40 Community Thoroughfare

Open Space Zoning

OS (NP) Neighborhood Park

Residential Zoning

R-40 Garden Apartment

R-70 High Density

Special Zoning

S-1 Medical Center

S-18 Mediated Residential Design

N

0 600 1200

feet

FIGURE IV.B-2

MacArthur Transit Village Project EIR

Zoning Designations Map

SOURCE: CITY OF OAKLAND, 2005.

I:\MGB0701 macarthur bart\figures\Fig_IVB2.ai (7/30/07)

(2) Proposed Zoning. The project's relationship with proposed zoning is discussed below.

Transit-Oriented Development (S-15). The intent of this zone is to create, preserve and enhance areas devoted primarily to serve multiple nodes of transportation and to feature high-density residential, commercial and mixed-use development to encourage a balance of pedestrian-oriented activities, transit opportunities, and concentrated development. Additionally, this zone is intended to encourage a safe and pleasant pedestrian environment near transit stations by allowing a mixture of residential, civic, commercial and light industrial activities appropriate around transit centers such as Bay Area Rapid Transit District (BART) stations. The maximum residential density is 96 units/acre, and the maximum permitted height is 45 feet.

The project includes a request to rezone of the project site to the S-15 TOD Zone. The S-15 District is an appropriate designation for the project area because it is a "best-fit" Zoning Designation for the Neighborhood Center Mixed-Use General Plan land use designation; the General Plan designates the area around the MacArthur BART Station as one of the City's eight Transit-Oriented Districts; the site is immediately adjacent to the MacArthur BART Station and several transit providers have service lines around the project area; and lastly because the proposed project is a TOD that would meet the intent of the S-15 Zone by developing a high-density, mixed-use development with residential, neighborhood commercial and a community serving use.

The proposed project is consistent with the development standards of the S-15 District, with the exception of maximum building height and minimum open space requirements. As described in Chapter III, the City may consider a text amendment to the Transit-Oriented Development (S-15) Zone for this site to amend the maximum permitted height (from 55 feet to 85 feet) and allow a reduction in the open space requirement. City Staff believes that the current open space requirements and height limits may not be appropriate for this site due to its location adjacent to BART and State Route 24 and that they could compromise achieving other City policies related to Transit Oriented Development.

The S-15 zone requires a Conditional Use Permit (CUP) or a Planned Unit Development Permit (PUD) for mixed-use developments that include BART stations on sites with more than 1 acre of land area. The proposed project includes a request for a PUD to establish a mixed-use development at the MacArthur BART station.

c. Broadway/MacArthur/San Pablo Redevelopment Plan. The Redevelopment Plan for the Broadway/MacArthur/San Pablo Redevelopment Project[13] (Redevelopment Plan) provides the Redevelopment Agency with powers, duties, and obligations towards the redevelopment, rehabilitation and revitalization of the Broadway/MacArthur/San Pablo Redevelopment Project Area. The Redevelopment Plan does not present a precise plan or establish specific projects; instead, the Redevelopment Plan presents a process and basic framework within which specific plans will be presented, specific projects will be established and specific solutions will be proposed. The MacArthur BART Transit Village project site falls within this Redevelopment Plan area.

In addition to the Redevelopment Plan, the Redevelopment Agency adopted the Broadway/MacArthur/San Pablo Redevelopment Project Five-Year Implementation Plan (2004-2009). Goals included in the Implementation Plan are included in the list below.

The major goals of the Redevelopment Plan are to:

- Stimulate in-fill development and land assembly opportunities on obsolete, underutilized and vacant properties in the project area.
- Stimulate opportunities for adaptive re-use and preservation of existing building stock in the project area.
- Attract new businesses and retain existing businesses in the project area, providing job training and employment opportunities for area residents.
- Improve transportation, public facilities and infrastructure throughout the project area.
- Stimulate home ownership opportunities in the project area.
- Improve the quality of the residential environment by assisting in new construction, rehabilitation and conservation of living units in the project area.
- Revitalize neighborhood commercial areas.

The proposed project would be compatible with the major goals of the Redevelopment Plan and 5-Year Implementation Plan. The project would be an in-fill development project on an underutilized site. The project would provide space for new residential and commercial uses within the MacArthur neighborhood and would result in improved access to and around the project site. The project would allow for home ownership opportunities within the neighborhood and would provide approximately 113 affordable housing units. Overall, the project would result in a revitalization of the area surrounding the MacArthur BART Station.

[13] City of Oakland Redevelopment Agency, 2007. *Redevelopment Plan for the Broadway/MacArthur/San Pablo Redevelopment Project,* Adopted July 25, 2000, Amended March 6, 2007.

d. Sustainable Community Development Initiative. The Oakland City Council adopted a Sustainable Community Development Initiative (Initiative) in 1998. The Initiative is a program that seeks to enhance the environmental sustainability of City operations and private development within the City. The major objectives of the Initiative include the following: economic development; employment training and continuing education; encouragement of in-fill housing, mixed-use development, and sustainable ("green") building; making City operations and services a model of sustainable practices; and increasing community involvement. The Sustainable Development Initiative comprises voluntary guidelines intended to preserve environmental health and increase economic development, and private developers are not required to incorporate them into projects. The following activities listed as part of the Initiative relate to the proposed project:

- In-fill housing.
- Green building guidelines.
- Promote mixed-use development.
- Establish transit villages.
- Improve quality of existing housing.

The proposed project would be compatible with the Sustainable Community Development Initiative. This project would be a TOD and would be accessible to multiple modes of transportation. The project site would be located on an underutilized site within a dense urban neighborhood in North Oakland and would incorporate a mix of uses, including residential, commercial and community-serving uses. Additionally, the project is part of the LEED Neighborhood Development (ND) Pilot Program. LEED certification provides independent, third-party verification that a development's location and design meet accepted high standards for environmentally responsible, sustainable, development. Unlike other U.S. Green Building Council (USGBC) LEED programs, LEED ND places significant emphasis on the urban design and urban planning elements that bring buildings together into a neighborhood focusing on pedestrian experience and encouraging social interaction. LEED ND credits are broken up into four categories: 1) Smart Location and Linkage (SLL), 2) Neighborhood Pattern and Design (NPD), 3) Green Construction and Technology, and 4) Innovation and Design Process.

e. City of Oakland "Transit First" Policy. The City of Oakland adopted a "Transit-First" Resolution in October 1996 which states the City's support for public transit and other alternatives to the single-occupant vehicle. This policy focused on resolving conflicts between public transit and single occupant vehicles on City streets in favor of the transit mode that has the potential to provide the greatest mobility for people rather than vehicles.

The project site is immediately adjacent to the MacArthur BART Station and the site is served by major AC Transit lines and multiple shuttle operators. The proposed circulation and building configuration is designed to improve public transit, pedestrian and bicycle access to the site; overall the project would encourage the use of transit and support the City's Transit First Policy because of the project's internal circulation and location near public transit.

f. BART Strategic Plan. The BART District Board of Directors adopted the BART Strategic Plan in 1999 to help guide BART into the 21st century.[14] In 2003 the Board adopted an updated, fine-tuned BART Strategic Plan, which includes a new focus on implementation. BART Policies offer guidance in important areas of long-term concern to the agency. Each policy has been adopted by the Board of Directors, and provides overall guidance for decision making on complex or controversial issues. The Strategic Plan focuses on seven key areas and identifies goals for each. Key goals and strategic initiatives of the 2003 BART Strategic Plan that are applicable to the project site include:

- Maximize regional transit access, convenience, and ease of use through effective coordination among transit providers.
- Encourage and facilitate improved access to, and from, our stations by all modes.
- Enhance multi-modal access to the BART system.
- Increase ridership by enhancing access to the BART system.
- Enhance the use of resource-efficient and environmentally-friendly access modes (e.g. bikes, walking, etc.), and other sustainable features at BART's new and existing stations.
- Promote sustainable, TOD in the communities BART serves to maximize the use of BART as the primary mode of transportation.
- Integrate sustainability principles and practices including multimodal access into the planning, design, and construction of new BART stations and related facilities.
- In partnership with the communities it serves, BART properties will be used in ways that first maximize transit ridership and then balance TOD goals with community desires.
- In partnership with the communities BART serves, we will promote transit ridership and enhance the quality of life by encouraging and supporting TOD within walking distance of BART stations.
- Demonstrate a commitment to transit-supportive growth and development.
- Develop projects in partnership with communities that will be served.
- Assure that all projects address the needs of the District's residents.
- Create access programs in partnership with communities.

[14] San Francisco Bay Area Rapid Transit District, 2003. BART Strategic Plan, adopted 1999; updated 2003

- Manage access programs and parking assets in an efficient, productive, environmentally sensitive, and equitable manner.
- Foster compact transit-oriented and transit-serving mixed-use development of BART properties, maximize transit ridership, and balance development goals with community desires.
- Promote transit ridership and enhance quality of life by encouraging and supporting TOD within walking distance of BART stations and along transit corridors that serve BART stations.
- BART will encourage and consider public input as integral to sound, balanced policy development and decision-making, and make deliberate, disciplined decisions in the best interests of the people it serves.

The proposed project is generally consistent with the 2003 BART Specific Plan because the project is a TOD that would (a) implement strategies from the MacArthur BART Access Plan to improve multi-model access by allowing adequate space for shuttle, taxi and bus services; (b) improve bicycle and pedestrian access to the BART Station by including/ improving sidewalks and bikeways within and around the project site; (c) include a 300-space parking garage designated for BART patrons; (d) address the needs of area residents by improving the site with new residential land uses and neighborhood-serving commercial uses; and (e) increase ridership.

g. BART Transit-Oriented Development Policy. The BART District Board of Directors adopted a TOD Policy in July, 2005. The BART TOD Policy includes the following Vision statement and four policy goals:

> "The San Francisco Bay Area Rapid Transit District (BART) is the steward of a large-scale public investment, which includes important real property assets essential to BART's operation. These assets also contribute to the ongoing financial viability of the transit system. Recent system extensions and federal, state and regional policy direction to concentrate growth around transit further enhances the value of these assets. By promoting high quality, more intensive development on and near BART-owned properties, the District can increase ridership, support long-term system capacity and generate new revenues for transit. Also, such development creates attractive investment opportunities for the private sector and facilitates local economic development goals."

TOD Policy goals:

- Increase transit ridership and enhance quality of life at and around BART stations by encouraging and supporting high quality TOD within walking distance of BART stations.

- Increase TOD projects on and off BART property through creative planning and development partnerships with local communities.
- Enhance the stability of BART's financial base through the value capture strategies of TOD.
- Reduce the access mode share of the automobile by enhancing multi-modal access to and from BART stations in partnership with communities and access providers.

The proposed project is consistent with the goals of the BART TOD policy because the project would redevelop an existing surface parking lot and a few adjacent parcels with up to 675 residential uses and up to 44,000 square feet of commercial uses immediately east of the MacArthur BART Station. The project would include adequate access for multi-modal facilities (consistent with applicable recommendations from the MacArthur BART Access Plan), and would replace only one-half of the existing parking spaces in an effort to reduce the automobile mode share access to the station.

2. Impacts and Mitigation Measures

As discussed throughout this section, the project is generally consistent with relevant City of Oakland and BART land use policies. A detailed discussion of impacts and mitigation measures is not included in this section as inconsistencies with planning policies in and of themselves, does not constitute a significant environmental impact.

Regarding a project's consistency with the General Plan in the context of CEQA, the Oakland General Plan states the following:

> "The General Plan contains many policies which may in some cases address different goals, policies and objectives and thus some policies may compete with each other. The Planning Commission and City Council, in deciding whether to approve a proposed project, must decide whether, on balance, the project is consistent (i.e., in general harmony) with the General Plan. The fact that a specific project does not meet all General Plan goals, policies and objectives does not inherently result in a significant effect on the environment within the context of the California Environmental Quality Act (CEQA). (City Council Resolution No. 79312 C.M.S.; adopted June 2005)"

Conflicts between a project and applicable policies do not constitute significant physical environmental impacts in and of themselves. A policy inconsistency is considered to be a significant adverse environmental impact only when it is related to a policy adopted for the purpose of avoiding or mitigating an environmental effect and it is anticipated that the inconsistency would result in a significant adverse physical impact based on the established significance criteria. Such impacts, if any, are identified and discussed in the applicable topic sections. For example, policies related to transportation level of service are considered in the transportation significance criteria and analyzed in the transportation impacts.

Table IV.B-1 Relationship of Project to Relevant Plans and Policies

Policy #	Policy	Relationship
City of Oakland General Plan, Land Use and Transportation Element		
Industry and Commerce Policies		
Policy I/C1.4	**Investing in Economically Distressed Areas of Oakland.** Economic investment, consistent with the City's overall economic strategy, should be encouraged, and, where feasible, should promote viable investment in economically distressed areas of the City.	The proposed project would redevelop an underutilized site within the Broadway/MacArthur/San Pablo Redevelopment Plan area and provide market-rate housing, affordable housing, commercial and community space.
Policy I/C3.1	**Locating Commercial Business.** Commercial uses, which serve long term retail needs of regional consumers and which primarily offer durable goods, should be located in areas adjacent to the I-880 freeway or at locations visible or amendable to high volumes of vehicular traffic, and accessible by multiple modes of transportation.	Although the commercial square footage provided as part of the proposed project would be neighborhood serving, given that it would be located immediately adjacent to the MacArthur BART Station, it would be accessible by multiple modes of transportation, including cars, buses, BART trains, bicycles and pedestrians.
Policy I/C3.3	**Clustering Activity in "Nodes".** Retail uses should be focused in "nodes" of activity, characterized by geographic clusters of concentrated commercial activity, along corridors that can be accessed through many modes of transportation.	The proposed project, located immediately adjacent to the MacArthur BART Station and Telegraph Avenue, would include 44,000 square feet of commercial space.
Policy I/C3.4	**Strengthening Vitality.** The vitality of existing neighborhood mixed-use and community commercial areas should be strengthened and preserved.	The proposed project would provide additional commercial and housing opportunities for the MacArthur BART station neighborhood.
Policy I/C4.2	**Minimizing Nuisances.** The potential for new or existing industrial or commercial uses, including seaport and airport activities, to create nuisance impacts on surrounding residential land uses should be minimized through appropriate siting and efficient implementation and enforcement of environmental and development controls.	The project includes residential construction in close proximity to BART and State Route 24. Special attention to the design of residential units, including window and door placement, was considered by the project architect in siting of new buildings. New buildings in the project would be subject to compliance with the City's Noise Ordinance and Section IV.E includes applicable Standard Conditions of Approval and Mitigation Measures to ensure compliance with the City's noise standards.
Transportation and Transit-Oriented Development Policies		
Policy T2.1	**Encouraging Transit-Oriented Development.** Transit-oriented development should be encouraged at existing or proposed transit nodes, defined by the convergence of two or more modes of public transit such as BART, bus, shuttle service, light rail or electric trolley, ferry and inter-city commuter rail.	The proposed project would be considered TOD, and would include a mixture of uses at a site immediately adjacent to the MacArthur BART station, which is served by a variety of transit modes.

Table IV.B-1 Relationship of Project to Relevant Plans and Policies

Policy #	Policy	Relationship
Policy T2.2	**Guiding Transit-Oriented Development.** Transit-oriented developments should be pedestrian oriented, encourage night and day time use, provide the neighborhood with needed goods and services, contain a mix of land uses, and be designed to be compatible with the character of surrounding neighborhoods.	The proposed project would include a mix of residential and commercial uses. Sidewalks and street lighting would be incorporated into the project design, and commercial uses would be neighborhood serving. While the buildings proposed as part of the project would be taller than surrounding structures, the top floors of most structures along Telegraph Avenue, West MacArthur Boulevard, and 40th Street would be set back from the lower floors to be compatible with adjacent structures.
Policy T2.3	**Promoting Neighborhood Services.** Promote neighborhood-serving commercial development within one-quarter to one-half mile of established transit routes and nodes.	The proposed project would include 44,000 square feet of commercial space which would be neighborhood serving and the Frontage Road connecting 40th Street and W. MacArthur Boulevard has been re-designed to expedite shuttle service.
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.	The proposed project would include paths and sidewalks to facilitate bicycle and pedestrian access within the site and to the MacArthur BART Station.
Policy T3.6	**Encouraging Transit.** The City should encourage and promote use of public transit in Oakland by expediting the movement and access to transit vehicles on designated "transit streets' as shown on the Transportation Plan. (Policies T3.6 and T3.7 are based on the City Council's passage of "Transit First" policy in October 1996.)	Telegraph Avenue, immediately adjacent to the project site, is designated as a "transit street." The proposed project would incorporate internal streets to facilitate transit and improve access within the project site by bus and shuttle operators. Additionally, the proposed project would increase residential development adjacent to a BART station and ultimately result in increased ridership.
Policy T3.11	**Prioritize Parking.** Parking in residential areas should give priority to adjacent residents.	As part of the project, the project applicant has proposed the creation of a Residential Parking Permit program for the neighborhood adjacent to the MacArthur BART Station. In Oakland, residents must petition to create a residential parking permit area. This program would impose parking time limits for non-residents within the neighborhood adjacent to the MacArthur station.
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.	The proposed project incorporates design features, such as internal streets, sidewalks, and bike paths, to encourage bicycling and walking.

Table IV.B-1 Relationship of Project to Relevant Plans and Policies

Policy #	Policy	Relationship
Policy T6.2	**Improve Streetscapes.** The City should make major efforts to improve the visual quality of streetscapes. Design of the streetscape, particularly in neighborhoods and commercial centers, should be pedestrian–oriented and include lighting, directional signs, trees, benches, and other support facilities.	The proposed project would include pedestrian amenities, including lighting, trees, benches, and other improvements.
Neighborhood Policies		
Policy N1.1	**Concentrating Commercial Development.** Commercial development in the neighborhoods should be concentrated in areas that are economically viable and provide opportunities for smaller scale, neighborhood-oriented retail.	The project includes approximately 44,000 square feet of commercial space which would be geared towards neighborhood serving uses. Commercial uses would be located on the ground floor of the buildings, and would be concentrated along Telegraph Avenue, Village Drive and across from the BART fare gate frontages to facilitate pedestrian access.
Policy N1.2	**Placing Public Transit Stops.** The majority of commercial development should be accessible by public transit. Public transit stops should be placed at strategic locations in the Neighborhood Activity Centers and Transit-Oriented Districts to promote browsing and shopping by transit users.	The proposed project would be immediately adjacent to the MacArthur BART Station and would be accessible by BART trains, buses, shuttles, bicycles, and pedestrians.
Policy N1.5	**Design Commercial Development.** Commercial development should be designed in a manner that is sensitive to surrounding residential uses.	Commercial uses on the project site would be incorporated into the mixed-use buildings, which would be consistent in scale to existing ground floor commercial in the area. While the buildings proposed as part of the project would be taller than surrounding structures, the top floors of most structures along Telegraph Avenue, West MacArthur Boulevard, and 40th Street would step back to create the impression of shorter structures and be similar in scale with the surrounding development.
Policy N1.8	**Making Compatible Development.** The height and bulk of commercial development in "Neighborhood Mixed-Use Center" and "Community Commercial" areas should be compatible with that which is allowed for residential development.	The buildings proposed as part of the project would be taller than surrounding structures; however, the top floors of most structures along Telegraph Avenue, West MacArthur Boulevard, and 40th Street would step down to create the impression of shorter structures and to be similar in scale with the surrounding development.

Table IV.B-1 Relationship of Project to Relevant Plans and Policies

Policy #	Policy	Relationship
Policy N3.2	**Encouraging Infill Development.** In order to facilitate the construction of needed housing units, infill development that is consistent with the General Plan should take place throughout the City of Oakland.	The proposed project would be considered infill development and would develop an underutilized parcel in an urban neighborhood in North Oakland. The proposed project would be consistent with the General Plan.
Policy N3.9	**Orienting Residential Development.** Residential developments should be encouraged to face the street and to orient their units to desirable sunlight and views, while avoiding unreasonably blocking sunlight and views for neighborhood buildings, respecting the privacy needs of residents of the development and surrounding properties, providing for sufficient conveniently located on-site open space, and avoiding undue noise exposure.	The proposed project would orient residential units towards the street. Buildings B, C and D would incorporate front entryways and/or stoops into the design, and would create a sense of "eyes on the street." Additionally, all buildings would incorporate center courtyards to provide more unit access to light and air.
Policy N3.10	**Guiding the Development of Parking.** Off-street parking for residential buildings should be adequate in amount and conveniently located and laid out, but its visual prominence should be minimized.	Off-street parking for residential buildings would be provided within below-grade and at-grade parking garages for each of the proposed residential buildings with only the entrance to the garage would be visible from the streets and sidewalks within the project. However, the garage for Building B is visible from Frontage Road. The proposed amount of parking would meet (and exceed) the S-15 residential parking requirement of ½ parking space per dwelling unit and spaces for the dwelling units will be conveniently located in garages underneath the residential buildings.
Policy N4.2	**Advocating for Affordable Housing.** The City encourages local non-profit organizations, affordable housing proponents, the business community, the real estate industry, and other local policy makers to join in efforts to advocate for the provision of affordable housing in communities throughout the Bay Area region.	The proposed project would include affordable units at a rate of 17 percent of the market-rate units. These would be studios, 1, 2, and 3 bedroom units.
Policy N6.1	**Mixing Housing Types.** The City will generally be supportive of a mix of projects that provide a variety of housing types, unit sizes, and lot sizes which are available to households with a range of incomes.	While all housing units would be condominium/apartment multi-family housing, a mixture of studios, 1, 2, and 3 bedroom apartments would be available.
Policy N6.2	**Increased Home Ownership.** Housing developments that increase home ownership opportunities for households of all incomes are desirable.	Affordable housing units would be incorporated into the project; most for-sale units would be sold at market rates.

Table IV.B-1 Relationship of Project to Relevant Plans and Policies

Policy #	Policy	Relationship
Policy N7.1	**Ensuring Compatible Development.** New residential development in Detached Unit and Mixed Housing Type areas should be compatible with the density, scale, design, and existing or desired character of surrounding development.	Commercial uses on the project site would be incorporated into the mixed-use buildings. While the buildings proposed as part of the project would be taller than surrounding structures, the top floors of most structures along Telegraph Avenue, West MacArthur Boulevard, and 40th Street would step back to create the impression of shorter structures to blend in with the surrounding development. The proposed project would be compatible with the General Plan designation for the project site.
Policy N7.2	**Defining Compatibility.** Infrastructure availability, environmental constraints and natural features, emergency response and evacuation times, street width and function, prevailing lot size, predominant development type and height, scenic values, distance from public transit, and desired neighborhood character are among the factors that could be taken into account when developing and mapping zoning designations or determining "compatibility." These factors should be balanced with the citywide need for additional housing.	Commercial uses on the project site would be incorporated into the mixed-use buildings. While the buildings proposed as part of the project would be taller than surrounding structures, the top floors of the structures along Telegraph Avenue, West MacArthur Boulevard, and 40th Street would step back to create the impression of shorter structures that blend in better with the surrounding development. The proposed project would be compatible with the General Plan designations for the project site.
Policy N7.4	**Designing Local Streets.** Local streets should be designed to create an intimate neighborhood environment and not support high speed nor large volumes of traffic. Providing on-site parking for cars and bicycles, planting and maintaining street trees, and landscaping, minimizing the width of driveway curb cuts, maintaining streets, bike routes, and sidewalks, and orienting residential buildings toward the street all contribute to the desired environment.	The internal streets proposed as part of the project would be designed for slower speeds and would include on-street parking, bicycle access, landscaping and sidewalks. Conceptual elevations (see Chapter 3 for elevation figures) indicate that all new residential and mixed-use buildings within the project would be designed toward the internal streets, as well as, articulated elevation facing outward toward the perimeter streets around the project site.
Policy N8.1	**Developing Transit Villages.** "Transit Village" areas should consist of attached multi-story development on properties near or adjacent to BART stations or other well-used or high volume transit facilities, such as light rail, train, ferry stations, or multiple-bus transfer locations. While residential units should be encouraged as part of any transit village, other uses may be included where they will not negatively affect the residential living environment. (See discussion of Transit-Oriented Districts in the Transportation section in this chapter.)	The proposed project would be considered a Transit Village as it proposes multi-story mixed-use buildings immediately adjacent to the BART Station. Uses proposed as part of the project include residential (both market-rate units and affordable units), commercial uses, parking, and community uses.

Table IV.B-1 Relationship of Project to Relevant Plans and Policies

Policy #	Policy	Relationship
Policy N8.2	**Making Compatible Interfaces Between Densities.** The height of development in urban residential and other higher density residential areas should step down as it nears lower density residential areas to minimize conflicts at the interface between the different types of development.	While there are residential uses immediately adjacent to the project site, these residential uses are multi-family structures. The closest single-family residential units are located immediately south of the project along West MacArthur Boulevard and across 40th Street, north of the project site. The height of proposed buildings along 40th Street would step down at the corner of Telegraph Avenue to relate to the existing building at the southwest corner of Telegraph Avenue and 40th Street.
Policy N10.1	**Identifying Neighborhood "Activity Centers."** Neighborhood Activity Centers should become identifiable commercial, activity and communication centers for the surrounding neighborhood. The physical design of neighborhood activity centers should support social interaction and attract persons to the area. Some of the attributes that may facilitate this interaction include plazas, pocket parks, outdoor seating on public and private property, ample sidewalk width, street amenities such as trash cans and benches, and attractive landscaping.	The project site would be considered a Neighborhood Activity Center and would incorporate a variety of uses and would include amenities that support social interaction, including a public plaza (across from the BART fare gates) sidewalks outdoor seating, and street amenities including trash cans, benches, and landscaping. Please see Chapter 3, Project Description, for the Conceptual Landscape Plan.
Policy N11.6	**Suggested Proactive Developer and Community Relations.** Prior to submitting required permit application(s), project sponsors of medium and large scale housing developments should be encouraged to meet with established neighborhood groups, adjacent neighbors, and other interested local community members, hear their concerns regarding the proposed project, and take those concerns into consideration. It is suggested that the relationship established between the developer and the community continue throughout the construction process to minimize the impacts of construction activity on the surrounding area.	Since the project sponsor was selected as the project developer in 2004, the applicant has conducted several public meetings with the Citizen's Planning Committee (CPC). The CPC works on neighborhood issues related to the MacArthur BART Transit Village project. CPC meeting dates at which the project sponsor presented the project include: September 19, 2007, October 5, 2006, February 22, 2006, November 9, 2005, November 15, 2004, May 18, 2005, June 16, 2004 and April 21, 2004.
Policy N.12.1	The development of public facilities and staffing of safety-related services, such as fire stations, should be sequenced and timed to provide a balance between land use and population growth, and public services at all times.	The proposed project would increase the population in North Oakland by approximately 1,845 persons, which would in turn increase the demand for safety-services in the project area. Although the demand for safety services would increase, the City's Police and Fire Departments and BART Police are staffed adequately to service the increased demand.

Table IV.B-1 Relationship of Project to Relevant Plans and Policies

Policy #	Policy	Relationship
Policy N.12.2	Adequate public school capacity should be available to meet the needs of Oakland's growing community. The City and the Oakland Unified School District (OUSD) should work together to establish a continuing procedure for coordinating residential and commercial development and exploring the imposition of mutually agreed upon reasonable and feasible strategies to provide for adequate school capacity. The City and OUSD should jointly consider where feasible and appropriate, funding mechanisms such as assessment districts, redevelopment Agency funding (AB 1290), use of surplus, City-owned land, bond issues, and adjacent or shared use of land or school facilities with recreation, libraries, child care and other public uses.	Based on Oakland Unified School District projections, a total increased of 137 elementary, middle, and high school students would be generated by the proposed project. The existing neighborhood schools within the project area are currently operating well below capacity and are anticipated to have available capacity for future students. Should these schools reach capacity at the time of project build out, students would be diverted to other schools of their choice within the OUSD. The OUSD would be able to accommodate additional students generated by the proposed project and no new facilities would need to be constructed.
Policy N.12.4	Electrical, telephone, and related distribution lines should be undergrounded in commercial and residential areas, except where special local conditions such as limited visibility of the poles and wires make this unneeded. They should also be underground in appropriate institutional, industrial, and other areas, and generally along freeways, scenic routes, and heavily traveled streets. Programs should lead systematically toward the eventual undergrounding of all existing lines in such places. Where significant utility extensions are taking place in these areas, such as in new subdivisions, utilities should be installed underground at the start.	New electrical, telephone and related distribution lines in connection with the proposed project would be underground lines.
Housing Element		
Policy 2.1	**Affordable Housing Development Programs.** Provide financing for the development of affordable housing for low- and moderate-income households. The City's financing programs will promote a mix of housing types, including homeownership, multifamily rental housing, and housing for seniors and persons with special needs.	The proposed project would include affordable housing with the number of affordable housing units equal to approximately 17 percent of total units (20 percent of market-rate units). Most affordable units would be rental units. The Developer is seeking additional funding from the following sources to facilitate the development of affordable housing: tax credit financing, Affordable Housing Set-Aside funds, Home Program funds, and redevelopment funds.

Table IV.B-1 Relationship of Project to Relevant Plans and Policies

Policy #	Policy	Relationship
Policy 2.4	**Inclusion of Affordable Units in Market Rate Projects.** Seek voluntary agreements with private developers of market rate housing to include units affordable to lower-income households, especially those projects involving Redevelopment Agency support or requiring major planning approvals.	The proposed project would include affordable housing with the number of affordable housing units equal to approximately 17 percent of the market-rate units (20 percent of the market-rate units).
Policy 2.7	**Large Families.** Encourage the development of affordable rental and ownership housing units that can accommodate large families.	The affordable housing units would include a mixture of studios, 1, 2, and 3 bedroom units.
Policy 4.3	**Commercial District Revitalization.** Continue to implement programs to revitalize commercial districts in low income neighborhoods. Commercial revitalization will serve as a catalyst for investment in conserving and improving the housing stock in surrounding areas.	The proposed project would include approximately 44,000 square feet of commercial development.
Policy 7.1	**Sustainable Residential Development Programs.** Develop and promote programs to foster the incorporation of sustainable design principles, energy efficiency and Smart Growth principles into residential developments. Offer education and technical assistance regarding sustainable development to project applicants.	The proposed project is part of the LEED ND pilot program, and would incorporate energy efficient and green building measures. The project would adhere to the energy efficiency regulations outlined in Title 24. The project would also be considered a TOD, resulting in a higher rate of use of alternative forms of transportation, thus reducing energy consumption associated with single occupancy vehicles.
Policy 7.2	**Energy Conservation.** Encourage the incorporation of energy conservation design features in existing and future residential development.	The proposed project would incorporate energy conservation design features by designing buildings with orientation to maximize natural light and air and incorporating energy efficient appliances within new residential buildings. Such design features are components of the LEED ND pilot project, of which the project is a part.
Policy 7.3	**Infill Development.** Continue to direct development toward existing communities and encourage infill development at densities consistent with the surrounding communities.	The proposed project would be considered infill development on an underutilized site. While the density of the proposed project would be higher than the buildings surrounding the project site, the density would be consistent with the General Plan designation of the project site.
Policy 7.5	**Mixed-Use Development.** Encourage a mix of land uses in the same zoning district or on the same site in certain zoning districts.	The proposed project would incorporate a mixture of uses, including residential, commercial, community and parking.

Table IV.B-1 Relationship of Project to Relevant Plans and Policies

Policy #	Policy	Relationship
Pedestrian Master Plan		
PMP Policy 1.1	**Crossing Safety.** Improve pedestrian crossings in areas of high pedestrian activity where safety is an issue.	The proposed project proposes to install new traffic signals on West MacArthur Boulevard and Telegraph Avenue. Pedestrian crosswalks would be incorporated into the project at these points. In addition, pedestrian crossings would be included at various points on all internal streets proposed as part of the project.
PMP Policy 1.2	**Traffic Signals.** Use traffic signals and their associated features to improve pedestrian safety at dangerous intersections.	The proposed project proposes to install new traffic signals on West MacArthur Boulevard and Telegraph Avenue. Pedestrian crosswalks would be incorporated into the project at these points.
PMP Policy 2.1	**Route Network.** Create and maintain a pedestrian route network that provides direct connections between activity centers.	The proposed project will create an activity center. Features to facilitate pedestrian access, including crosswalks and sidewalks, are incorporated into the proposed project.
PMP Policy 2.3	**Safe Routes to Transit.** Implement pedestrian improvements along major AC Transit lines and at BART stations to strengthen connections to transit.	The proposed project is located along AC Transit lines and is immediately adjacent to a BART station. The proposed project would be designed to improve pedestrian access and would include crosswalks, crosswalk signals, sidewalks, benches, lighting, and other features.
PMP Policy 3.1	**Streetscaping.** Encourage the inclusion of street furniture, landscaping, and art in pedestrian improvement projects.	The proposed project would incorporate benches, trash cans, lighting, and landscaping into the project design. Public art is being considered within the project area (including the BART Plaza).
Bicycle Master Plan		
BMP Policy 1A	Bikeway Network: Develop and improve Oakland's bikeway network	The proposed project includes bicycle connections to the BART station by providing bike lanes on Frontage Road, and bike access along Village Drive and internal streets. A bicycle pathway is also proposed into the project site off of West MacArthur Boulevard.
BMP Policy 1C	Safe Routes to Transit: Improve bicycle access to transit, bicycle parking at transit facilities and bicycle access on transit vehicles.	The proposed project would improve the bicycle routes to the MacArthur BART Station, and incorporate bicycle parking in the improvements to the MacArthur BART Plaza. Additionally, bicycle parking areas would also be provided within the mixed-use buildings and the BART parking garage.

Table IV.B-1 Relationship of Project to Relevant Plans and Policies

Policy #	Policy	Relationship
BMP Policy 3B	Project Development: Prioritize and design bike projects in cooperation with key stakeholders.	The project sponsor, BART and the City have been working together to ensure that safe bicycle access and parking areas are provided within and around the project site.
Open Space, Conservation and Recreation Element		
Policy OS-4.1	**Provision of Useable Open Space.** Continue to require new multi-family development to provide useable outdoor open space for its residents.	The proposed project would incorporate courtyards within the proposed mixed-use/residential buildings and would construct an open plaza next to Building A.
Policy OS-12.1	**Street Tree Selection.** Incorporate a broad and varied range of tree species which is reflected on a city-maintained list of approved trees. Street tree selection should respond to the general environmental conditions at the planting site, including climate and micro-climate, soil types, topography, existing tree planting, maintenance of adequate distance between street trees and other features, the character of existing development, and the size and context of the tree planting area.	The trees planted in association with development of the project would be on the City's list of approved trees.
Policy OS-12.3	**Street Tree Removal.** Remove street trees only if they are hazardous, severely and incurably infested with insects or blight, or are severely and irreversibly damaged and deformed. Provide replacement trees in all cases where the site is suitable for street trees.	All street trees removed as part of the project would require a Tree Removal Permit and would be replaced with trees approved by the City.
Policy CO-1.1	**Soil Loss in New Development**. Regulate development in a manner which protects soil from degradation and misuse or other activities which significantly reduce its ability to support plant and animal life. Design all construction to ensure that soil is well secured so that unnecessary erosion, siltation of streams, and sedimentation of water bodies does not occur.	All appropriate City of Oakland Standard Conditions of Approval regarding filled soils, subsidence, and seismic hazards would be incorporated into the proposed project.
Policy CO-1.2	**Soil Contamination Hazards.** Minimize hazards associated with soil contamination through the appropriate storage and disposal of toxic substances, monitoring of dredging activities, and clean-up of contaminated sites. In this regard, require soil testing for development of any site (or dedication of any parkland or community garden) where contamination is suspected due to prior activities on the site.	The proposed project would incorporate remediation of any hazards identified on the project site. Please see Section IV.H, Public Health and Hazards, for a discussion of the Standard Conditions of Approval that have been incorporated into the proposed project.

Table IV.B-1 Relationship of Project to Relevant Plans and Policies

Policy #	Policy	Relationship
Policy CO-2.2	**Unstable Geologic Features**. Retain geologic features known to be unstable, including serpentine rock, areas of known landsliding, and fault lines, as open space. Where feasible, allow such lands to be used for low-intensity recreational activities.	All appropriate City of Oakland Standard Conditions of Approval regarding filled soils, subsidence, and seismic hazards would be incorporated into the proposed project.
Policy CO-2.3	**Development on Filled Soils.** Require development on filled soils to make special provisions to safeguard against subsidence and seismic hazards.	All appropriate City of Oakland Standard Conditions of Approval regarding filled soils, subsidence, and seismic hazards would be incorporated into the proposed project.
Policy CO-4.2	**Drought-Tolerant Landscaping.** Require use of drought-tolerant plants to the greatest extent possible and encourage the use of irrigation systems which minimize water consumption.	The proposed project would incorporate drought-tolerant plants and an irrigation system into the proposed project.
Policy CO-5.3	**Control of Urban Runoff.** Employ a broad range of strategies, compatible with the Alameda Countywide Clean Water Program, to: (a) reduce water pollution associated with stormwater runoff; (b) reduce water pollution associated with hazardous spills, runoff from hazardous materials areas, improper disposal of household hazardous wastes, illicit dumping, and marina "live-aboards;" and (c) improve water quality in Lake Merritt to enhance the lake's aesthetic, recreational, and ecological functions.	Incorporation of the City's Standard Conditions of Approval related to storm water runoff would reduce the project's potential impacts to water quality.
Policy CO – 7.4	**Tree Removal.** Discourage the removal of large trees on already development sites unless removal is required for biological, public safety, or public works requirements.	All trees currently on the project site would be removed as part of the project. Please see Figure III-11 which shows the proposed landscape plan. Additionally, a tree survey of existing trees on-site is available for review at the Community and Economic Development Agency.
Policy CO-12.1	**Land Use Patterns Which Promote Air Quality.** Promote land use patterns and densities which help improve regional air quality conditions by: (a) minimizing dependence on single passenger autos; (b) promoting projects which minimize quick auto starts and stops, such as live-work development, mixed-use 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.	The proposed project would be developed as a transit village and would encourage alternative modes of transportation other than single-occupancy vehicle. The project would include a mix of uses that would be neighborhood serving, thus reducing potential auto trips to other locations.

Table IV.B-1 Relationship of Project to Relevant Plans and Policies

Policy #	Policy	Relationship
Policy CO-12.4	**Design of Development to Minimize Air Quality Impacts.** Require that development projects be designed in a manner which reduces potential adverse air quality impacts. This may include: (a) the use of vegetation and landscaping to absorb carbon monoxide and to buffer sensitive receptors; (b) the use of low-polluting energy sources and energy conservation measures; (c) designs which encourage transit use and facilitate bicycle and pedestrian travel.	The proposed project is part of the LEED ND pilot project, and would incorporate energy efficient and green building components into the design. The project applicant would implement the City's Standard Conditions of Approval related to construction and grading to minimize air quality impacts. The proposed project is located immediately adjacent to the MacArthur BART station, which would facilitate the use of transit, bicycle and pedestrian travel.
Policy CO-12.6	**Control of Dust Emissions.** Require construction, demolition and grading practices which minimize dust emissions.	The project applicant would implement the City's Standard Conditions of Approval related to construction and grading to minimize air quality impacts.
Policy CO-13.3	**Construction Methods and Materials.** Encourage the use of energy-efficient construction and building materials. Encourage site plans for new development which maximize energy efficiency.	The proposed project is a LEED ND pilot project, and would incorporate energy efficient and green building components into the design and construction.
Noise Element		
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.	As discussed in detail in Section IV.E, Noise, the proposed project will not create a significant increase in noise in the project area given the implementation of Standard Conditions of Approval.
Policy 2	Protect the noise environment by controlling the generation of noise by both stationary and mobile noise sources.	As discussed in detail in Section IV.E, Noise, the proposed project will not create a significant increase in noise in the project area given the implementation of Standard Conditions of Approval.
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.)	Standard Conditions of Approval and Mitigation Measures included in Section IV. E, Noise, would minimize the exposure to noise levels that are received by residents of the project (i.e., noise from vehicles on adjacent street and State Route 24, and the BART Station). The Standard Conditions and Mitigation Measure would also minimize project construction related noise.
Safety Element		
Policy FI-1	Maintain and enhance the City's capacity for emergency response, fire prevention and fire fighting. Action FI-1.2: Strive to meet a goal of responding to fires and other emergencies within seven minutes of notification 90 percent of the time.	The first and second responders to the project site (Fire Stations 8 and 5, respectively) are within less than 1.5 miles of the site, which the OFD considers an acceptable distance to maintain the standard response time.

Table IV.B-1 Relationship of Project to Relevant Plans and Policies

Policy #	Policy	Relationship
Policy GE-1	Develop and continue to enforce and carry out regulations and programs to reduce seismic hazards and hazards from seismically triggered phenomena.	The project will comply with all applicable building codes and all recommendations in the site-specific geotechnical investigations prepared for the site.
Policy GE-2	Continue to enforce ordinances and implement programs that seek specifically to reduce the landslide and erosion hazards.	The potential for erosion as a result of project demolition and construction is addressed in Section IV.F, Hydrology and Water Quality. Compliance with City of Oakland Standard Conditions of Approval and Grading Permit requirements would reduce erosion impacts.
Policy HM-1	Minimize the potential risks to human and environmental health and safety associated with past and present use, handling, storage and disposal of hazardous materials.	The proposed project would incorporate remediation of any hazards identified on the project site. Please see Section IV.H, Public Health and Hazards, for a discussion of the Standard Conditions of Approval and the mitigation measures that have been incorporated into the proposed project.
Policy HM-2	Reduce the public's exposure to toxic air contaminants through appropriate land use and transportation strategies.	The proposed project is located immediately adjacent to the MacArthur BART station, which would facilitate the use of transit, bicycle and pedestrian travel and thus reduce public exposure to toxic air contaminants. The project applicant would implement the City's Standard Conditions of Approval related to construction and grading to minimize air quality impacts.
Policy HM-3	Seek to prevent industrial and transportation accidents involving hazardous materials and enhance the city's capabilities to response to such incidents.	The proposed project seeks to develop residential and commercial space and will not involve the industrial use or transportation of hazardous materials. The proposed project would incorporate remediation of any hazards identified on the project site. Please see Section IV.H, Public Health and Hazards, for a discussion of the Standard Conditions of Approval and the mitigation measures that have been incorporated into the proposed project.
Policy PS-1	Maintain and enhance the city's capacity to prepare for, mitigate, respond to, and recover from disasters and emergencies.	The proposed project is located on underutilized property in an urbanized area. The project would not interfere with City's ability to respond to or recover from emergencies.

Table IV.B-1 Relationship of Project to Relevant Plans and Policies

Policy #	Policy	Relationship
Historic Preservation Element		
Policy 3.8	For the purposes of environmental review under CEQA, the following properties will constitute the City of Oakland's Local Register: • All "Designated Historic Properties," i.e., those properties that are City Landmarks, which contribute to or potentially contribute to Preservation Districts, and Heritage Properties; • Those "Potential Designated Historic Properties" that have an existing rating of "A" or "B" or are located within an "Area of Primary Importance;" • Until complete implementation of Action 2.1.2 (Redesignation), the "Local Register" will also include the following designated properties: Oakland Landmarks, S-7 Preservation Combining Zone properties, and Preservation Study List properties.	There are no "Designated Historic Properties" or "Potentially Historic Designated" properties on the project site. Additionally, none of the properties on-site are included in the "Local Register" meaning Oakland Landmarks, S-7 zoned properties, or properties on the Preservation Study List. A discussion of historic relevancy of properties immediately adjacent to the project is provided in Section IV.K, Cultural Resources.
Policy 3.1	**Avoid or Minimize Adverse Historic Preservation Impacts Related to Discretionary City Actions**. The City will make all reasonable efforts to avoid or minimize adverse effects on the Character-Defining Elements of existing or Potential Designated Historic Properties which could result from private or public projects requiring discretionary actions.	There are no "Designated Historic Properties" or "Potentially Historic Designated" properties on the project site. Additionally, none of the properties on-site are included in the "Local Register" meaning Oakland Landmarks, S-7 zoned properties, or properties on the Preservation Study List. A discussion of historic relevancy of properties immediately adjacent to the project is provided in Section IV.K, Cultural Resources. Compliance with Standard Conditions of Approval would ensure that the project complies with the HPE.
Policy 3.4	**City Acquisition of Historic Preservation Where Necessary**. Where all other means of preservation have been exhausted, the City will consider acquiring, by eminent domain if necessary, existing or Potential Designated Historic Properties, or portions thereof, in order to preserve them. Such acquisition may be in fee, as conservation easements, or a combination thereof.	There are no "Designated Historic Properties" or "Potentially Historic Designated" properties on the project site. Additionally, none of the properties on-site are included in the "Local Register" meaning Oakland Landmarks, S-7 zoned properties, or properties on the Preservation Study List.

Table IV.B-1 Relationship of Project to Relevant Plans and Policies

Policy #	Policy	Relationship
Policy 3.5	**Historic Preservation and Discretionary Permit Approvals**. For any project involving the complete demolition of Heritage Properties or Potential Designated Historic Properties requiring discretionary City permits, the City will make a finding that: 1) the design quality of the proposed project is at least equal to that of the original structure and is compatible with the character of the neighborhood; or 2) the public benefits of the proposed project outweigh the benefit of retaining the original structure; or 3) the existing design is undistinguished and does not warrant retention and the proposed design is compatible with the character of the neighborhood.	There are no “Designated Historic Properties” or “Potentially Historic Designated” properties on the project site. Additionally, none of the properties on-site are included in the “Local Register” meaning Oakland Landmarks, S-7 zoned properties, or properties on the Preservation Study List.
Policy 3.7	**Property Relocation Rather than Demolition**. As a condition of approval for all discretionary projects involving demolition of existing or Potential Designated Historic Properties, the City will normally require that reasonable efforts be made to relocate the properties to an acceptable site.	There are no “Designated Historic Properties” or “Potentially Historic Designated” properties on the project site. Additionally, none of the properties on-site are included in the “Local Register” meaning Oakland Landmarks, S-7 zoned properties, or properties on the Preservation Study List.
Policy 4.1	**Archaeological Resources.** To protect significant archaeological resources, the City will take special measures for discretionary projects involving ground disturbances located in archaeologically sensitive areas. This policy entails that mitigation measures are typically incorporated into the project as part of the environmental review process, which can include a surface reconnaissance by an archaeologist to identify archaeological deposits; monitoring of ground disturbance during construction to identify archaeological resources and stopping work if necessary to provide recommendations for the treatment of uncovered archaeological materials; and performing limited pre-construction archaeological excavations to determine whether archaeological materials are present.	The project area has the potential to contain significant subsurface historical archaeological deposits associated with former buildings on the project site. Compliance with Mitigation Measures and Standard Conditions of Approval provided in Section IV.K, Cultural and Paleontological Resources.

C. TRANSPORTATION, CIRCULATION AND PARKING

This section describes the existing transportation, circulation, and parking conditions, including transit services, and pedestrian and bicycle facilities on the project site and its vicinity, and provides an analysis of the project's potential impacts. Figure IV.C-1 illustrates the location of the proposed project and the local and regional street system. The analysis evaluates the traffic-related impacts of the proposed project during both the weekday morning and evening peak hours. Traffic conditions are assessed at 25 critical intersections in the study area for the following six scenarios:

- ***Existing Conditions*** is based on existing volumes obtained from traffic counts and site and area observations.
- ***Existing Plus Project Conditions*** adds estimated traffic generated by the project to existing volumes; assumes full buildout of the project with 675 residential units, 44,000 square feet of commercial space, and 5,000 square feet of community space.
- ***Cumulative Year 2015 Baseline No Project*** considers existing conditions together with forecast conditions, using the Alameda County Congestion Management Agency's (ACCMA) latest available Countywide Travel Demand Model as modified by the HEG analysis (Appendix E) to generate Year 2015 baseline traffic forecasts. This forecast includes all past and present projects (existing development and under construction projects), and all approved, pending, and reasonably foreseeable future projects through year 2015. The Cumulative Year 2015 Baseline No Project scenario assumes no new development on the project site. This scenario is referred to throughout this section as the Cumulative Year 2015 Baseline No Project conditions.
- ***Cumulative Year 2015 Baseline Plus Project*** adds estimated traffic generated by the project to the Cumulative Year 2015 Baseline No Project volumes; and assumes full buildout of the project.
- ***Cumulative Year 2030 Baseline No Project*** considers existing conditions together with forecast conditions, using the ACCMA latest available Countywide Travel Demand Model as modified by the HEG analysis (Appendix E) to generate Year 2030 baseline traffic forecasts. This forecast includes all past and present projects (existing development and under construction projects), and all approved, pending, and reasonably foreseeable future projects through year 2030. The Cumulative Year 2030 Baseline No Project scenario assumes no new development on the project site. This scenario is referred to throughout this section as the Cumulative Year 2030 Baseline No Project conditions.
- ***Cumulative Year 2030 Baseline Plus Project*** adds estimated traffic generated by the project to the Cumulative Year 2030 Baseline No Project volumes. This scenario assumes full buildout of the project.

FIGURE IV. C-1

MacArthur Transit Village Project EIR
Project Location

SOURCE: FEHR & PEERS, 2007.

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Feasible measures are recommended to improve the project, and where necessary mitigation measures are identified to reduce potential significant impacts to a less-than-significant level.

An assessment of the project's potential effects on transit services and on- and off-site parking, though not considered environmental impacts under CEQA, is also provided. In addition, a focused analysis of Cumulative Year 2030 Baseline Plus Project with the proposed Bus Rapid Transit (BRT) on Telegraph Avenue is also presented for informational purposes. AC Transit published a Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the implementation of the BRT project in May 2007. There are currently no finalized design plans, an assurance of full funding, or approvals from AC Transit, the City of Oakland and other public agencies. Since the BRT improvements are not yet fully designed, funded, or approved, the analysis presented in this EIR does not assume implementation of the BRT project. However, to ensure a comprehensive analysis is provided, a separate analysis of Cumulative Year 2030 Baseline Plus Project Plus BRT is included in Appendix F.

1. Existing Conditions

The existing transportation-related context in which the MacArthur BART Transit Village project would be constructed is described 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. The Existing Conditions subsection also discusses planned transportation improvements in the project vicinity.

a. Study Area. The proposed project site, shown on Figure IV.C-1, is located in the City of Oakland and consists of the area bounded by 40th Street to the north, West MacArthur Boulevard to the south, Telegraph Avenue to the east, and SR-24 to the west. The intersections listed below and illustrated in Figure IV.C-2 were identified as intersections that may be significantly impacted by the proposed project.

1. Shattuck Avenue/52nd Street
2. Telegraph Avenue/52nd Street/ Claremont Avenue
3. Telegraph Avenue/51st Street
4. Martin Luther King Jr. Way/47th Street/Westbound SR-24 On-Ramp
5. Martin Luther King Jr. Way/45th Street
6. Telegraph Avenue/45th Street
14. BART Parking Access/Telegraph Avenue
15. Telegraph Avenue/38th Street
16. Market Street/Macarthur Boulevard
17. West Street/Macarthur Boulevard
18. Martin Luther King Jr. Way/ Macarthur Boulevard
19. Frontage Road/Macarthur Boulevard

7. Market Street/40th Street
8. West Street/40th Street
9. Martin Luther King Jr. Way/40th Street
10. Frontage Road/40th Street
11. BART Parking Access (West)/40th Street
12. BART Parking Access (East)/40th Street
13. Telegraph Avenue/40th Street
20. Telegraph Avenue/Macarthur Boulevard
21. Webster Street/Macarthur Boulevard
22. Broadway/Macarthur Boulevard
23. Telegraph Avenue/34th Street
24. Telegraph Avenue/27th Street
25. Telegraph Avenue/Village Drive (With Project scenarios only)

The study intersections were selected based on a screening analysis using the results of the ACCMA Countywide Travel Demand Model, established trip distribution patterns in the area, and if the proposed project would increase intersection volumes by 30 or more peak hour vehicle trips. Additionally, regardless of the number of trips added by the project, other intersections that would potentially operate at unacceptable conditions during the peak hours were also selected. The final list of study intersections was selected in consultation with City of Oakland's Transportation Services Division. These intersections represent locations along major routes to and from the project site that would be impacted by the proposed project.

All of the study intersections are currently signalized, except the BART station driveway on 40th Street (intersection #10), which is uncontrolled, the BART parking lot access driveways on 40th Street, Telegraph Avenue, and West MacArthur Boulevard (intersections #11, 12, 14, and 19), which are side-street stop-controlled, and the Telegraph Avenue/38th Street intersection (#15), which is side-street stop-controlled.

b. Street Network. Regional access to the project site is provided via SR-24 to the east, Interstate 580 (I-580) to the north and south, and I-980 to the west. 40th Street, West MacArthur Boulevard, Telegraph Avenue, and Martin Luther King Jr. Way provide local access to the site. Under current conditions, local access to the BART station's parking lot and pick-up/drop-off area is provided from 40th Street, West MacArthur Boulevard, and Telegraph Avenue via Apgar Street. Figure IV.C-2 shows the location of the MacArthur BART station and the surrounding roadway system. Figure IV.C-3 details the station vehicle access points and internal circulation system. The regional and local street networks that serve the project site are described below.

(1) Regional Roadways. Regional access to the proposed site is provided via SR-24, I-580 and I-980, as described below.

- ***State Route 24 (SR-24)*** is an eight-lane freeway located directly west of the project site that connects to I-980 at an interchange with I-580. SR-24 has an average daily traffic (ADT) flow of approximately 142,000 vehicles near the project site.[1] From SR-24

[1] Caltrans, 2006 (http://dot.ca.gov/hq/traffops/saferesr/trafdata/2006all.htm).

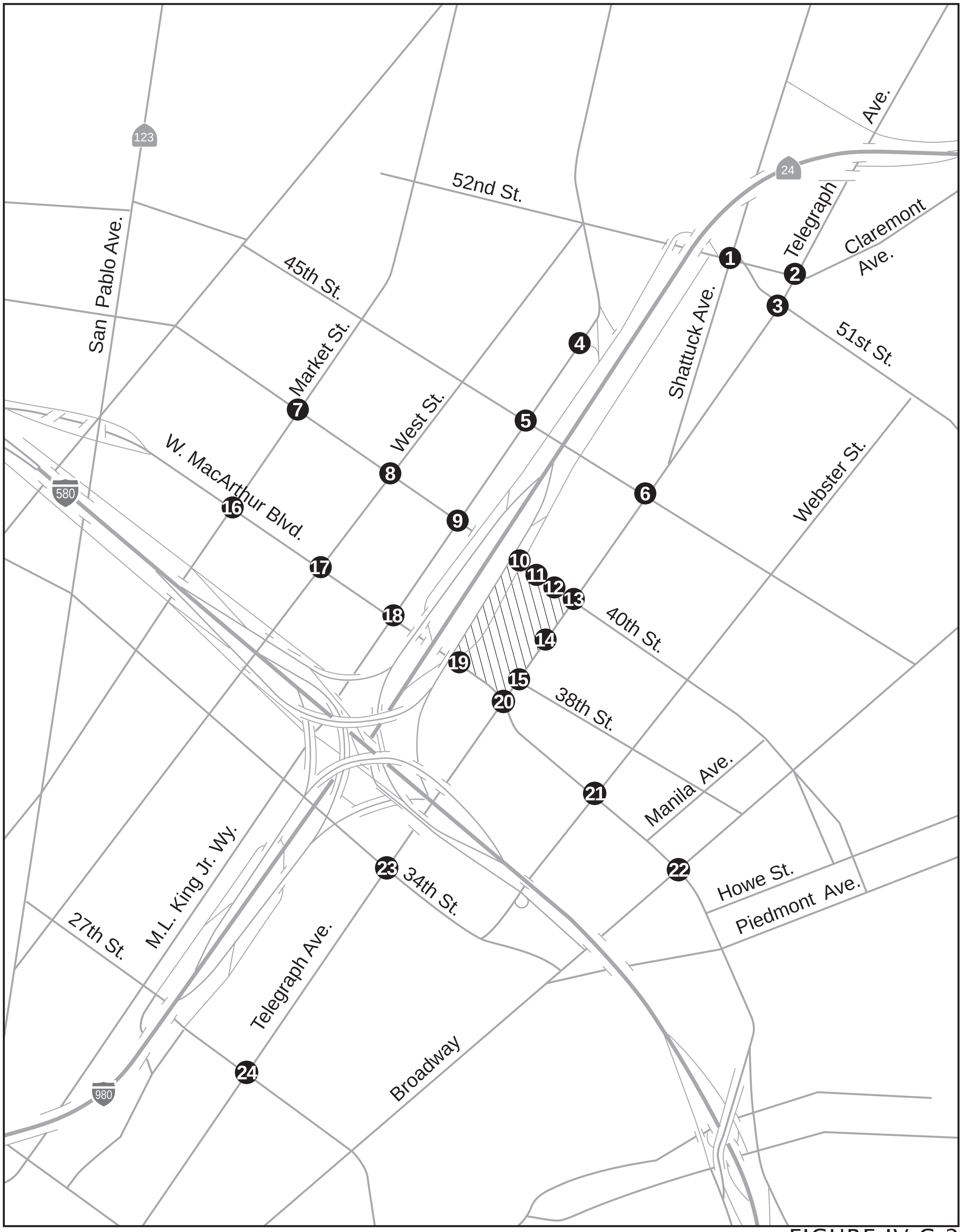

FIGURE IV.C-2

Legend

1 = Study Intersection

= Project Site

MacArthur Transit Village Project EIR

Study Intersections

SOURCE: FEHR & PEERS, 2007

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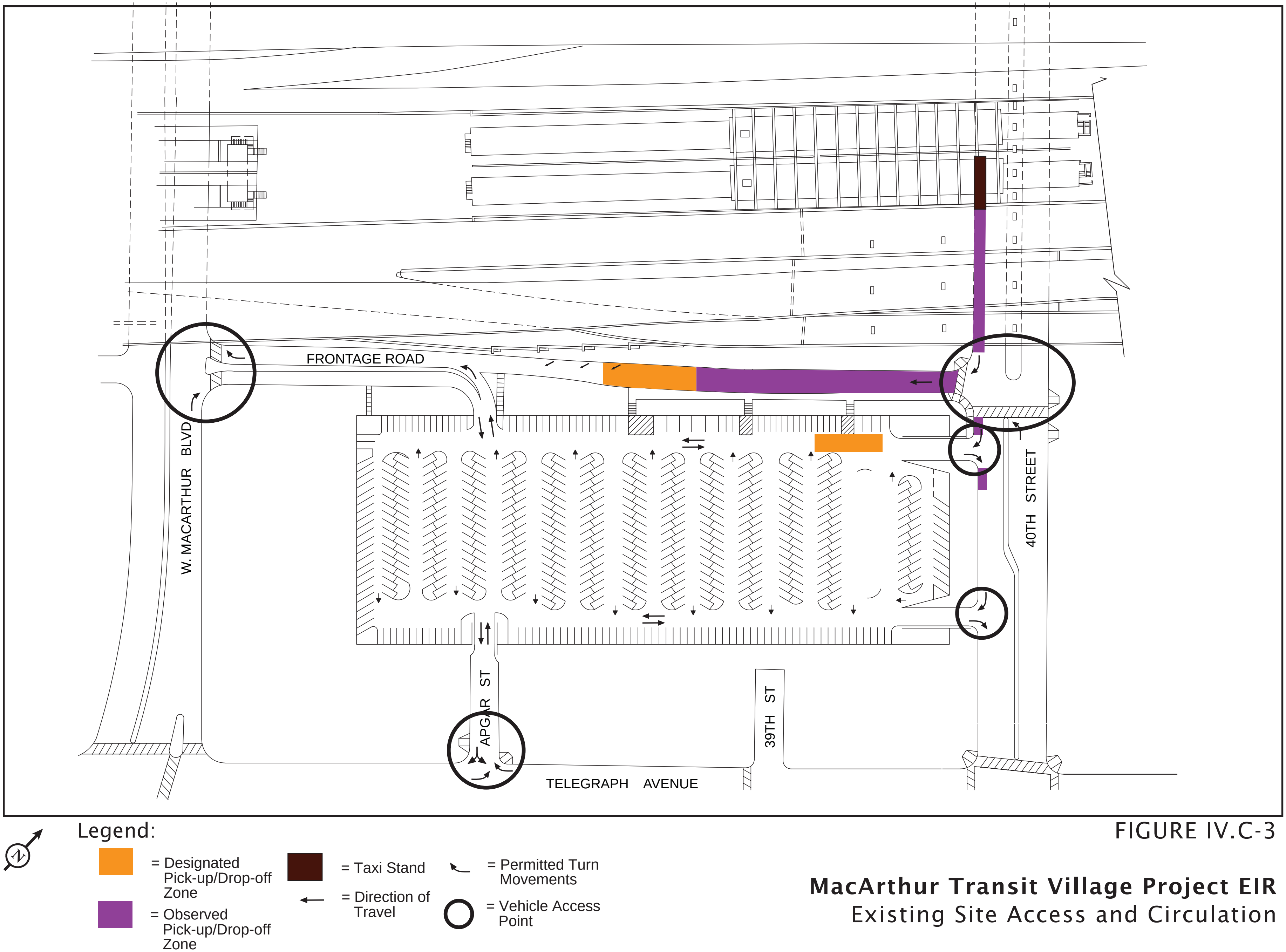


FIGURE IV.C-3

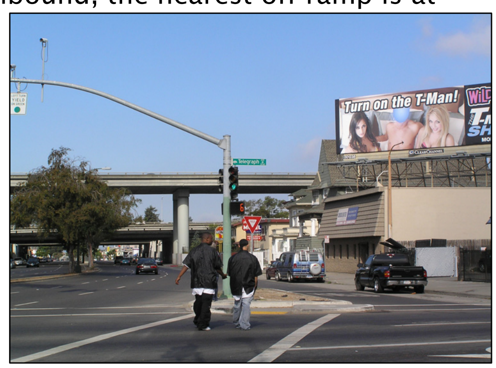
MacArthur Transit Village Project EIR
Existing Site Access and Circulation

SOURCE: FEHR & PEERS, 2007.

eastbound, the nearest off-ramp is at 51^{st} Street near Shattuck Avenue; the nearest on-ramp to SR-24 eastbound is at Telegraph Avenue near 56^{th} Street. From SR-24 westbound, the nearest off-ramp is at Telegraph Avenue at Aileen Street; the nearest on-ramp to SR-24 westbound is on Martin Luther King Jr. Way at 47^{th} Street.

- ***Interstate 580 (I-580)*** is an eight-lane freeway that connects between I-80, near the Bay Bridge to the Tri-Valley area and I-5, further east. I-580 is located just south of the site and has an ADT of approximately 200,000 vehicles near the project site.[2] From I-580 eastbound, the nearest off-ramps are at MacArthur Boulevard near Hollis Street and at Webster Street. The nearest on-ramp to I-580 eastbound is at Market Street near 35^{th} Street, or at 47^{th} Street and Martin Luther King Jr. Way (via SR-24/I-980). From I-580 westbound, the nearest off-ramp is at 36^{th} Street near West Street; the nearest on-ramp to I-580 westbound is at MacArthur Boulevard near Market Street.

- ***Interstate 980 (I-980)*** is an eight-lane freeway located south of the project site that connects to SR-24 at an interchange with I-580. I-980 has an ADT flow of approximately 121,000 vehicles south of the site.[3] From I-980 northbound, the nearest off-ramp is at 51^{st} Street near Shattuck Avenue (via SR-24 eastbound); I-980 northbound becomes SR-24 eastbound north of I-580 and is accessed at Telegraph Avenue and 55^{th} Street.



West MacArthur Boulevard at Telegraph Avenue

The nearest on-ramp from the project to SR-24 westbound/I-980 southbound is at 47^{th} Street and Martin Luther King Jr. Way.

(2) Local Roadways. Key local roadways that provide access to the project site are described below.

- ***West MacArthur Boulevard*** is a major east-west arterial located directly south of the project site that extends between Hollis Street in Emeryville and Estudillo Avenue in San Leandro, generally paralleling I-580. It varies in width from two to six lanes. Adjacent to the project site, it has six lanes, a raised median, and parallel on-street parking on both sides.

- ***40^{th} Street*** is an east-west arterial located directly north of the project site that extends between

40^{th} Street at Telegraph Avenue

[2] Ibid.

[3] Ibid.

Shellmound Avenue in Emeryville and Piedmont Avenue in Oakland. Within the study area, it is four lanes wide with a median that provides left-turn bays at major intersections and on-street parallel parking on both sides along most of its length.

- ***Telegraph Avenue*** is a major north-south arterial located directly east of the project site that extends between Broadway in Downtown Oakland and Bancroft Way, adjacent to the University of California campus in Berkeley. Within the study area, Telegraph Avenue is four lanes wide with left-turn bays at major intersections and on-street parallel parking on both sides.

Telegraph Avenue at 38th Street

- ***Martin Luther King Jr. Way*** is a north-south arterial that extends between West Grand Avenue in Downtown Oakland and Hopkins Street in Berkeley. Martin Luther King Jr. Way is generally four lanes wide with on-street parallel parking on both sides.

- ***Frontage Road*** is a private north-south street on the BART station property adjacent to SR-24. It provides access to the parking lot from West MacArthur Boulevard and has one travel lane in each direction from West MacArthur Boulevard to the parking lot. North of the parking lot, Frontage Road provides one southbound travel lane. No parking is permitted on Frontage Road.

Frontage Road, adjacent to BART Station

- ***Apgar Street*** is a short east-west two-lane local street that connects the MacArthur BART station parking lot to Telegraph Avenue, between 40th Street and West MacArthur Boulevard. Apgar Street continues west of SR-24 freeway towards Emeryville. On-Street parallel parking is provided along both sides of the roadway.

Apgar Street

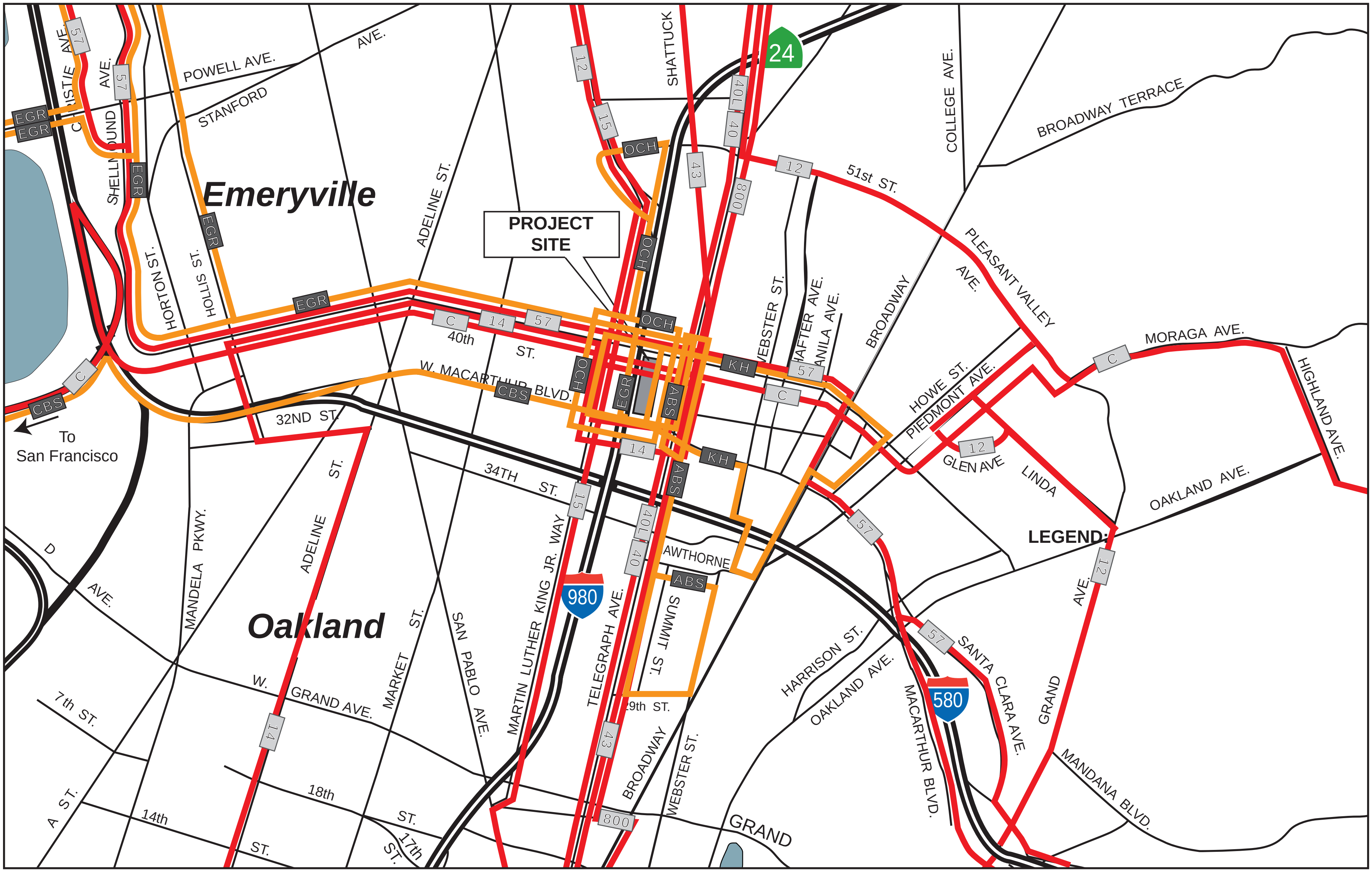
- ***39th Street*** is a short east-west two-lane cul-de-sac connecting to Telegraph Avenue, adjacent to the MacArthur BART Station parking lot. The BART parking lot cannot be accessed from 39th Street. 39th Street continues west of SR-24 to Adeline Street. On-Street parallel parking is provided along both sides of the roadway.

- ***Broadway*** is a major north-south arterial between Water Street at Jack London Square and SR-24. Broadway varies in width from four to six lanes, with six travel lanes near the project site. On-street parallel parking is provided on both sides along most of its length. Bike lanes are provided on Broadway between 23rd Street and MacArthur Boulevard.

- ***West Street*** is a north-south street between 14th Street in Downtown Oakland and 53rd Street/Martin Luther King Jr. Way intersection. In the vicinity of the project, it has four vehicle lanes. South of West MacArthur Boulevard, it has two vehicle lanes with a center two-way left turn lane, bicycle lanes, and on-street parallel parking on both sides of the roadway.
- ***Market Street*** is a north-south street between Embarcadero West in West Oakland and Alcatraz Avenue in South Berkeley (where it becomes Sacramento Street). North of West MacArthur Boulevard, it has two vehicle lanes with a two-way left turn lane bicycle lanes, and on-street parallel parking; South of West MacArthur Boulevard, it has two vehicle lanes with on-street parallel parking on both sides of the roadway.
- ***Shattuck Avenue*** is a north-south street between Telegraph Avenue at 45th Street in Oakland and Indian Rock Avenue in North Berkeley. In the vicinity of the project, it has two vehicle lanes with on-street parallel parking on both sides of the roadway.
- ***27th Street*** is an east-west street between Market Street and Harrison Street. It has three vehicle lanes in each direction, a raised median, and on-street parallel parking on both sides of the roadway along most of its length.
- ***51st Street*** is an east-west street that runs between Shattuck Avenue and Broadway (where it becomes Pleasant Valley Avenue). It has two vehicle lanes in each direction with left turn pockets and a raised median. On-street parallel parking is permitted on both sides of the street.

c. Transit Services. The transit services in the project vicinity include Alameda-Contra Costa Transit District (AC Transit) which provides local and TransBay bus service that provides connections to the TransBay Terminal in San Francisco; the Emery-Go-Round, Kaiser, Summit and Oakland Children's Hospital shuttles; and BART commuter rail service. Figure IV.C-4 shows the AC Transit lines and shuttle services at the MacArthur BART station, and Figure IV.C-5 shows the bus and shuttle stop locations. Each service is described below.

(1) AC Transit. AC Transit provides bus service in 13 cities and adjacent unincorporated areas in Alameda County and Contra Costa County, with TransBay service serving destinations in San Francisco, San Mateo and Santa Clara Counties. Four AC Transit



N
NTS

Legend

ABS = Alta Bates Summit Medical Center

CBS = Caltrans Bicycle Shuttle

EGR = Emery-Go-Round

KH = Kaiser Medical Center

OCH = Oakland Children's Hospital

12 = AC Transit Line

FIGURE IV.C-4

MacArthur Transit Village Project EIR
Transit Service

SOURCE: FEHR & PEERS, 2007

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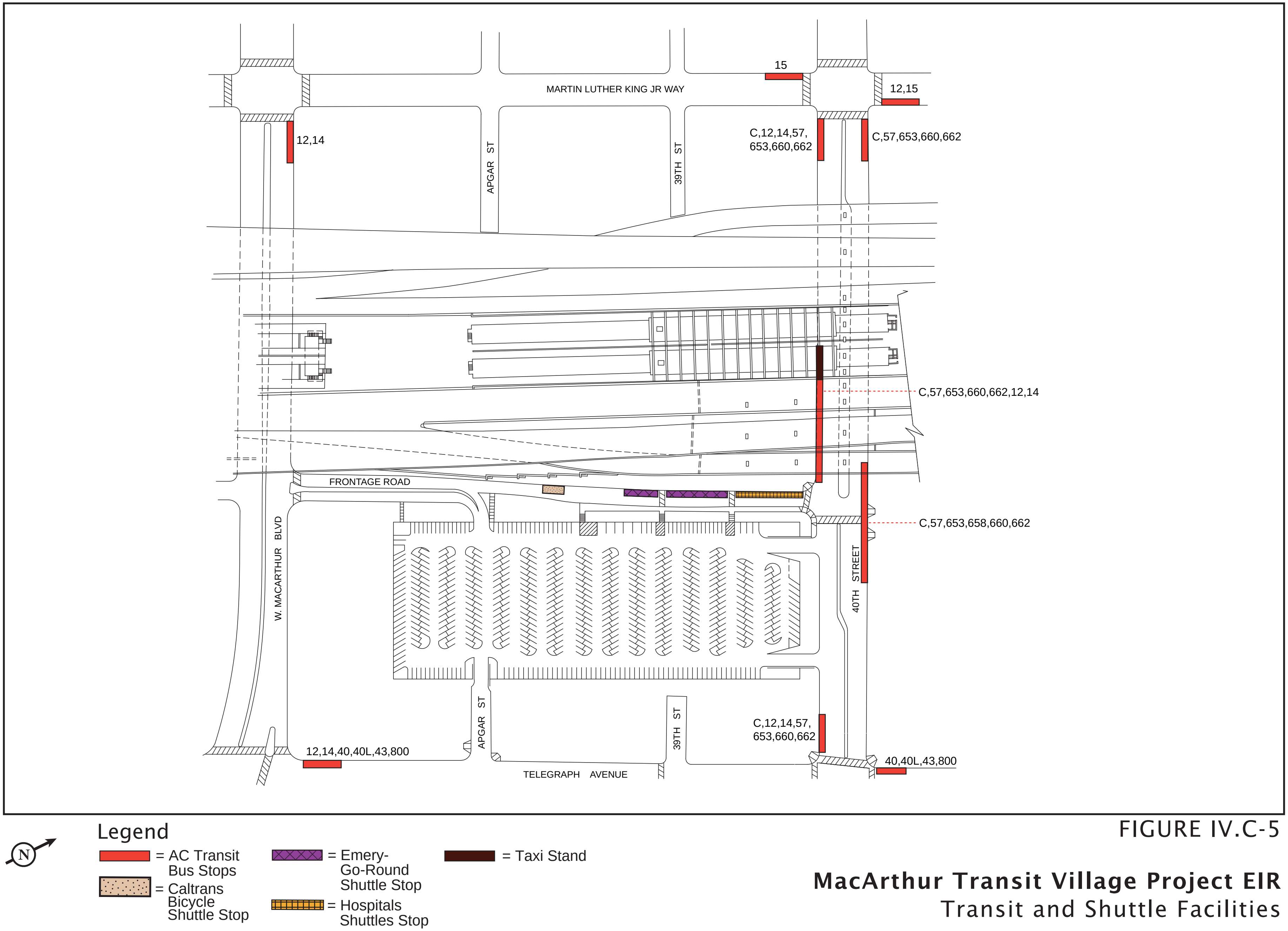

FIGURE IV.C-5

MacArthur Transit Village Project EIR
Transit and Shuttle Facilities

SOURCE: FEHR & PEERS, 2007

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bus lines directly serve the MacArthur BART station. Four more AC Transit bus lines pass within one block of the project site and four AC Transit school bus lines serve the station. All of the AC Transit buses that directly serve the MacArthur BART station stop along 40th Street, under the SR-24 overpass, just north of the BART station fare gates. The characteristics of the AC Transit lines serving the project area are summarized in Table IV.C-1.

Local adult fares, as of August 2007, are $1.75. A $0.25 discount is given with a transfer obtained from machines within the paid area of BART stations. A transfer to other local AC Transit lines is an additional $0.25. Transbay adult fares are $3.50 and provide a free transfer to or from connecting AC Transit lines. Ten- and 30-day passes are also available for both local and Transbay services. Fares are paid on the bus, and passengers must have exact change. AC Transit also honors Translink, a universal fare card, which is planned to be introduced to the entire Bay Area region in the spring of 2008.

AC Transit Ridership. Table IV.C-2 shows the capacity and loads (passengers) of the AC Transit lines serving the project site and vicinity. Average and maximum load factors are also shown in Table IV.C-2. The 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. On average, these lines have excess capacity, with average daily load factors of 58 percent or less. However, maximum loads are at or above capacity on the 40/40L line and the 43 line in both directions in the vicinity of the project.[4] Note that load factors are not available for Lines 1, 1R and 18 as these lines were only begun in June 2007. As a result, load factors are provided for the prior lines 40, 40L and 43, respectively.

Planned Improvements/Bus Rapid Transit. AC Transit plans to ultimately convert the 1R line to a Bus Rapid Transit (BRT) line. The proposed BRT project would improve bus operations by allowing buses to travel on dedicated lanes between Berkeley, Oakland, and San Leandro. In the project vicinity, BRT would generally eliminate one through lane in each direction and narrow Telegraph Avenue to one through lane in each direction. AC Transit published a Draft Environmental Impact Statement / Environmental Impact Report (EIS/EIR) for the implementation of the BRT project in May 2007. There are currently no finalized design plans, an assurance of full funding, or approvals from AC Transit, the City of Oakland and other public agencies. Since the BRT improvements are not yet fully designed,

[4] AC Transit, July 2007.

Table IV.C-1 AC Transit Service Summary

Line	Route	Nearest Stop	Weekday		Weekend		Bus Type
			Hours	Headway	Hours	Headway	
Local Routes							
12 (Grand Avenue)	MacArthur BART station to downtown Oakland	40th Street at MacArthur BART Station	6:00 a.m. to 7:00 p.m.	20 minutes	7:00 a.m. to 7:00 p.m.	30 minutes	30-foot buses with a 30-person seating & 60-person total capacity
14 (East 18th Street)	MacArthur BART station to Dimond District	40th Street at MacArthur BART Station	6:00 a.m. to 7:30 p.m.	15 minutes (peak); 20 minutes (off-peak)	7:00 a.m. to 7:00 p.m.	30 minutes	40-foot buses with a 30-person seating & 60-person total capacity
18 (Shattuck Avenue)[a]	Albany to Montclair District	40th Street at MacArthur BART Station	5:00 a.m. to 12:30 a.m.	15- to 20-minutes	6:00 a.m. to 12:30 p.m.	20 minutes	40-foot buses with a 30-person seating & 60-person total capacity
57 (40th Street)	Emeryville to the Eastmont Transit Center	40th Street at MacArthur BART Station	5:30 a.m. to 12:00 a.m.	12-minutes (daytime); 20-30 minutes (early morning & late night)	6:00 a.m. to 12:00 a.m.	15-minute (daytime); 30-minute (late night)	40-foot buses with a 30-person seating & 60-person total capacity
800 (All Nighter)	Downtown San Francisco to the Richmond BART station	40th Street at MacArthur BART Station	12:20 a.m. to 5:20 a.m. (weekdays & Saturdays)	60 minutes	12:20 a.m. to 7:20 a.m. (Sundays)	60 minutes	40-foot buses with a 30-person seating & 60-person total capacity
1 (Telegraph)[b]	Downtown Berkeley to the Bay Fair BART station	40th Street/ Telegraph Avenue	5:00 a.m. to 1:00 a.m.	15-20-minutes	5:00 a.m. to 1:00 a.m.	15- to 20-minutes	60-foot articulated buses with a 40-person seating & 80- person total capacity
1R (Telegraph/ International Boulevard Rapid)[c]	Downtown Berkeley to the Bay Fair BART station (limited stops)	40th Street/ Telegraph Avenue	6:00 a.m. to 8:30 p.m.	12-minutes	7:30 a.m. to 7:00 p.m.	15-minutes	
15 (Martin Luther King, Jr. Way)	Downtown Berkeley & Downtown Oakland	40th Street/ Martin Luther King Jr. Way	6:00 a.m. to 9:30 p.m.	20 minutes (daytime); 30 minutes (evening)	6:30 a.m. to 10:30 p.m.	20 minutes (daytime); 30 minutes (evening)	40-foot buses with a 30-person seating & 60-person total capacity
Other Routes							
C (Moraga Avenue)	Piedmont to Downtown San Francisco	40th Street at MacArthur BART Station	5:55 a.m. to 8:55 a.m.	30 minutes	3:39 p.m. to 8:24 p.m.	30 minutes	40-foot buses with a 30-person seating & 60-person total capacity
School Service	Montera Middle School (Lines 653 & 660); Skyline High School (Lines 658 & 662)	40th Street at MacArthur BART Station	One bus per day in each direction		No service		40-foot buses with a 30-person seating & 55-person total capacity

[a] Line 43 before June 2007
[b] Line 40 before June 2007
[c] Line 40L before June 2007. The 1R line is planned to ultimately become a Bus Rapid Transit (BRT) line. The proposed BRT is currently under environmental review by AC Transit and the Federal Transit Administration.

Source: AC Transit, July 2007.

Table IV.C-2 AC Transit Loads, Boardings and Alightings (Average Weekday)

Bus Line	Stop Location	Direction	Average Capacity (Seats)	Avg. Load[a]	Avg. Load Factor[b]	Maximum Load[c]	Max. Load Factor[d]	Boardings (On's)[e]	Alightings (Off's)[f]
12	MacArthur BART Station	EB	30	3.5	12%	7	23%	116	0
		WB		0.2	1%	1	3%	0	99
14	MacArthur BART Station	EB	30	3.4	11%	6	20%	135	0
		WB		0.4	1%	5	17%	0	119
15	on MLK Jr. Way at 40th Street	EB	30	9.9	33%	19	63%	50	68
		WB		9.3	31%	21	70%	62	46
15	on MLK Jr. Way at W. MacArthur Blvd.	EB	30	10.2	34%	19	63%	24	10
		WB		9.0	30%	20	67%	6	15
40/ 40L[g]	on Telegraph Ave. at 40th Street	SB	40	19.0	48%	**50**	**125%**	121	154
		NB		21.0	53%	**52**	**130%**	159	124
40/ 40L[g]	on Telegraph Ave. at MacArthur Blvd/38th St.[h]	SB	40	19.3	48%	**57**	**143%**	50	29
		NB		20.5	51%	**47**	**118%**	29	50
43[g]	on Telegraph Ave. at 40th Street	SB	30	12.3	41%	**30**	**100%**	97	92
		NB		17.5	58%	**60**	**200%**	151	95
43[g]	on Telegraph Ave. at MacArthur Blvd/38th St.[h]	SB	30	12.5	42%	**30**	**100%**	31	20
		NB		16.6	55%	**59**	**197%**	31	40
57	MacArthur BART Station	EB	30	12.6	42%	22	73%	300	119
		WB		10.1	34%	25	83%	101	205
800	on Telegraph Ave. at 40th Street	EB	30	8.9	30%	14	47%	1	3
		WB		6.9	23%	10	33%	1	1
800	on Telegraph Ave. at MacArthur Blvd./38th St.[i]	EB	30	9.3	31%	15	50%	1	3
		WB		6.8	23%	10	33%	1	1
C	MacArthur BART Station	EB	30	7.0	23%	16	53%	7	5
		WB		8.5	28%	13	43%	4	13

Bold indicates maximum load factor above seating capacity.
[a] Number of passengers on the bus averaged on a typical weekday.
[b] Average load divided by average seated capacity.
[c] Maximum number of passengers on the bus observed on a typical weekday.
[d] Maximum load divided by average seated capacity.
[e] Total number of passengers boarding the bus at this location on a typical weekday.
[f] Total number of passengers alighting the bus at this location on a typical weekday.
[g] Lines 40 and 40L were replaced by Lines 1/1R in June 2007 and Line 43 was replaced by Line 18. Since ridership data for Lines 1, 1R, and 18 are not available, the existing data for Lines 1/1R and 18 are shown.
[h] Lines 40-40L and 43 southbound buses stop at MacArthur Boulevard.; northbound buses stop at 38th Street.
[i] Line 800 westbound buses stop at MacArthur Boulevard.; eastbound buses stop at 38th Street.

Source: Data collected June 2006 – June 2007 and provided by Howard Der, AC Transit, July 2007.

funded, or approved, the analysis included in this section does not assume implementation of the BRT project. However, to ensure a comprehensive analysis is provided, a separate analysis of Cumulative Year 2030 Baseline Plus Project Plus BRT is included in Appendix F.

(2) Shuttle Services. Five shuttle services directly serve the MacArthur BART station: the Emery-Go-Round, the Kaiser Hospital shuttle, the Summit Hospital shuttle, the Oakland Children's Hospital shuttle, and the Caltrans bicycle shuttle (see Figure IV.C-4). They are all free except for the Caltrans bicycle shuttle. The Emery-Go-Round, Kaiser, Summit and Oakland Children's Hospital shuttles currently stop along the Frontage Road east of the BART station fare gates. The shuttles provide connections from the MacArthur BART station to surrounding hospitals, businesses, residences and shopping areas. Each shuttle service is described in more detail below. The Caltrans bicycle shuttle also stops along the Frontage Road, southeast of the fare gates during peak hours when bikes are not permitted on BART trains.

Emery-Go-Round. The Emery-Go-Round shuttle connects the MacArthur BART station with destinations within the City of Emeryville. As of October, 2007, there are six routes that serve the MacArthur BART station on weekdays and a single route on weekends. On weekdays, the BART Shopper, Hollis Amtrak, Hollis North, Watergate Express, Powell, and Hollis Routes operate between the MacArthur BART station and destinations including the East Bay Bridge shopping area, major employers such as Pixar and Novartis, the Emeryville Amtrak station, the Watergate condominium complex, IKEA, and residential areas. On weekends, the BART Shopper route operates between the MacArthur BART station and the Emeryville Public Market on 40th Street, Shellmound Street, and Christie Avenue. The travel time between the MacArthur BART station and the Emeryville shopping district is approximately 15 minutes.

The Hollis Amtrak, Hollis North, and Watergate Express shuttles operate on weekdays only between 7:00 a.m. and 7:00 p.m., with 12-minute headways during peak hours and 20-minute headways during the mid-day. The Powell and Hollis routes operate on weekdays only from 5:45 a.m. to 7:00 a.m. and from 7:00 p.m. to 10:00 p.m., with service every 20 to 40 minutes. The BART Shopper operates on weekdays between 7:00 a.m. and 7:00 p.m., with 12-minute headways during peak hours and 15-minute headways during the mid-day; on Saturdays between 9:30 a.m. and 9:30 p.m. with 30- to 40-minute headways; and on Sundays between 10:30 a.m. and 6:00 p.m. with 40 minute headways.[5]

Emery-Go-Round buses are equipped with NextBus technology, which allows patrons to access the real-time location or estimated arrival times of vehicles from the internet or mobile devices. Emery-Go-Round has plans to install a NextBus sign at the MacArthur BART station to display the estimated arrival time of the Hollis and Powell shuttles. Emery-Go-

[5] Emery-Go-Round website as of October 2007.

Round is operated with 35-foot vehicles that carry approximately 45 passengers. Emery-Go-Round buses layover along the south side of 40th Street, east of Martin Luther King Jr. Way. During peak periods, the Emery-Go-Round shuttles are over capacity and require some patrons to stand. Data from the *2005 BayCap BART Shuttle Rider Survey*[6] indicates that the Emery-Go-Round shuttle is the largest BART shuttle service, carrying approximately 850,000 annual passengers, with 80 percent of weekday passengers beginning or ending their shuttle trip at the MacArthur BART station.

Kaiser Medical Center. Kaiser Medical Center operates a free shuttle to serve its main hospital on Howe Street and the Mosswood Building on Broadway near I-580. Shuttles operate every 15 minutes from 5:30 a.m. to 11:45 p.m. on weekdays only and have an estimated travel time of 10 minutes. The service is operated by a minibus with a 22-person capacity. The shuttles, which are available to the general public, currently transport about 1,200 passengers each day. Kaiser plans to increase the shuttle service to serve new buildings planned as part of their expansion project in the next few years.

Oakland Children's Hospital. Free shuttle service is provided between the MacArthur BART station and Oakland Children's Hospital at 52nd Street and Martin Luther King Jr. Way. The service operates on weekdays only from 6:00 a.m. to 12:00 a.m. with headways between 8 and 15 minutes. The service uses 15-passenger vans and has an estimated travel time of 10 minutes. The shuttles currently transport about 450 passengers each day.

Summit Medical Center. Summit Medical Center operates a free shuttle for employees and visitors between the MacArthur BART station and the Summit Medical Center Campus, located between Telegraph Avenue and Broadway, just south of I-580. The service operates from 5:30 a.m. to 9:00 p.m. every 15 minutes on weekdays only, and has an estimated travel time of 10 minutes. The Summit Medical Center also operates a shuttle between the Oakland Campus and the Berkeley Alta Bates Medical Center Campus with a stop at the MacArthur BART Station between 6:30 a.m. and 1:00 a.m. every 20 minutes on weekdays. The service is operated using 15-seat passenger vans. The Summit Medical Center shuttles, which can also used by the general public, currently transport about 500 passengers each day to and from the MacArthur BART Station.[7]

Caltrans Bicycle Shuttle. Caltrans District 4 operates the San Francisco-Oakland Bay Bridge Bicycle Shuttle between the MacArthur BART station, the Bay Bridge Bus Stop on Treasure Island, and the Transbay Terminal in Downtown San Francisco to transport cyclists across the Bay when bicycles are prohibited on BART trains (bicycles are prohibited on the Bay Bridge at all times). The Caltrans shuttle costs $1.00 per direction of travel. In the

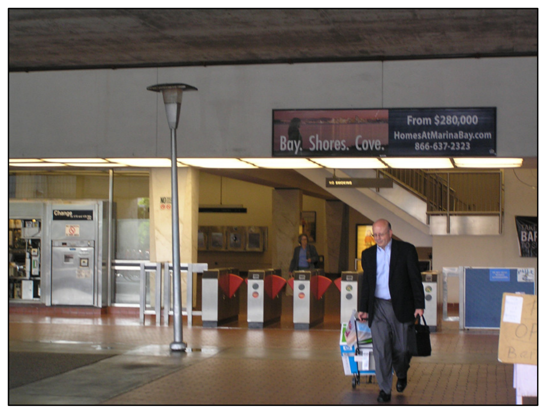
[6] Bay Area Air Quality Management District, 2005.

[7] Information provided by the Alta Bates Summit Medical Center Parking and Transportation Department in December 2007.

morning, four shuttles leave from the MacArthur BART station for San Francisco (at 6:20 a.m., 7:00 a.m., 7:45 a.m. and 8:30 a.m.) and three leave from San Francisco for Oakland (at 6:40 a.m., 7:25 a.m., and 8:10 a.m.). In the evening, three shuttles leave San Francisco for the MacArthur BART station (at 4:15 p.m., 5:05 p.m. and 5:55 p.m.) and four shuttles leave Oakland for San Francisco (at 3:50 p.m., 4:40 p.m., 5:30 p.m., and 6:15 p.m. The service is operated by a 15-passenger van pulling a trailer that holds 15 bicycles.

(3) BART. BART is the regional rapid transit provider and connects the study area to other parts of Alameda County, Contra Costa County, San Francisco, and northern San Mateo County. The BART system operates trains along five routes: (1) Richmond-Fremont; (2) Richmond-Daly City; (3) Millbrae-Dublin/Pleasanton; (4) Daly City-Pittsburg/Bay Point; and (5) Fremont-Daly City. A total of 43 stations are served by BART.

The MacArthur BART station is located at 555 40th Street, within the MacArthur Transit Village project area. Opened in 1972 adjacent to a 7.6-acre parking lot and Frontage Road, the station has two platforms and serves as a timed transfer facility for trains on the Richmond-Fremont and Daly City-Pittsburg/Bay Point lines. The MacArthur BART station is the central hub and transfer point of the entire BART system. Approximately 430 trains per day pass through the station providing service to many parts of the Bay Area, including downtown Oakland (3 minutes), downtown San Francisco (16 minutes) and the San Francisco International Airport (54 minutes).



Fare Gates

During weekday peak commute periods, patrons at the MacArthur BART station can directly access trains to all other BART stations except Castro Valley, Dublin/Pleasanton, and San Francisco Peninsula stations south of Daly City. Access to these stations requires a transfer at the Bay Fair (Castro Valley and Dublin/Pleasanton) or Balboa Park (San Francisco Peninsula) stations.

Train service at the MacArthur BART station is provided from 4:30 a.m. to 12:45 a.m. on weekdays with each line serving the station operating at typical headways of 15 minutes throughout the day. During the weekday AM peak commute period (6:00 a.m. to 9:00 a.m.), headways to San Francisco range from 2 to 8 minutes. On weekends, service is provided from 6:15 a.m. (8:00 a.m. on Sundays) to 12:45 a.m. with typical headways of 15 to 20 minutes. Headways for all trains serving the MacArthur BART station are shown in Table IV.C-3.


BART Plaza

As shown on Figure IV.C-6, the station is elevated and located in the SR-24 median. Underneath the station platforms is a covered concourse that houses fare gates, a passenger waiting area, bathrooms, and service rooms dedicated for BART staff and services. Patrons can access the train platforms via two elevators, four escalators, and four staircases. The ticket machines, station agent booth, and fare gates are located on the south side of 40th Street and open into a public plaza that is covered by SR-24 off-ramps and provides bicycle storage facilities and transit waiting areas. Add-fare machines, BART schedules, restrooms, and employee support facilities are located within the paid area.

A secondary entrance is located across 40th Street from the fare gate area. This was the location of the original elevators to the platforms, but they are no longer in public use and there is no station agent at the location. A past enhancement project added elevators from the main station entrance to the platforms, so this entrance is now closed for general use, but serves as an emergency exit.

The BART train level consists of twin platforms and four tracks. Westbound and southbound trains to San Francisco or Fremont use the pair of tracks accessible from the western platform, and east- and northbound trains to Richmond or Pittsburg/Bay Point use the pair of tracks accessible from the eastern platform. Platform canopies cover the middle third of the platform length. To cross between platforms, patrons must go down to the ground-level and then back up to the opposite platform.

There is a frontage road adjacent to the plaza that parallels SR-24 and serves as an area for pick-up/drop-offs and shuttle stops. Adjacent to the frontage road is a 618-space depressed surface parking lot that is accessible from 40th Street, West MacArthur Boulevard, and Telegraph Avenue via Apgar Street.

(1) BART Ridership. The average number of patrons with trips originating at the MacArthur BART station in May 2006 was approximately 1,620 during the morning peak period (7:00 to 9:00 a.m.), and 1,080 during the evening peak period (4:00 to 6:00 p.m.). There were approximately 6,740 total daily boardings at the station. Table IV.C-4 presents peak hour loading for each BART line.

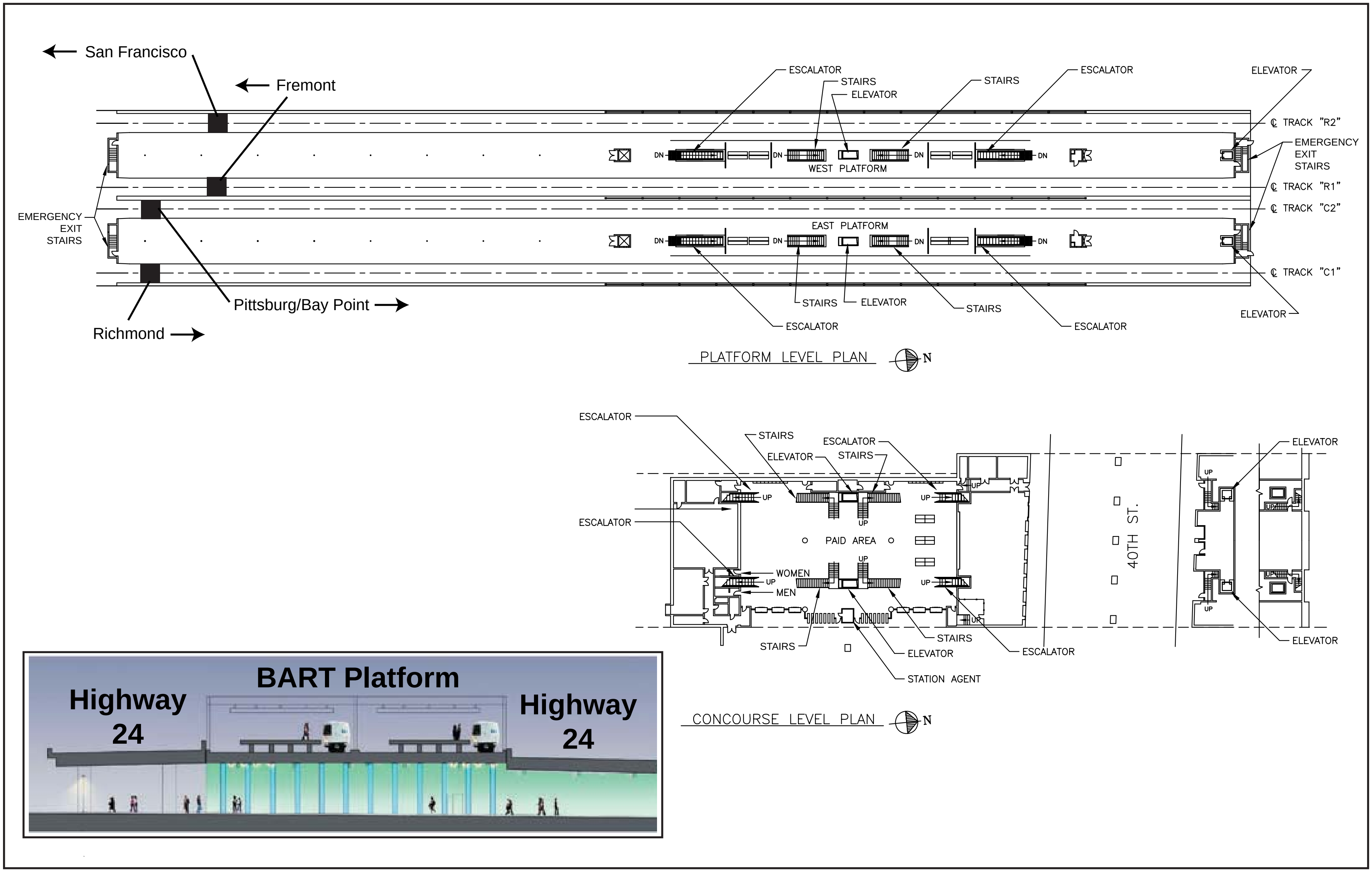


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FIGURE IV.C-6

MacArthur Transit Village Project EIR
MacArthur Bart Station Layout

SOURCE: FEHR & PEERS, 2007

Table IV.C-3 MacArthur BART Station Train Schedule[a]

Line		Headway (Minutes)				
		Weekday			Weekend	
Origin	Destination	AM Commute Period	PM Commute Period	Daily	Saturday (Daily)	Sunday (Daily)
Richmond	Daly City	15	15	15	20	No Service
Daly City	Richmond	15	15	15	20	No Service
Richmond	Fremont	15	15	15	15-20	15
Fremont	Richmond	15	15	15	15-20	15
Pittsburg/Bay Point	SFO	7	12	15	15-20	15
SFO	Pittsburg/Bay Point	10	7	15	15-20	15

[a] BART schedule as of January 1, 2008.

Source: BART, 2007.

There are a total of eight fare gates at the MacArthur BART station. In the morning, four of these are entrances and four are exits. In the evening, three are entrances and five are exits. Table IV.C-5 shows average and maximum queues at the exiting gates.[8] In general, exiting gates experience longer queues because they are more platooned due to train arrival patterns, whereas entering passengers are more evenly distributed.

(2) Access Mode Shares. MacArthur BART station platform intercept surveys were conducted in May 2006.[9] Patron mode of access data is shown in Table IV.C-6. Approximately 1,000 patrons were surveyed over a two-day period.

Table IV.C-4 Peak Hour Load Factors by Line at MacArthur BART Station

Line	Total Capacity (Passengers/Car)[a]	Maximum Load Peak Hour	Maximum Load (Passengers/Car)
Pittsburg/Bay Point-Daly City	92	8:00 a.m.	**114**
Daly City-Pittsburg/Bay Point	92	4:00 p.m.	**106**
Colma/Daly City-Richmond	92	5:00 p.m.	**99**
Fremont-Richmond	92	5:00 p.m.	92
Richmond-Daly City/Colma	92	8:00 a.m.	**101**
Richmond-Fremont	92	5:00 p.m.	58

[a] **Bold** indicates maximum load above capacity.
Total capacity includes 67 seated and 25 standing passengers.

Source: September 2007 data provided by BART in January 2008.

[8] Observed by Fehr & Peers in May 2006.

[9] Behavioral and demographic Intercept survey conducted on May 9 and 10, 2006 between 6:30 AM and 9:30 PM on MacArthur BART station platforms.

When all day access mode shares at the MacArthur BART station are compared to all day access mode shares system wide, it is apparent that patrons who access the MacArthur BART station use personal vehicles less than typical BART patrons. The MacArthur BART station walk, bicycle and transit combined access mode share is 75 percent compared to 46 percent for the entire BART system. The drive-alone access mode share is 10 percent for the MacArthur BART Station compared to 38 percent for the entire system. The low level of drive alone access is attributable to the urban development intensities surrounding the station, which promotes walking; the surrounding bicycle network, which promotes bicycling; and the many transit and shuttle services that frequently serve the station, which promote transit use.

Table IV.C-5 MacArthur BART Station Fare Gate Queues (AM and PM Peak Periods)

	AM Peak Period (Exiting Gates)		PM Peak Period (Exiting Gates)	
	Queue Length (Persons)	Delay (Seconds)	Queue Length (Persons)	Delay (Seconds)
Average	6	13	6	13
Maximum	12	21	11	23

Source: Fehr & Peers, 2006.

Table IV.C-6 MacArthur BART Station and Systemwide All Day Access Mode Shares

Access Mode	Systemwide – 1998 (%)	MacArthur BART Station – 2006 (%/Boardings)
Walk	23%	29% / 1,954
Transit (AC Transit)	21%	10% / 658
Transit (Shuttles)		29% / 1,971
Bicycle	2%	7% / 472
Drop-Off	16%	14% / 939
Carpool & Taxi		1% / 72
Drive Alone	38%	10% / 674
Total	100%	100% / 6,740

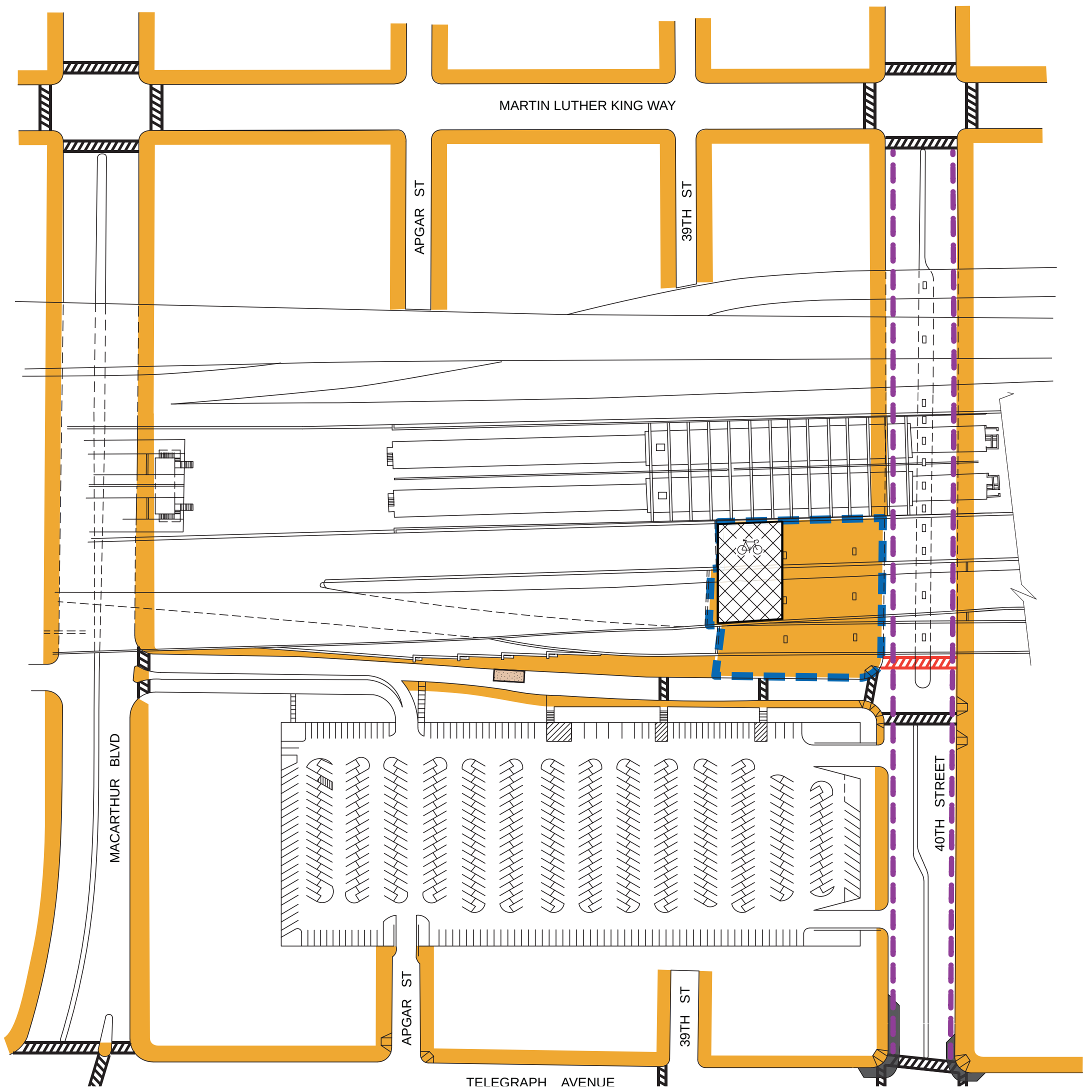
Source: BART, 2000 and Fehr & Peers, 2006.

d. Pedestrian and Bicycle Facilities.

(1) Pedestrian Facilities. Pedestrian circulation on-site and surrounding the station is provided via sidewalks and marked crosswalks, as shown on Figure IV.C-7.

The City of Oakland's *Pedestrian Master Plan* (November 2002) designates MacArthur Boulevard, Market Street, Martin Luther King Jr. Way, Telegraph Avenue, Broadway, and 51st Street as City Routes, and 40th Street, West Street, and Shattuck Avenue as District Routes. According to the plan:

> "City routes designate streets that are destinations in themselves – places to live, work, shop, socialize, and travel. They provide the most direct connections between walking and transit and connect multiple districts in the City. District routes have a more local function as the location of schools, community centers, and smaller scale shopping. They are often located within a single district and help to define the character of that district." (*Oakland Pedestrian Master Plan*, page 48)



SOURCE: Plans for 40th Street, MacArthur Transit Hub Improvements (City of Oakland, July 2006)

Legend

Bicycle Facilities

= Bicycle Parking Area

= Planned Class II Bicycle Lanes

= Caltrans Bicycle Shuttle Stop

Pedestrian Facilities

= Existing Sidewalk

= Existing Crosswalk

= Planned Bulb-out

= Planned Crosswalk

= Station Plaza

= Stairs

SOURCE: FEHR & PEERS, 2007

FIGURE IV.C-7

MacArthur Transit Village Project EIR

Existing Bicycle and Pedestrian Facilities

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The pedestrian facilities in the surrounding neighborhood are typical of an urban environment. All of the surrounding streets provide sidewalks and marked crosswalks at intersections with major roadways. Pedestrian signal heads, audible warnings, and pedestrian push buttons are provided at most signalized intersections. All of the signalized intersections surrounding the MacArthur BART station have pedestrian signal heads and marked crosswalks. There are also marked crosswalks at the uncontrolled 40th Street/ Frontage Road intersection.

Since the street network is a grid, the pedestrian facilities provide a number of routes to and from the MacArthur BART station, although access is limited underneath SR-24 and the BART line. SR-24, which is elevated, limits the east-west pedestrian connections within a quarter-mile of the station to three roadways: 42nd Street, 40th Street, and West MacArthur Boulevard.

While the typical sidewalk widths surrounding the station exceed Americans with Disabilities (ADA) minimum width requirements, ADA standards for ramps and side-slopes are not met at all intersections. Additionally, the sidewalk width near bus stops, particularly at the 40th Street/Telegraph Avenue intersection, is inadequate and creates crowding issues.

There are a number of sidewalk locations with uneven surfaces. The overall walkability of the area also suffers from a lack of street plantings and pedestrian-level lighting. The poor walkability is especially evident along sections of 40th Street and West MacArthur Boulevard under SR-24, which are dark, loud, and littered. Access to the BART entrance from the neighborhood south of West MacArthur Boulevard is limited, as there are no marked crosswalks between Telegraph Avenue and Martin Luther King Jr. Way. Pedestrians were observed illegally crossing West MacArthur Boulevard to the BART station between these intersections, using the median as a refuge.[10]

On-Site. Within the MacArthur BART station, ADA compliant sidewalks are provided along both sides of the Frontage Road and the north side of the parking lot. As in the surrounding area, while the typical sidewalk widths on-site exceed ADA minimum widths, there are sections along the Frontage Road in front of the shuttle stops that are narrow and present crowding issues.

Within the parking lot, there are no designated pedestrian routes; patrons walk along the parking aisles. There are three stairways that connect the parking lot, which is approximately 5 to 13 feet below grade, to the Frontage Road and BART Plaza.

[10] Observation by Fehr & Peers in July 2007.

Because the parking lot is below grade and parking spaces closest to the BART plaza require using stairs, the ADA accessible parking spaces are located approximately 280 feet south of the fare gate plaza along the south side of Frontage Road, as shown on Figure IV.C-8.

The primary access between these parking spaces and the BART plaza is a gently sloped sidewalk located on the east side of the Frontage Road.

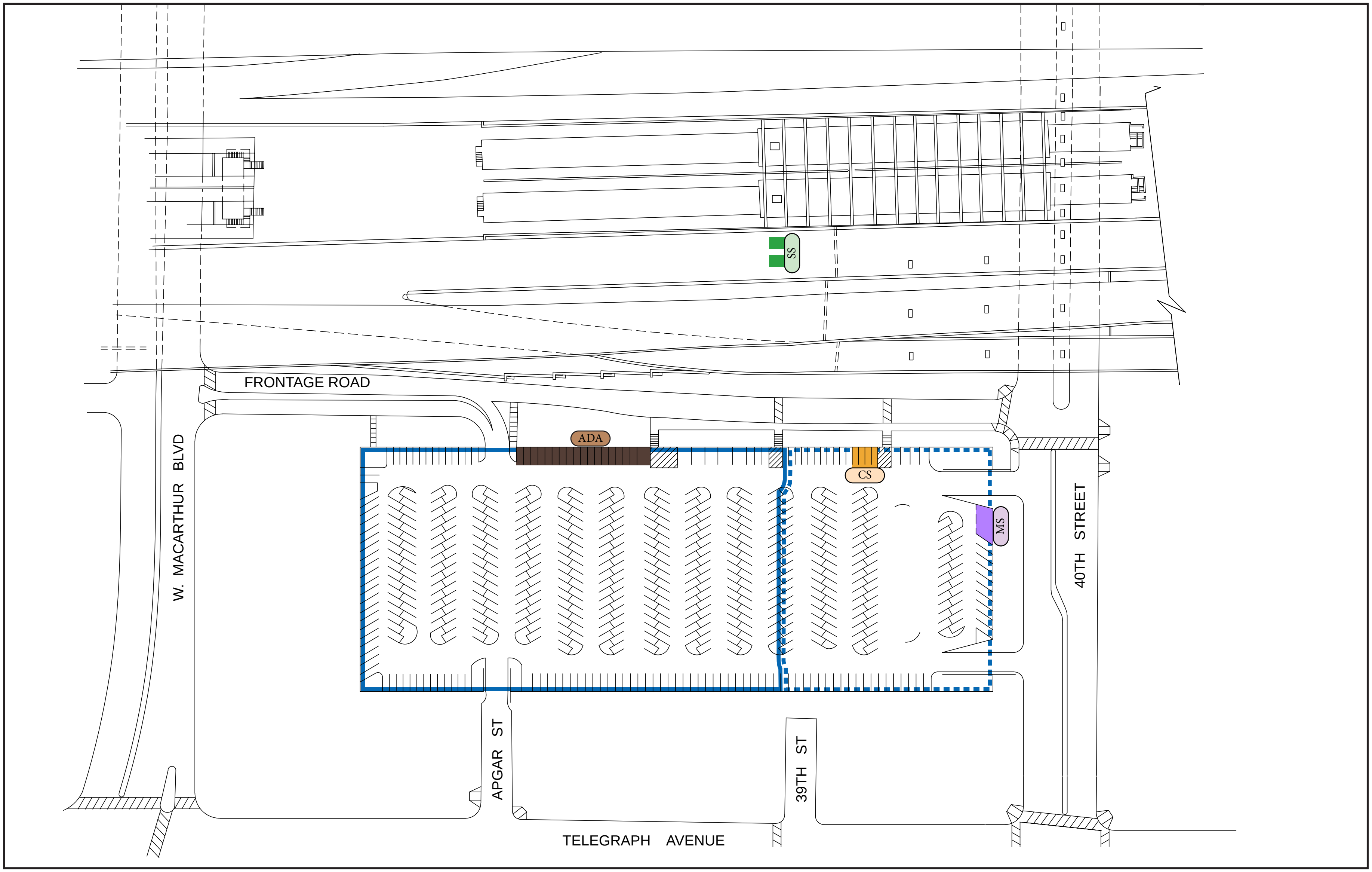
Pedestrian Usage. AM and PM peak period (7:00 - 9:00 a.m. and 4:00 - 6:00 p.m.) pedestrian counts were taken at intersections surrounding the MacArthur BART station in May 2006. Existing pedestrian counts and the designated pedestrian routes in the project area are shown on Figure IV.C-9.

(2) Bicycle Facilities. Oakland's climate and topography are very good for bicycling and the grid pattern of the streets, especially around the MacArthur BART station, provides numerous potential routes. The City of Oakland is working to increase bicycle access throughout the City by building new and improving existing bicycle facilities, as detailed in the recently approved *2007 Oakland Bicycle Master Plan Update,*. In addition, the Alameda County Congestion Management Agency (ACCMA)'s *2006 Countywide Bicycle Plan* highlights proposed regional bicycle facilities.

Bicycle facilities can be classified into several types, including:

- Class I Paths – These facilities are located off-street and can serve both bicyclists and pedestrians. Class I paths are typically 8 to 12 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 and are also provided on low-volume streets that have no bicycle lanes. The street is then designated as a bicycle route through the use of signage informing drivers to expect bicyclists. The *2007 Oakland Bicycle Master Plan Update* also identifies the following variations on the standard bicycle route:[11]
    - Class IIIa Arterial Bicycle Routes – Bicycle routes may be used on some arterial streets where bicycle lanes are not feasible and parallel streets do not provide adequate connectivity. These streets should promote shared use with lower posted speed limits (preferably 25 miles per hour), shared lane bicycle stencils, wide curb lanes, and signage.

[11] *2007 Oakland Bicycle Master Plan Update*, page 67.



Legend

= Daily Fee Area

= Monthly Permit Area

ADA = ADA Accessible Spaces

MS = Motorcycle Spaces

CS = Car Share Spaces

SS = Station Agent Spaces

= No Parking

FIGURE IV.C-8

MacArthur Transit Village Project EIR

On-Site Parking Facilities

SOURCE: FEHR & PEERS, 2007

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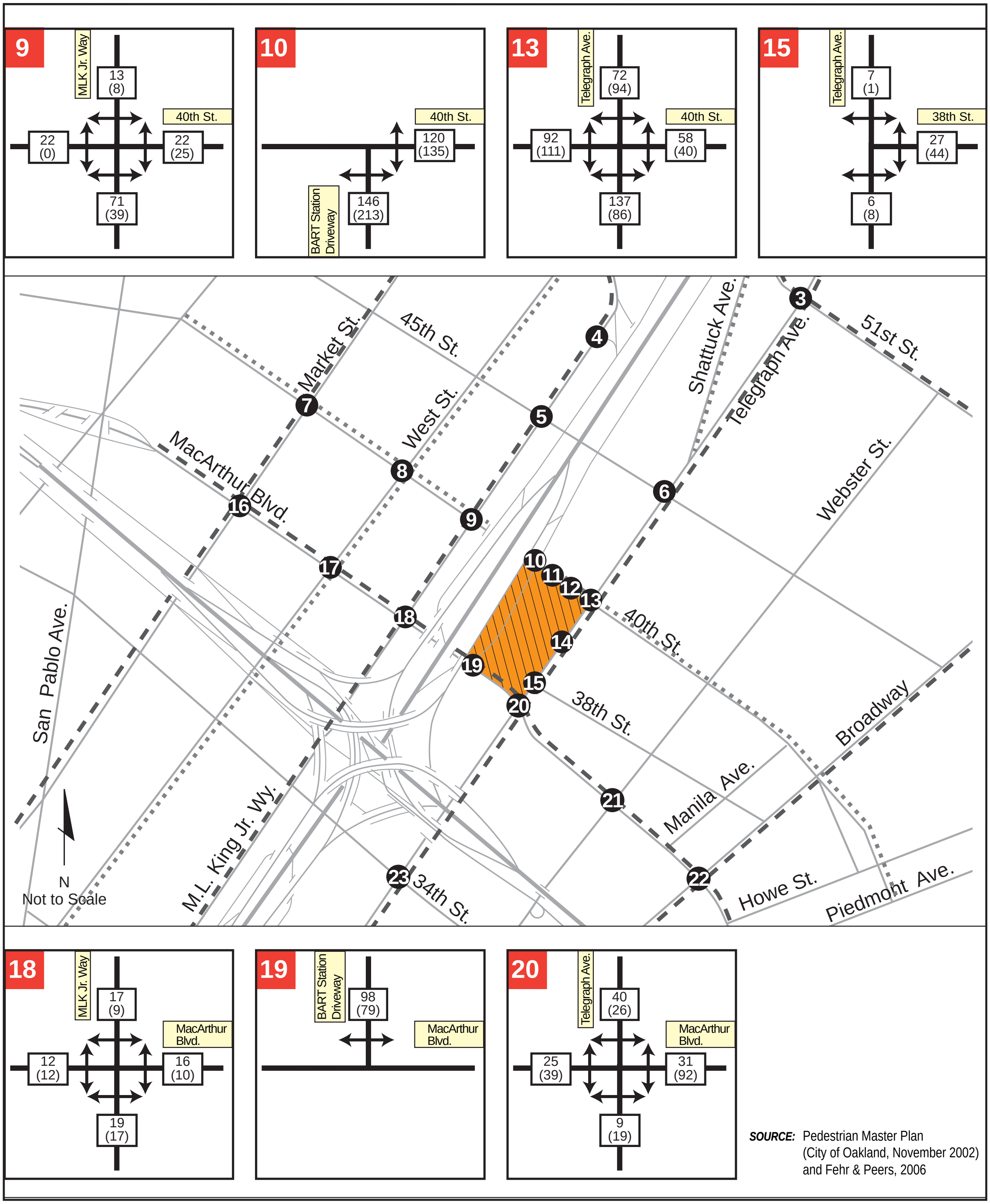

N
NTS

Legend

= City Route

= District Route

XX (YY) = AM (PM) Peak Hour Pedestrian Volumes

1 = Study Intersections

= Project Site

FIGURE IV.C-9

MacArthur Transit Village Project EIR
Existing Pedestrian Volumes and Designated Routes

SOURCE: FEHR & PEERS, 2007

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- Class IIIb Bicycle Boulevards – These are bicycle routes on residential streets that prioritize through trips for bicyclists. The route should appeal to cyclists of varied skill levels by providing direct connections on streets with low traffic volumes. The route should reduce delay to bicyclists by assigning right-of-way to travel on the route. Traffic calming should be introduced as needed to discourage drivers from using the boulevard as a through route. Intersections with major streets should be controlled by traffic signals with bicycle actuation.

Surrounding Area. There are a number of existing bicycle facilities located near the station area, as shown on Figure IV.C-10. These include:

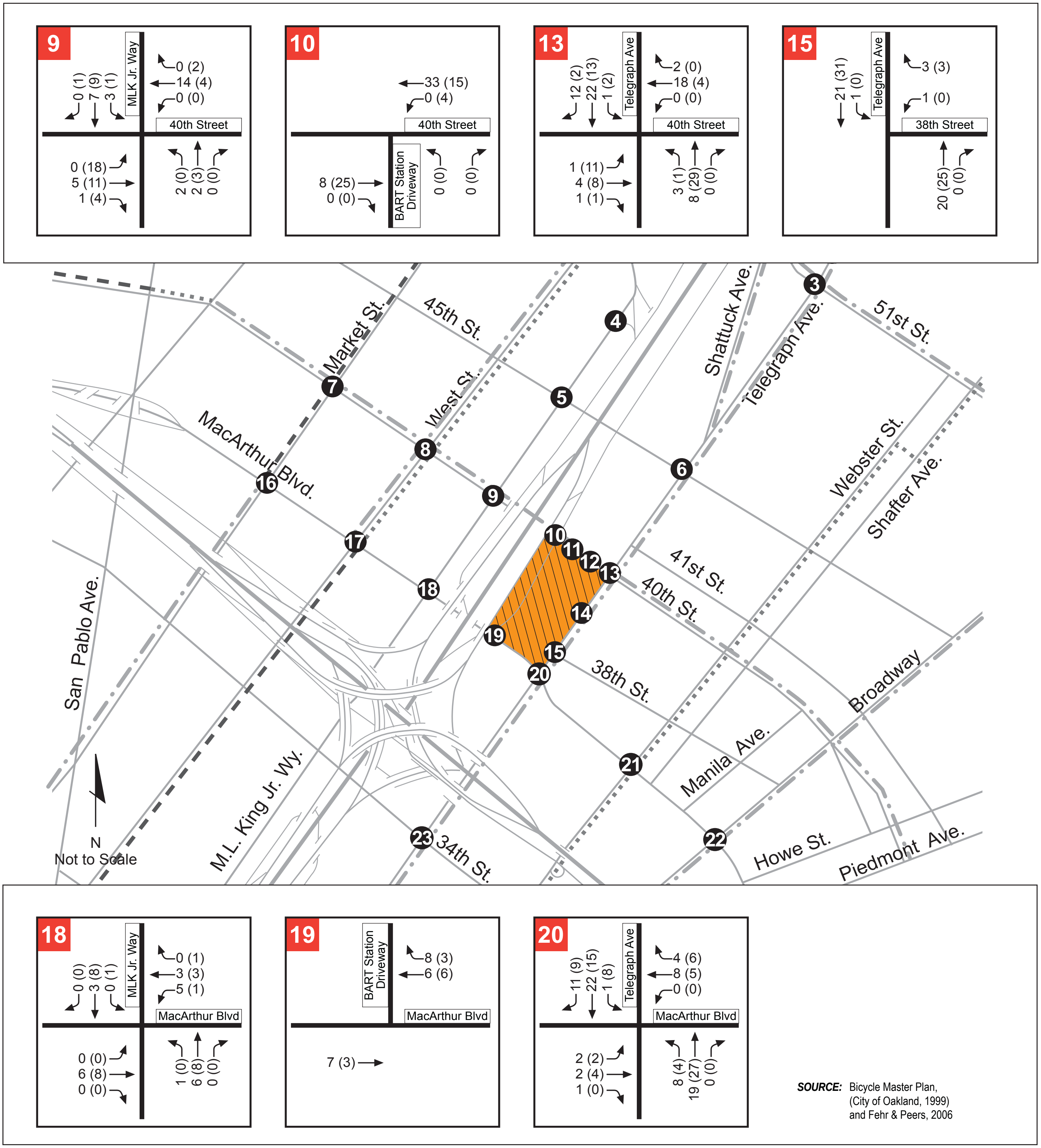
- 40th Street (east-west) – Class II bicycle lanes between San Pablo Avenue and Shellmound Avenues
- Market Street (north-south) – Class II bicycle lanes between West MacArthur Boulevard and Adeline Street
- West Street (north-south) – Class II bicycle lanes between West Grand Avenue and West MacArthur Boulevard; Class III bicycle route between West MacArthur Boulevard and Adeline Street
- Telegraph Avenue (north-south) – Class II bicycle lanes between Aileen Street and the City of Berkeley border
- Webster Street (north-south) – Class III bicycle route between 29th Street and the City of Berkeley border, via Shafter Avenue and Colby Street
- Broadway (north-south) – Class II bicycle lanes between 26th Street and the I-580 underpass

Outside of designated bicycle facilities, the conditions on many of the non-major roads surrounding the station are favorable for bicycling. The topography is relatively flat and the local residential streets, such as 38th Street and 41st Street, have low traffic volumes. However, pavement conditions can be rough on arterial streets such as Broadway and Telegraph Avenue. Bicycles are not allowed in the 12th and 19th Street BART stations during the AM and PM peak periods[12]. Considering this restriction, some cyclists who live close to the downtown Oakland stations ride to the MacArthur BART station to access BART.

In the project vicinity, the City of Oakland's *2007 Bicycle Master Plan Update* proposes the following:

- Extension of the Class II lanes on Market Street south of MacArthur Boulevard
- Extension of the Class II lanes on West Street from MacArthur Boulevard to 52nd Street

[12] BART Fares and Schedules brochure.



N
NTS

Legend

= Project Site
= Class II Bicycle Lanes
= Class III Bicycle Route
= Proposed Class II Bicycle Lanes
= Proposed Class III Bicycle Route
XX (YY) = AM (PM) Peak Hour Bicycle Volumes
= Study Intersections

FIGURE IV.C-10

MacArthur Transit Village Project EIR
Existing Bicycle Volumes
and Designated Routes

SOURCE: FEHR & PEERS, 2007

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- Class II lanes on Telegraph Avenue from Downtown Oakland to the existing lanes at Aileen Street
- Class II lanes on Shattuck Avenue from Telegraph Avenue to the Berkeley border
- Extension of the Class II lanes on Broadway from I-580 to Caldecott Lane
- Extension of the Class II lanes on 40th Street from Adeline Street to Telegraph Avenue, with a Class IIIb Bicycle Boulevard on 41st Street between Telegraph Avenue and Broadway, connecting to Class II lanes on 41st Street between Broadway and Piedmont Avenue
- Class IIIa route on 51st Street between Shattuck Avenue and the Piedmont border.
- Class II lanes on West MacArthur Boulevard from Market Street to Harrison Street
- Class IIIb Bicycle Boulevard on Webster Street/Shafter Avenue between 29th Street and the Rockridge BART station

The MacArthur BART Bicycle Feasibility Study, currently under study by City of Oakland, will identify a recommended bikeway alignment and design for improving east/west bicycle access to the MacArthur BART Station while maintaining quality bus/shuttle service. The study will evaluate various bicycle facility types and alignments on West MacArthur Boulevard, 40th Street, and 41st/42nd Street to connect the MacArthur BART Station with City of Emeryville and the Piedmont Avenue neighborhood.[13]

Consistent with City of Oakland's 2007 Bicycle Master Plan Update, the 2006 Countywide Bicycle Plan proposes extension of the Class II lanes on Market Street south of West MacArthur Boulevard to 14th Street, and extension of the Class II lanes on Telegraph Avenue from Aileen Street to 14th Street.

On-Site. The bicycle facilities on-site are generally limited to support facilities. Bicycles are not prohibited from entering and exiting the parking lot or the Frontage Road; however, given the presence of personal and transit vehicles, they are not desirable locations for bicycles. Bicycles are allowed on most BART trains, except commute period peak direction trains (towards San Francisco in the AM, and away from San Francisco in the PM).[14] The station provides bicycle storage facilities in front of the paid area under the SR-24 ramps, as shown on Figure IV.C-7.

The station facilities include six bicycle storage racks that each accommodates 12 bicycles (72 bicycles total) and 30 single-use lockers for customers to store bicycles, as well as

[13] *MacArthur BART Bicycle Feasibility Study* – Project Mission Statement, September 28, 2006.

[14] See discussion of Caltrans bike shuttle on page 138 regarding bicycle transport during hours bikes are prohibited on BART.

wheelchairs or mopeds. The single-use bicycle lockers are available to patrons 18 years or older on a quarterly or yearly basis (for fees of $15 and $30, respectively).

Bicycle Usage. The City has an overall bicycling commute mode share of 1.1 percent,[15] which does not include those who ride to BART. Currently, approximately 7 percent of patrons who access the MacArthur BART station daily from the surrounding neighborhood arrive by bicycle. Based on observations conducted at 12:00 p.m. at the station in October 2006, the bicycle racks were approximately 88 percent full, with 63 bicycles, and the lockers were approximately 13 percent full, with four bicycles.

AM and PM peak period (7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.) bicycle counts were taken at intersections surrounding the MacArthur BART station in May 2006. While patrons accessed the MacArthur BART station from all of the surrounding streets, approximately half of the cyclists used Telegraph Avenue. Existing bicycle counts and facilities are shown on Figure IV.C-10.

e. Parking. The existing on-street and off-street parking supply and demand within the project study area are described below.

(1) On-Street Parking. Existing on-street parking is available in areas surrounding the BART station as described below.

Supply. Within a ¼-mile of the MacArthur BART station, which roughly corresponds with the distance patrons feel comfortable walking from their car to a station, there are approximately 1,080 on-street non-metered parking spaces on the surrounding neighbor-hood streets. The number of spaces was estimated through a field review in May 2006 of neighborhood streets within the ¼-mile area, as shown on Figure IV.C-11. Parking spaces were not generally delineated, so the number of spaces on a given block face was estimated using the average of 22 feet per parking space.[16] Curb cuts, no-parking zones and corners were not included in the block face length calculation. On streets with marked spaces, the spaces were simply counted.

The parking spaces in the surrounding neighborhood streets are generally free, with the exception of some metered spaces along Telegraph Avenue. Almost all of the parking is unrestricted in duration and does not require a residential permit. However, there are sections of Telegraph Avenue, Martin Luther King Jr. Way, and some neighborhood streets

[15] US Census 2000.

[16] Based on the City's standard parallel parking length as stated in Zoning Code Section 17.94.060.

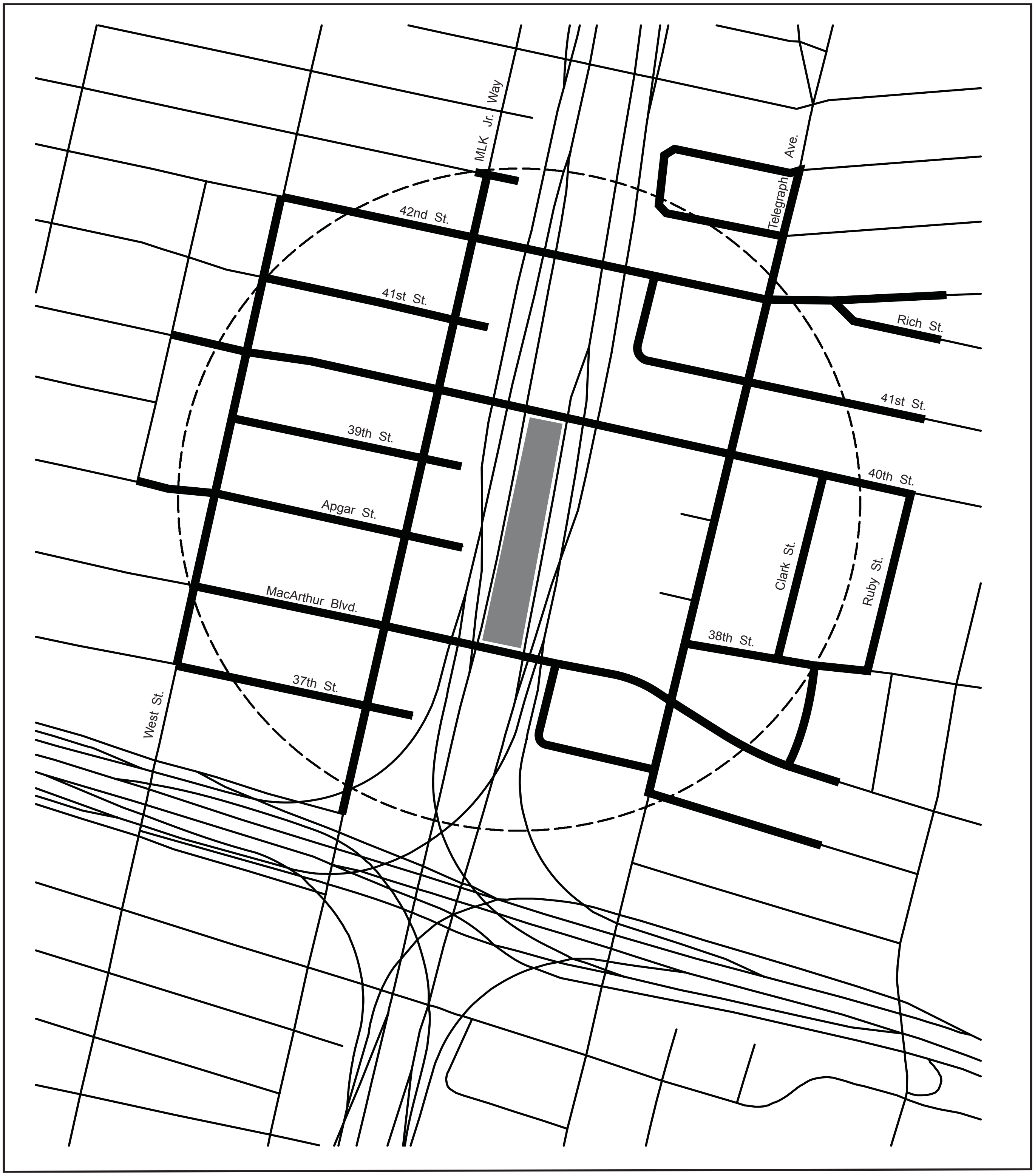

FIGURE IV.C-11

Legend

= Off-site Parking Facilities

= 1/4 mile buffer

= MacArthur BART Station Platform

N

MacArthur Transit Village Project EIR

Surrounding On-Street Parking

SOURCE: FEHR & PEERS, 2007

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east of Telegraph Avenue that have two-hour restricted parking spaces. Most of the residential streets within the area have street cleaning twice a month between 9:00 a.m. and noon, and on-street parking is prohibited during this time. The major streets in the area (i.e., Broadway, Telegraph Avenue, and West MacArthur Boulevard) have street cleaning three times a week between midnight and 3:00 a.m.

Demand. To obtain a general estimate of the number of MacArthur BART station patrons that park on the surrounding neighborhood streets, a parking occupancy count and license plate survey was conducted in May 2006,[17] after BART instituted parking fees for all of the MacArthur BART Station parking lot spaces. The parking occupancy counts were conducted within the ¼-mile area every 30 minutes during three periods of the day: the morning peak from 6:30 a.m. to 10:00 a.m., the midday from 11:00 a.m. to 1:00 p.m., and the evening peak from 4:00 p.m. to 6:30 p.m. The license plate survey was conducted on each street at 6:30 a.m. and a second time at 10:00 a.m. By having a list of the vehicles present at 6:30 a.m. and 10:00 a.m., vehicle turnover was determined, as well as how many vehicles stay in the neighborhood, how many leave and how many arrive.

Based on the results of the on-street parking analysis, the maximum number of vehicles parked within the ¼-mile area was 805 at 4:00 p.m., which represents approximately 75 percent of the total (1,080) on-street parking spaces located within ¼-mile of the BART station. At 10:00 a.m., 735 vehicles were parked on-street. Per the on-street parking survey, it is estimated that 216 BART patrons park on-street within ¼ mile of the BART Station throughout the day.[18]

The parking occupancy levels reached a maximum of 75 percent for the study area as a whole. This indicates that patrons can find vacant parking spaces within a ¼-mile of the MacArthur BART station throughout the day. On-street parking occupancy in the area east of SR-24 ranged during the day from 57 to 72 percent, while occupancy for the area west of SR-24 ranged from 60 to 92 percent.

(2) On-Site Parking. The MacArthur BART station provides 618 dedicated parking spaces in a large surface parking lot east of the fare gate area, as shown on Figure IV.C-8.

Supply. A total of 618 spaces are located within the on-site parking lot.

- 416 Daily Fee Spaces – First-come, first-served spaces, available all day with a daily fee of $1.00.

---

[17] Survey conducted on Tuesday, May 9, 2006.

[18] Based on the license plate survey, 240 vehicles arrived and parked in the neighborhood between 6:30 a.m. and 10:00 a.m. Considering the commercial uses in the area, it is estimated that 90 percent of the vehicles that arrive and park in the neighborhood are BART patrons.

- 182 Monthly Reserved Permit Spaces – Permits for monthly reserved parking guarantees the user a space within the designated area until 10:00 a.m. Any monthly reserved permit spaces that are not filled by 10:00 a.m. are available to passengers arriving after 10:00 a.m. and require a daily fee of $1.00. The monthly reserved spaces cost $84 per month or $4.50 per day and must be purchased in advance via the BART website.
- 14 ADA-Accessible Spaces – First-come, first-served ADA-accessible spaces with a daily fee of $1.00.
- Four Car Share Spaces – Reserved for City Car Share and Flex Car vehicles.
- Two Station Agent Spaces – Spaces reserved for BART personnel.

The parking lot also provides eight motorcycle parking spaces. There are currently no designated carpool parking spaces. BART station agents are also allowed to park two vehicles in the fare gate plaza.

Demand. Based on parking occupancy counts conducted within the MacArthur BART station parking lot in October 2006, the daily fee spaces were fully occupied by 7:40 a.m. At 9:00 a.m., 78 of the reserved permit spaces were available, and by noon, all of the parking spaces were occupied.

f. Existing Traffic Conditions. Traffic conditions in urban areas are affected more by the operations at the intersections than by the capacities of the local streets because traffic control devices (signals and stop signs) at intersections control the capacity of the street segments. The operations are measured in terms of a grading system called level of service (LOS), which is based on average vehicle delay experienced at the intersections. That delay is a function of intersection control device (i.e., signal or stop sign), intersection lane widths and configuration, hourly traffic volumes, pedestrian volumes, and parking and bus conflicts. To establish existing baseline traffic conditions, weekday morning (7:00 to 9:00 a.m.) and evening (4:00 to 6:00 p.m.) peak period intersection turning movement counts were conducted at the study intersections in May and June 2006, while area schools were in normal session. Data concerning the existing intersection configurations and control were collected in the field and are shown on Figure IV.C-12. Existing traffic signal timing data was collected for all of the signalized study intersections from the City of Oakland Public Works Agency, and compared against the actual conditions at study intersections to verify accuracy. Existing AM and PM peak hour volumes are shown on Figure IV.C-13.

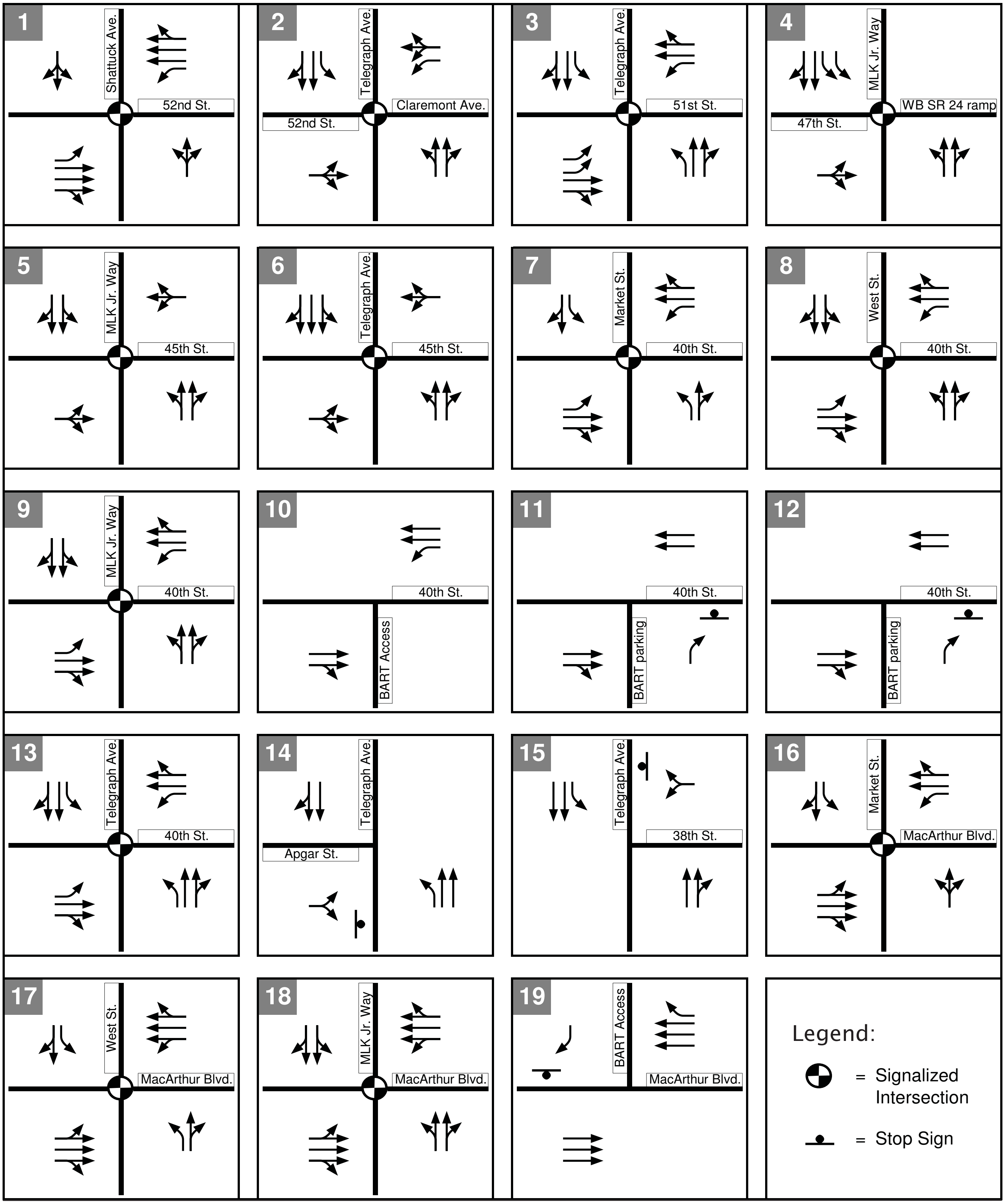

FIGURE IV.C-12A

MacArthur Transit Village Project EIR
Study Intersections (1-19)
Existing Geometry

SOURCE: FEHR & PEERS, 2007

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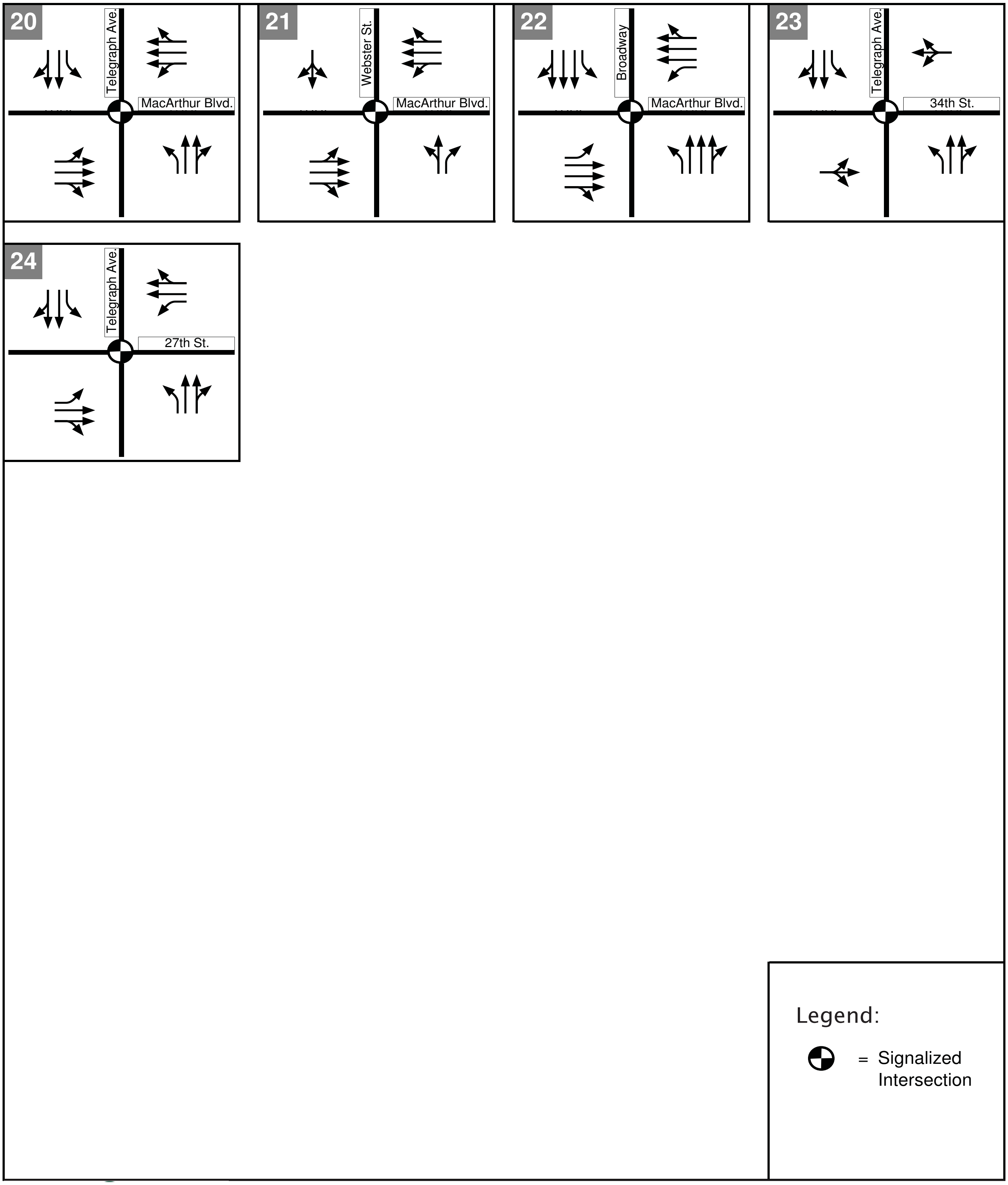

FIGURE IV.C-12B

MacArthur Transit Village Project EIR
Study Intersections (20-24)
Existing Geometry

SOURCE: FEHR & PEERS, 2007

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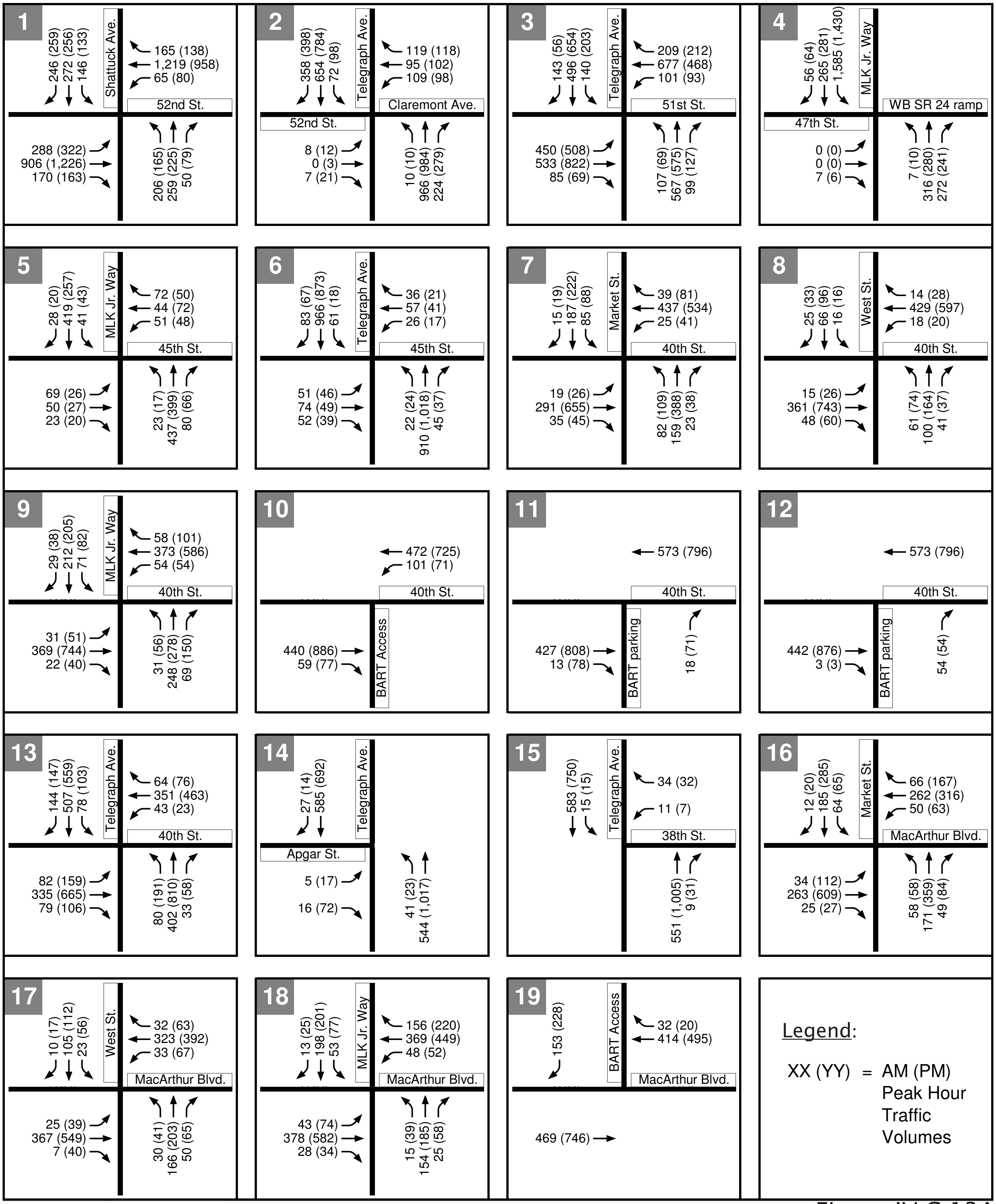

Figure IV.C-13A

MacArthur Village Project EIR
Study Intersections (1-19)
Existing Traffic Volumes

SOURCE: FEHR & PEERS, 2007.

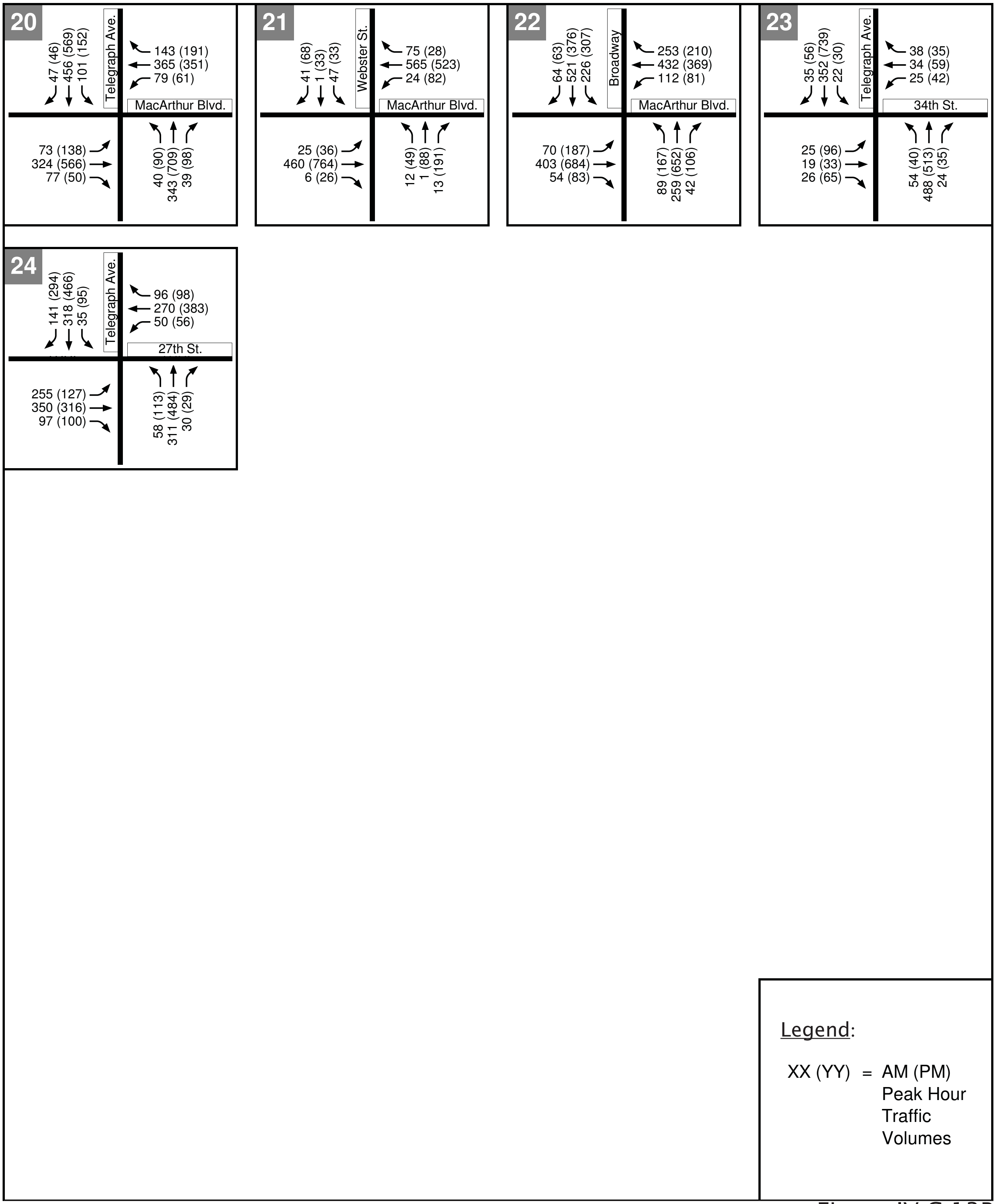

Figure IV.C-13B

MacArthur Village Project EIR
Study Intersections (20-24)
Existing Traffic Volumes

SOURCE: FEHR & PEERS, 2007.
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Level of Service Analysis Methodologies. The level of service grading system qualitatively characterizes traffic conditions associated with varying levels of vehicle traffic, ranging from level of service (LOS) A (indicating free-flow traffic conditions with little or no delay experienced by motorists) to LOS F (indicating congested conditions where traffic flows exceed design capacity and result in long queues and delays). This level of service grading system applies to both signalized and unsignalized intersections. LOS A to C are generally considered satisfactory service levels, while the influence of congestion becomes more noticeable (though still considered acceptable) at LOS D. LOS E and LOS F are generally considered to be unacceptable, though some jurisdictions (like the City of Oakland) consider LOS E to be acceptable in certain areas (like a downtown central business district) in recognition of the positive effect of traffic congestion in promoting the use of transit or other methods of travel.[19]

Unsignalized Intersections. For the unsignalized (all-way stop-controlled and side-street stop-controlled) study intersections, traffic conditions were evaluated using the *2000 Highway Capacity Manual* (HCM) operations methodology. With this methodology, level of service is related to the control delay per vehicle for the intersection as a whole (for all-way stop-controlled intersections), and for each stop-controlled movement or approach only (for side-street stop-controlled intersections). Control delay is defined as the delay associated with deceleration, stopping, moving up in the queue, and acceleration experienced by drivers at an intersection due to the control device. Table IV.C-7 summarizes the relationship between delay and level of service for unsignalized intersections. The Synchro 6.0 software program was used to apply the 2000 HCM methodology for unsignalized intersections.

Table IV.C-7 Level of Service Criteria for Unsignalized Intersections

LOS	Description	Average Control Delay (Seconds Per Vehicle)
A	Little or no delays	< 10.0
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	Extreme traffic delays with intersection capacity exceeded	> 50.0

Source: 2000 Highway Capacity Manual (Transportation Research Board); Fehr & Peers, 2007.

Signalized Intersections. At the signalized study intersections, traffic conditions were evaluated using the HCM operations methodology (TRB, 2000). The operation analysis uses various intersection characteristics (e.g., traffic volumes, lane geometry, and signal phasing/ timing) to estimate the average control delay experienced by motorists traveling through an intersection. Table IV.C-8 summarizes the relationship between control delay and level of service for signalized intersections. The

[19] City of Oakland, *General Plan Land Use and Transportation Element*, Policy T3.3 (Allowing Congestion Downtown).

Table IV.C-8 Level of Service Criteria for Signalized Intersections

LOS	Description	Average Control Delay (Seconds Per Vehicle)
A	Operations with very low delay occurring with favorable progression and/or short cycle length.	< 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	10.1 to 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.1 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.1 to 80.0
F	Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths.	> 80.0

Source: Highway Capacity Manual 2000, Fehr & Peers, 2006.

Synchro 6.0 software program was used to apply the 2000 HCM methodology for signalized intersections.

Existing Traffic Operating Conditions. Analysis of peak-hour traffic conditions was conducted at the 25 study intersections. These intersections were selected because they represent locations along major routes to and from the project site that would be impacted by the proposed project. A screening process based on established trip distribution patterns was used to select the study intersections. In general, study intersections were selected if the proposed project would increase intersection volumes by 30 or more peak hour vehicle trips, or the intersection would potentially operate at unacceptable conditions during the peak hours.

The existing AM and PM peak-hour intersection level of service and delays are summarized in Table IV.C-9. The level of service calculation sheets are presented in Appendix F. All study intersections currently operate at LOS D or better during both AM and PM peak hours. Field observation of existing intersection operations supports the results of the level of service analysis at the study intersections.

g. ACCMA Analysis. The Alameda County Congestion Management Agency (ACCMA) conducts periodic monitoring of the freeways and major roadways in Alameda County. The most recent *Level of Service Monitoring on the Congestion Management Program Roadway Network* was released in July 2006. This report assesses existing freeway operations

Table IV.C-9 Existing Conditions Intersection Level of Service Summary

No.	Intersection	Traffic Control	Existing AM		Existing PM	
			LOS	Delay	LOS	Delay
1	Shattuck Avenue/52nd Street	Signal	D	54.3	D	51.3
2	Telegraph Avenue/52nd Street/ Claremont Avenue	Signal	B	17.7	B	18.8
3	Telegraph Avenue/51st Street	Signal	D	39.1	D	47.1
4	Martin Luther King Jr. Way/47th Street/ Westbound SR-24 On-Ramp	Signal	C	26.8	B	11.0
5	Martin Luther King Jr. Way/45th Street	Signal	A	9.0	A	9.0
6	Telegraph Avenue/45th Street	Signal	B	10.3	A	6.8
7	Market Street/40th Street	Signal	B	17.6	C	25.0
8	West Street/40th Street	Signal	B	13.8	B	17.4
9	Martin Luther King Jr. Way/40th Street	Signal	B	13.9	B	19.9
10	Frontage Road/40th Street	SSSC	B	10.2	B	13.8
11	BART parking access (west)/40th Street	SSSC	B	13.8	C	17.5
12	BART parking access (east)/40th Street	SSSC	B	14.6	C	17.9
13	Telegraph Avenue/40th Street	Signal	C	23.9	C	28.6
14	BART parking access/Telegraph Avenue	SSSC	C	19.3	C	21.4
15	Telegraph Avenue/38th Street	SSSC	B	14.8	C	21.6
16	Market Street/MacArthur Boulevard	Signal	B	16.8	C	31.6
17	West Street/MacArthur Boulevard	Signal	B	12.3	B	14.1
18	Martin Luther King Jr. Way/ MacArthur Boulevard	Signal	A	9.0	B	11.5
19	Frontage Road/MacArthur Boulevard	SSSC	B	14.6	C	15.7
20	Telegraph Avenue/MacArthur Boulevard	Signal	B	18.8	B	14.4
21	Webster Street/MacArthur Boulevard	Signal	A	8.7	B	11.4
22	Broadway/MacArthur Boulevard	Signal	D	54.7	D	42.0
23	Telegraph Avenue/34th Street	Signal	A	6.8	B	13.0
24	Telegraph Avenue/27th Street	Signal	C	23.1	C	21.8

Note: The LOS/delay for Side-Street Stop-Control (SSSC) intersections represents the worst movement or approach; for Signalized intersections, the LOS/Delay represents overall intersection.

Source: Fehr & Peers, 2007.

through "floating car" travel time surveys, which are conducted on all freeway segments during the PM peak hours (4:00 p.m. to 6:00 p.m.), and on selected freeway segments during the AM peak hours (7:00 a.m. to 9:00 a.m.). Based on the results of these surveys, ACCMA assigns a level of service grade to each segment according to the method described in the 1985 *Highway Capacity Manual*. Any segment with an average speed of less than 30 miles per hour is assigned LOS F. Freeway interchanges with speeds below 50 percent of free flow speed are assigned LOS F.

The travel time surveys concluded that the following eight freeway segments in the City of Oakland operated at LOS F during the AM peak hour:

- I-80 westbound: I-580 split to Toll Plaza
- I-80 westbound: Toll Plaza to SF County Line
- I-580 westbound: SR-24 on-ramp to I-80/I-580 split
- I-880 northbound: I-980 to I-880/80 merge
- SR-13 northbound: Moraga Avenue to Hiller Drive
- SR-24 eastbound: I-580 on-ramp to Fish Ranch Road
- SR-13/SR-24 interchange: SR-13 northbound to SR-24 eastbound
- I-880/SR-260 connection: SR-260 eastbound to I-800 northbound

The following ten freeway segments in the City of Oakland were identified as operating at LOS F during the PM peak hour:

- I-80 eastbound: San Francisco County Line to Toll Plaza
- I-80 eastbound: Toll Plaza to I-580 southbound merge
- I-80 westbound: I-580 split to the Toll Plaza
- I-880 southbound: I-980 to 23rd Avenue
- I-880 southbound: 23rd Avenue to High Street/42nd Avenue
- I-880 southbound: High Street/42nd Avenue to Hegenberger Road
- SR-13 northbound: Moraga Avenue to Hiller Drive
- SR-24 eastbound: I-580 on-ramp to Fish Ranch Road
- SR-13/SR-24 interchange: SR-13 northbound to SR-24 eastbound
- I-580/SR-24 connection: SR-24 westbound to I-580 eastbound

Two of these segments (I-80 westbound from the I-580 split to the Toll Plaza, and eastbound SR-24 from the I-580 on-ramp to Fish Ranch Road) have operated at LOS F since the initial ACCMA data collection effort in 1991.

Three of these deficient segments are within the study area for this project: I-580/SR-24 connection from SR-24 westbound to I-580 eastbound during the PM peak hour, I-580 westbound from SR-24 on-ramp to the I-80/I-580 split during the AM peak hour, and SR-24 eastbound from the I-580 on-ramp to Fish Ranch Road during both AM and PM peak hour.

h. Collision Analysis. Collision data for the area surrounding the project site from 2000 to 2006 was provided by City of Oakland staff. Vehicle collision data is summarized in Table IV.C-10, and pedestrian and bicycle collision data is summarized in Table IV.C-11. The most common collision type at intersections was broadside and the most common collision types along corridors were rear-end and side-swipe.

At the Telegraph Avenue/40th Street intersection nine collisions involving pedestrians, and five involving bicyclists were reported. These collisions resulted in ten injuries and no deaths. On 40th Street between Martin Luther King Jr. Way and Telegraph Avenue, five pedestrian collisions and one bicycle collision were reported between 2000 and 2004. These six collisions resulted in three injuries and one death.

i. Planned Transportation Improvements. The City of Oakland, BART, and the MacArthur BART station Citizen's Planning Committee (CPC) created a design plan for improving bicycle and pedestrian access to the MacArthur BART station in 2004, entitled the *MacArthur BART Station West Side Pedestrian Enhancement Project.* Many of the improvements listed below are the outcome of that plan.

(1) Pedestrian Improvements. The City of Oakland's 40th Street Improvement/ MacArthur Transit Hub project, which is funded, approved, and will be constructed by spring 2009, includes improvements to the pedestrian facilities surrounding the MacArthur BART station. The improvements, as described in the *Plans for 40th Street, MacArthur Transit Hub Improvements*,[20] include:

- Crosswalk improvements at the 40th Street/Martin Luther King Jr. Way and 40th Street/Telegraph Avenue intersections.
- Sidewalk bulbouts on the west side of the 40th Street/Telegraph Avenue intersection (intersection #10).

[20] City of Oakland, July 2006.

Table IV.C-10 Vehicle Collision Data Summary by Type (2000-2006)

Location	Total	Broad-side	Rear-End	Side-Swipe	Head-On	Other	Injuries	Deaths
Intersections								
MLK Jr. Way/40th Street	9	5	0	0	3	1	5	0
Telegraph Avenue/40th Street	35	10	10	9	4	2	4	0
MLK Jr. Way/W. MacArthur Blvd.	25	16	1	3	4	1	16	0
Telegraph Avenue/W. MacArthur Blvd.	29	13	5	3	6	2	12	0
Corridors								
40th Street (MLK Jr. Way – Telegraph Ave.) [a]	22	1	11	7	1	2	9	0
MacArthur Boulevard (MLK Jr. Way – Telegraph Ave.)	24	5	4	8	1	6	5	0
MLK Jr. Way (40th St. – MacArthur Blvd.)	13	3	4	5	0	1	5	0
Telegraph Avenue (40th St. – MacArthur Blvd.)	26	5	14	4	1	2	3	0

a This data through 2004 only.

Source: City of Oakland Transportation Services, Traffic Collision History Report.

Table IV.C-11 Pedestrian/Bicycle Collision Data Summary by Type (2000-2006)

Location	Total	Pedestrian	Bicycle	Injuries	Deaths
Intersections					
MLK Jr. Way/40th Street	0	0	0	0	0
Telegraph Avenue/40th Street	14	9	5	10	0
MLK Jr. Way/W. MacArthur Blvd.	1	1	0	1	0
Telegraph Avenue/W. MacArthur Blvd.	8	4	4	4	0
Corridors					
40th Street (MLK Jr. Way – Telegraph Ave.) [a]	6	5	1	3	1
MacArthur Boulevard (MLK Jr. Way – Telegraph Ave.)	3	0	3	3	0
MLK Jr. Way (40th St. – MacArthur Blvd.)	0	0	0	0	0
Telegraph Avenue (40th St. – MacArthur Blvd.)	5	4	1	4	0

a This data through 2004 only.

Source: City of Oakland Transportation Services, Traffic Collision History Report.

- Installation of a new traffic signal with pedestrian crossing phases at the 40th Street/Frontage Road intersection (intersection #10).
- Construction of an additional crosswalk on the west side of the 40th Street/Frontage Road intersection, including the creation of a mid-block pedestrian refuge in the median.
- Installation of pedestrian lighting along 40th Street, including under SR-24 underpass, as well as bicycle and pedestrian way finding signage to the station.

These improvements are assumed to be in place in the Existing Plus Project and Cumulative Year 2015 and 2030 Baseline scenarios.

(2) Bicycle Improvements. Approved and funded improvements that would directly affect bicycling access to the MacArthur BART station include:

- Class II Bike Lanes on 40th Street between Telegraph and Martin Luther King Jr. Way. These are included in the Plans for 40th Street, MacArthur Transit Hub Improvements.[21]
- 38 new electronic bicycle storage lockers at the MacArthur BART station in the plaza area to replace the existing single-user annual rental lockers (with capacity for 30 bicycles). The electronic-access bicycle lockers will eliminate the need for individual keys and will rely on smart cards instead. This will provide a greater opportunity for more bicyclists to use the electronic lockers.

These improvements are assumed to be in place in the Existing Plus Project and Cumulative Year 2015 and 2030 Baseline scenarios.

(3) Vehicle Improvements. Following roadway improvements are planned in the near-future:

- The Shattuck Avenue/52nd Street intersection (#1) will be modified to provide exclusive left-turn lanes on the northbound and southbound Shattuck Avenue approaches. Signal operations will also be modified to provide protected left-turn phases in the eastbound and westbound approaches, permitted left-turn phase in the southbound approach and protected/permitted left-turn in the westbound approach. This improvement is funded, approved, and expected to be implemented in Winter 2008 and is assumed to be in place in the Existing Plus Project and Cumulative Year 2015 and 2030 Baseline scenario analyses.
- As part of the aprproved Kaiser Medical Center project, the Broadway/MacArthur Boulevard intersection (#22) will be reconfigured to convert a shared through/right-turn lane to an exclusive right-turn lane in the northbound and southbound approaches. This

[21] City of Oakland, July 2006.

improvement, part of conditions of approval for the Kaiser project, is expected to be implemented by 2015, and is assumed to be in place in the Cumulative Year 2015 and 2030 Baseline scenario analyses.

j. Local Plans and Policies. The Oakland General Plan is comprised of numerous elements, and those containing policies relevant to transportation resources primarily are contained in the Land Use and Transportation Element (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 vs. City of Oakland, 1993).

(1) General Plan Land use and Transportation Element (LUTE). The City of Oakland, through various policy documents, states a strong preference for encouraging the use of alternative transportation modes. The following polices are included in 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.

(2) City of Oakland Pedestrian Master Plan. In November 2002, the Pedestrian Master Plan (PMP) was adopted by the City Council and incorporated into the adopted General Plan. The PMP identifies policies and implementation measures that promote a walkable City. The PMP designates MacArthur Boulevard, Market Street, Martin Luther King

Jr. Way, Telegraph Avenue, Broadway, and 51st Street as City Routes, and 40th Street, West Street, and Shattuck Avenue as District Routes.[22]

The PMP includes the following relevant policies and actions:

- PMP Policy 1.2: Use traffic signals and their associated features to improve pedestrian safety at dangerous intersections.
- General Plan Policy T3.5: The City should include bikeways and pedestrian walks in the planning of new, reconstructed, or realigned streets, wherever possible.
- PMP Policy 2.1: Create and maintain a pedestrian route network that provides direct connections between activity centers.
- Action 2.1.1: Improve existing connections across/under freeways to activity centers using lighting, acoustics, and other design features.
- Action 2.1.4: Avoid the use of pedestrian overpasses and underpasses for pedestrian crossings on surface streets.
- PMP Policy 2.3: 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.
- PMP Policy 3.2: 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.

(3) City of Oakland Bicycle Master Plan. The Oakland City Council adopted the *2007 Oakland Bicycle Master Plan* (BMP) on December 4, 2007. The adopted BMP, updated in 2007, includes the following policy-supporting actions that are applicable to the proposed project:

- Policy 1: Create, enhance and maintain the recommended bicycle network.

[22] See page 96for more detail.

- Policy 4: Include provisions for safe and direct bicycle access to special development areas and key corridors.
- Policy 5: Promote secure and conveniently located bicycle parking at destinations throughout Oakland.
- Policy 8: Insure that the needs of bicyclist are considered in the design of new development and redevelopment projects.

The 2007 BMP also contains requirements that new development provide both short-term (i.e., bicycle racks) and long-term bicycle parking (i.e., lockers or indoor storage) for bicycles.

(4) AC Transit Short-Range Transit Plan. 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 the *Short Range Transit Plan - FY 2003 to FY 2012* (AC Transit, 2004). Some of the major goals of AC Transit include:

- 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* (AC Transit, 2002) to provide fast, frequent, reliable service on a wide variety of routes with attractive vehicles and an easy-to-use, affordable fare structure. 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 real-time display of arrival times.

(5) BART Strategic Plan. BART, the provider of rail transit service in the project study area, has established goals related to transit service. These goals are documented in the *1999 BART Strategic Plan* (BART, Updated in 2003). Some of the relevant goals of BART include:

- Customer Experience: Goal 2: Maximize regional transit access, convenience, and ease of use through effective coordination among transit providers.

Strategies: Work with transit partners to improve feeder service for customers; support the development of incentives to spur further improvements in the quality of transit connections.

- Transit Travel Demand: Goal 3: Encourage and facilitate improvement access to and from our stations by all modes.

  Strategies: Improve access via taxis, shuttles, buses, walking, bicycles, and other transit.

(6) City of Oakland Standard Conditions of Approval. The City of Oakland's Standard Conditions of Approval that would apply to the proposed project are listed below. The Conditions of Approval will be adopted as requirements of the proposed project if the project is approved by the City to help ensure no significant impacts (for the applicable topic) occur, as a result they are not listed as mitigation measures.

COA TRANS-1: Prior to the issuance of each building permit, the project sponsor and construction contractor shall meet with the Transportation Services Division and other 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 sponsor shall develop a construction management plan for review and approval by the City Transportation Services Division. The plan shall also be submitted to BART and AC Transit for review and comment. The plan shall include at least the following items and requirements:

- 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.
- Notification procedures for adjacent property owners and public safety personnel regarding when major deliveries, detours, and lane closures will occur.
- Location of construction staging areas for materials, equipment, and vehicles (must be located on the project site).
- Identification of haul routes for movement of construction vehicles that would minimize impacts on vehicular and pedestrian traffic, circulation and safety; and provision for monitoring surface streets used for haul routes so that any damage and debris attributable to the haul trucks can be identified and corrected by the project applicant.
- Temporary construction fences to contain debris and material and to secure the site.

- Provisions for removal of trash generated by project construction activity.
- A process for responding to, and tracking, complaints pertaining to construction activity, including identification of an on-site complaint manager.
- Subject to City review and approval, prior to start of construction, a construction worker transportation demand management (TDM) program shall be implemented to encourage construction workers to carpool or use alternative transportation modes in order to reduce the overall number of vehicle trips associated with construction workers.
- Identification and maintenance of vehicular, bicycle, pedestrian and transit access to and from the BART Station.

It is anticipated that this Construction Traffic Management Plan would be developed in the context of a larger Construction Management Plan, which would address other issues such as hours of construction on-site, limitations on noise and dust emissions, and other applicable items.

2. Analysis Approach

Traffic impacts that could result from development of the proposed project are assessed at the 25 study intersections under Existing, Cumulative Year 2015, and Cumulative Year 2030 conditions. Traffic generated by the proposed project is added to the baseline no project conditions for each scenario to determine the potential impacts of the project. The assumptions for the proposed project are described below.

a. Proposed Land Uses. The proposed MacArthur Transit Village would include 675 multi-family residential units (including below market rate and market-rate units), up to 44,000 square feet of commercial space, and 5,000 square feet of community space, to be developed on the existing MacArthur BART station surface parking lot and surrounding parcels. Approximately half of the existing 618 surface parking spaces would be removed, and the remaining 300 spaces would be replaced in a parking garage.

b. Project Trip Generation. Table IV.C-12 summarizes the proposed project's vehicle trip generation. The trip generation for each project component is described below:

- ***Residential*** – The trip generation for the residential component of the project is estimated using the Institute of Transportation Engineers' (ITE) *Trip Generation* (7^{th} Edition) data for condominiums. Considering the development's location adjacent to the BART station, a 38 percent transit-oriented trip reduction factor is applied for AM and PM peak hours, and a 19 percent reduction is applied to daily trip generation. This reduction factor is based on surveys at comparable sites in the Bay Area, as well as review of literature on transit-oriented development travel patterns. A more detailed discussion of this is in the Trip Generation memo included in Appendix F.

Table IV.C-12 Project Vehicle Trip Generation

Land Use	ITE Code	Amount	Daily Trips	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Condominium[a]	230	675 DU	3,254	40	197	237	193	95	288
Residential Transit Reduction[b]		Daily19% Peak Hr. 38%	-618	-15	-75	-90	-73	-36	-109
Total Residential Trips			***2,638***	***25***	***122***	***147***	***120***	***59***	***179***
Commercial[c]	814	44 ksf	1,950	67	52	119	52	67	119
Commercial Transit Reduction[d]		5%	-98	-3	-3	-6	-3	-3	-6
Total Commercial Trips			***1,852***	***64***	***49***	***113***	***49***	***64***	***113***
Community Space[e]	565	5 ksf	396	34	30	64	31	35	66
On-Site BART Parking Reduction [f]		-300 spaces	0	0	0	0	0	0	0
TOTAL			**4,886**	**123**	**201**	**324**	**200**	**158**	**358**

Notes: du = dwelling unit; ksf = 1,000 square feet.

[a] Trip generation based on the regression equations for Residential Condominium/Townhouse (Land Use 230) in the Institute of Transportation Engineers' (ITE) *Trip Generation* (7th Edition, 2003), as presented below.

Daily Equation: Ln (T) = 0.85 Ln(X) + 2.55
AM Equation: Ln (T) = 0.80 Ln(X) + 0.26 (inbound = 17%, outbound = 83%)
PM Equation: Ln (T) = 0.82 Ln(X) + 0.32 (inbound = 67%, outbound = 33%)
Where: T = trip ends, Ln = natural logarithm, and X = number of dwelling units

[b] Residential transit reduction based on trip generation surveys at Bay Area TODs adjacent to BART stations; confirmed by data presented in *Recommended Trip Generation Adjustments for Transit-Oriented Developments in Oakland (Dowling Associates, April 2006),* as well as *Bay Area Transportation Surveys* (BATS) 2000 data for households within ½ mile of BART stations. Transit reduction for daily trip generation is lower to account for lower transit mode share for non-work trips.

[c] Daily and PM trip generation based on the rates for Specialty Commercial (Land Use 814) in the ITE *Trip Generation* (7th Edition), as presented below.

Daily Rate: (T) = 44.32 (X)
PM Rate: (T) = 2.71 (X) (inbound = 44%, outbound = 56%)
Where: T = trip ends and X = 1,000 square feet
AM trip generation based on PM trip rate, with reversed inbound/outbound splits.

[d] Commercial transit reduction based on TOD literature on commercial trips, including *Travel Characteristics of Transit-Oriented Development in California* (Lund, Cervero, and Wilson, 2004*),* and *Ridership Impacts of Transit-Focused Development in California (*Cervero, 1994).

[e] Trip generation based on the average rates for Day Care Center (Land Use 565) in the ITE) *Trip Generation* (7th Edition), as presented below.

Daily Rate: (T) = 79.26 (X)
AM Rate: (T) = 12.79 (X) (inbound = 53%, outbound = 47%)
PM Rate: (T) = 13.18 (X) (inbound = 47%, outbound = 53%)
Where: T = trip ends and X = 1,000 square feet

[f] The project includes removing approximately 300 of the existing 618 parking spaces in the BART lot. In the AM peak hour, any change in trips to the parking lot will most likely continue to occur before the peak hour. To be conservative, we assume that BART patrons currently entering and exiting the lot in the PM peak hour will continue to do so.

Source: Fehr & Peers, 2007.

- ***Commercial*** – Most of the designated commercial space is expected to be used as neighborhood serving commercial space. Although a portion of the commercial space (approximately 10,000 square feet) may be associated with the ground floor of the live/ work units. The trip generation for the commercial component of the project is estimated using the ITE data for specialty commercial to present a conservative analysis. Based on review of available literature, a 5 percent transit reduction factor is used.
- ***Community Space*** – The specific uses of the community space have not been determined yet. This analysis conservatively assumes that the community space would be used as a day care center. Thus, the ITE data for day care is used.
- ***BART Parking Garage*** – Although the proposed project would eliminate 300 of the existing parking space in the BART parking garage, this analysis conservatively assumes that the BART parking garage would continue to generate the same amount of peak hour traffic as existing conditions, in order to present a "worst case" analysis.

The trip generation assumptions and methodology are described in more detail in the MacArthur Transit Village Trip Generation Memorandum included in Appendix F.

Based on the assumptions described above, the project would generate approximately 4,886 new daily vehicle trips, 324 AM peak hour vehicle trips, and 358 PM peak hour vehicle trips, as shown in Table IV.C-12. This trip generation is conservative in that it does not account for the trips currently generated by the uses at the project site that would be demolished.

c. Project Trip Distribution. Trip distribution is defined as the directions of approach and departure that vehicles would use to arrive at and to depart from the site. The trip distribution was primarily based on the results of the Alameda County Congestion Management Agency's (ACCMA) latest available Countywide Travel Demand Model. Since the model is a regional model and does not accurately forecast local traffic, the trip distribution was further refined based on characteristics of the surrounding roadway network, existing traffic patterns, surrounding uses, and location of complimentary land uses.

Figures IV.C-14 and IV.C-15 show the estimated trip distribution and vehicle paths to and from the proposed project for the residential and non-residential components of the project, respectively.

d. Site Access and Circulation. The proposed project includes the following three internal roadways.

- ***Frontage Road*** would be a north-south road on the west side of the project, adjacent to the BART tracks, connecting 40th Street and MacArthur Boulevard and generally following the existing alignment of Frontage Road. The intersections of Frontage Road with 40th

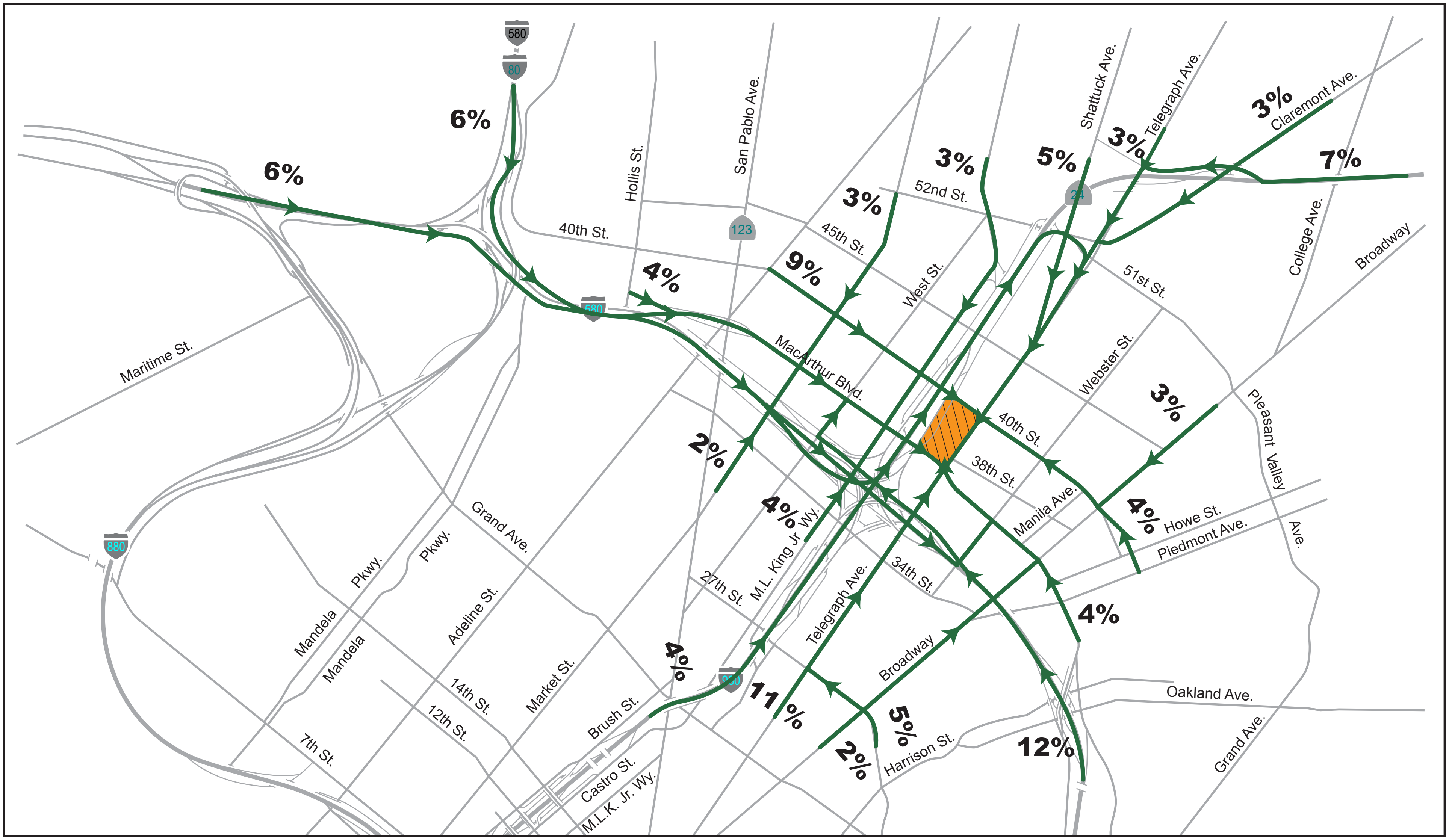


FIGURE IV.C-14A

MacArthur Transit Village Project EIR
Inbound Travel Routes and Project Trip Distribution (Residential)

Legend

= Project Site

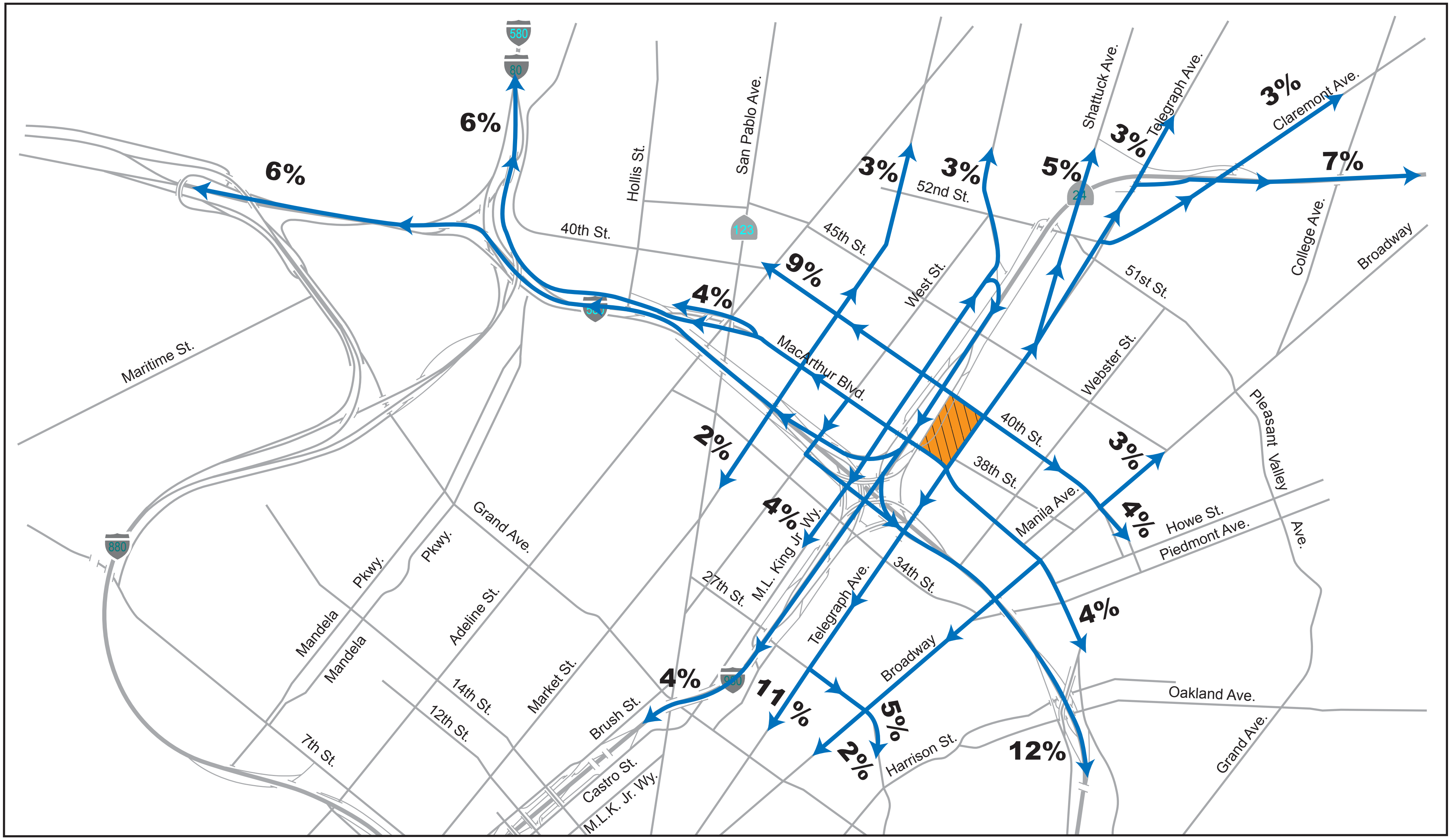
= Inbound Travel Routes

X% = Project Trip Distribution

N

NTS

SOURCE: FEHR & PEERS, 2007



Legend

= Project Site

= Outbound Travel Routes

NTS **X%** = Project Trip Distribution

FIGURE IV.C-14B

MacArthur Transit Village Project EIR
Outbound Travel Routes and Project
Trip Distribution (Residential)

SOURCE: FEHR & PEERS, 2007

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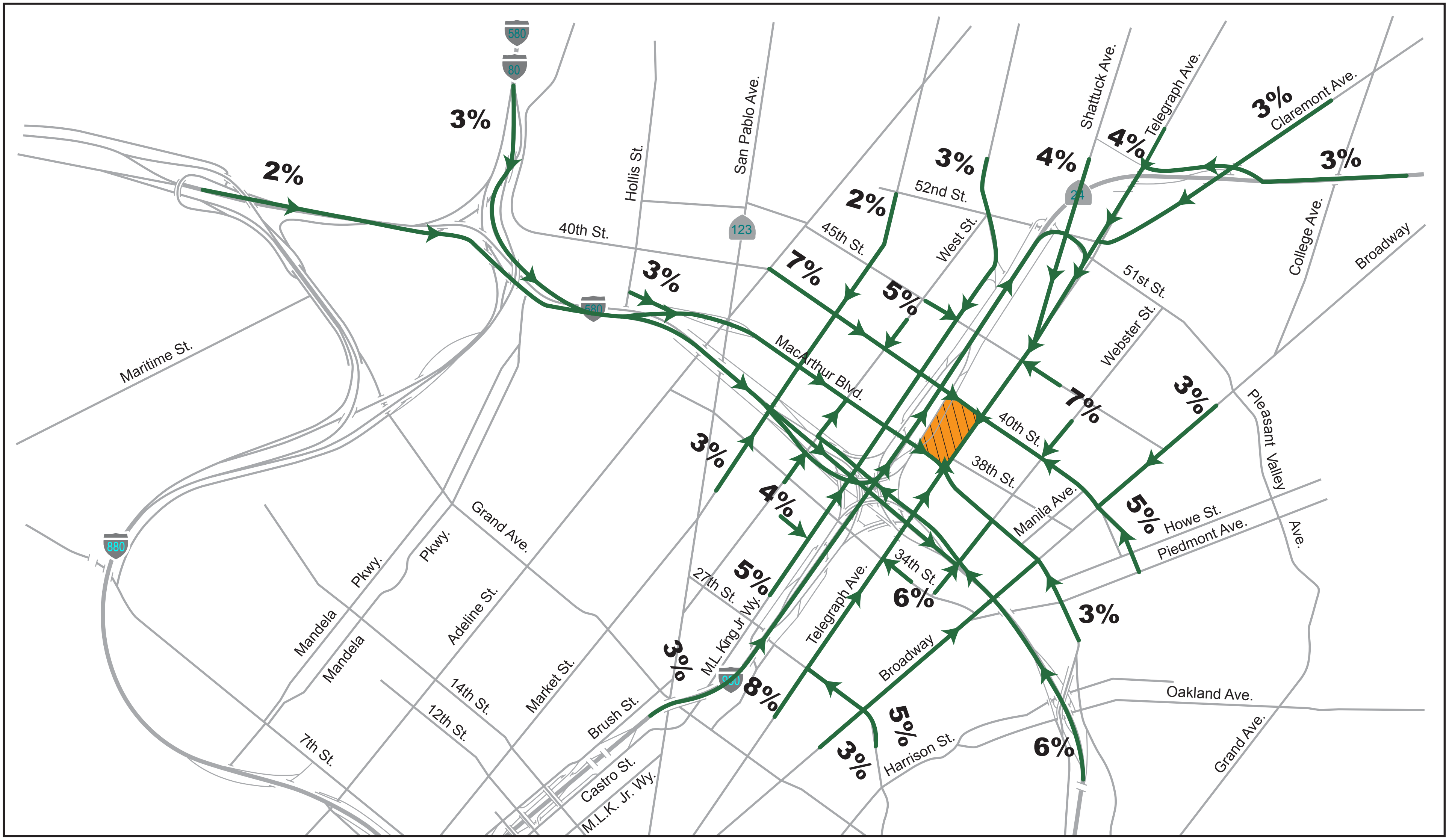

Legend

= Project Site

= Inbound Travel Routes

NTS **X%** = Project Trip Distribution

FIGURE IV.C-15A

MacArthur Transit Village Project EIR
Inbound Travel Routes and
Project Trip Distribution (Non-Residential)

SOURCE: FEHR & PEERS, 2007

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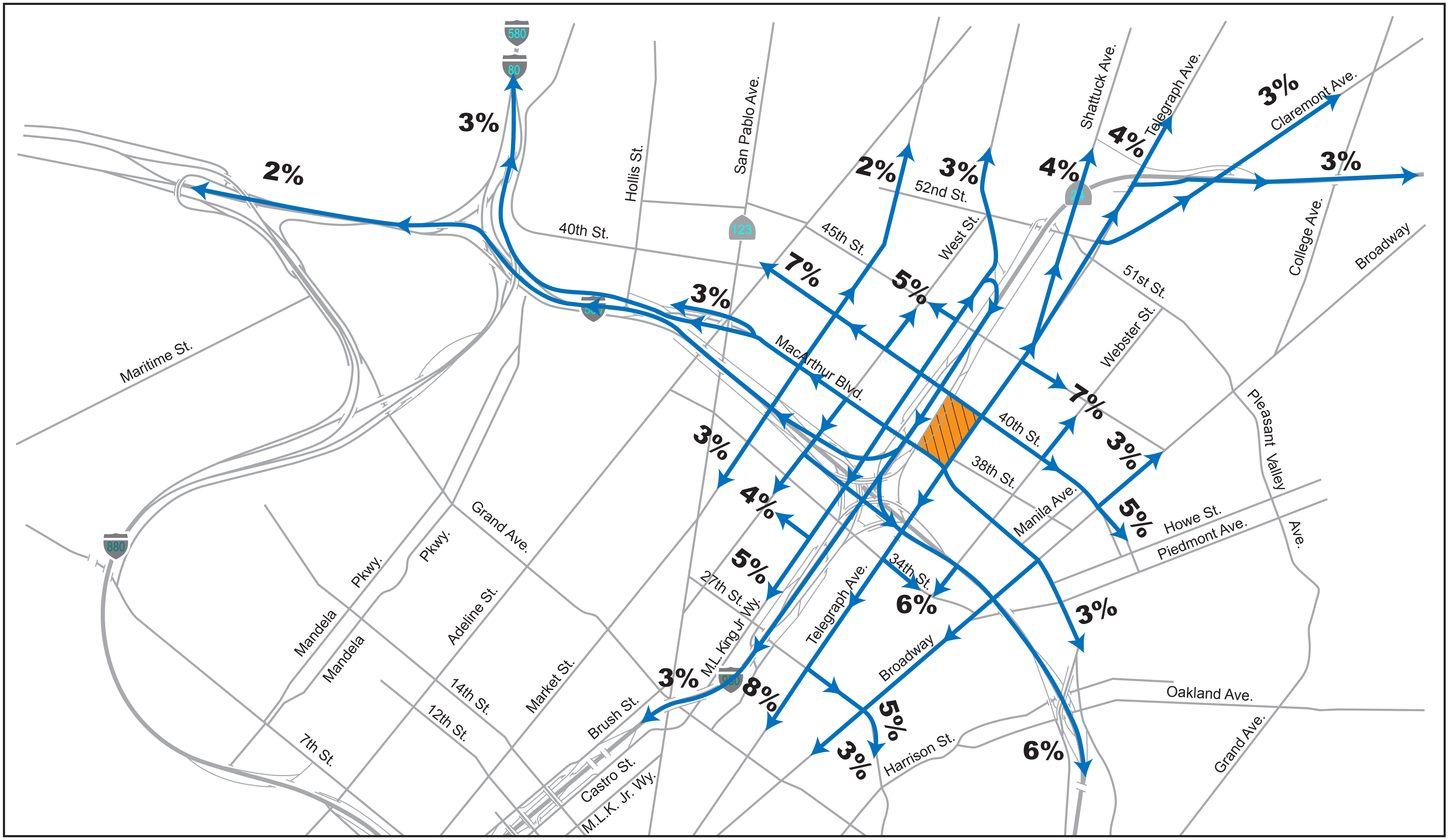

Legend

= Project Site

= Inbound Travel Routes

N

NTS

X% = Project Trip Distribution

FIGURE IV.C-15B

MacArthur Transit Village Project EIR

Outbound Travel Routes and Project Trip Distribution (Non-Residential)

SOURCE: FEHR & PEERS, 2007

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Street and West MacArthur Boulevard would be signalized with all movements allowed. The north portion of Frontage Road would primarily be a two-way roadway used to access the BART station and the Transit Village. The center portion of the roadway (between Village Drive and the garage access) would be southbound only and restricted to shuttle use only. The south portion of the roadway (between West MacArthur Boulevard and the garage access) would be a two-way roadway primarily used to access the BART parking garage.

- ***Village Drive*** would be an east-west roadway connecting Telegraph Avenue and Frontage Road. The Telegraph Avenue/Village Drive intersection would be signalized with all movements allowed at the intersection.
- ***Internal Street*** would be a north-south cul-de-sac in the center of the project site connecting Village Drive with the residential parking facilities of the site.

The Frontage Road/West MacArthur Boulevard (#19) and Telegraph Avenue/Village Drive (#25) intersections would be signalized as part of the proposed project,[23] as described in Chapter III, Project Description.

3. 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. The section begins with a detailed explanation of the significance criteria utilized to determine whether an effect would be significant. Then traffic impacts are assessed at the study intersections in the study area for the following scenarios:

- Existing Plus Project;
- Cumulative Year 2015 Baseline No Project;[24]
- Cumulative Year 2015 Baseline Plus Project;[25]
- Cumulative Year 2030 Baseline No Project;[26] and
- Cumulative Year 2030 Baseline Plus Project.[27]

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[23] Both intersections would satisfy the Caltrans peak hour signal warrant after project completion.

[24] See page 123 for a definition of the scenario.

[25] Ibid.

[26] Ibid.

[27] Ibid.

An analysis of the project's potential effects on air traffic patterns, emergency access, traffic hazards, and pedestrian and bicycle facilities is provided following the analysis of intersections. An assessment of parking, and transit, though not considered environmental impacts under CEQA, is also provided.

a. Significance Criteria. The City of Oakland's significance criteria were used to determine if the proposed project would have a significant traffic impact.

(1) Traffic Load and Capacity Thresholds. A project would have a significant impact on the environment if it would 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 on roads, or congestion at intersections), or change the condition of an existing street (i.e., street closures, changing direction of travel) in a manner that would substantially impact access or traffic load and capacity of the street system, as defined below:

- At a study, signalized intersection, the project would cause the level of service[28] to degrade to worse than LOS D (i.e., E).
- At a study, signalized intersection where the level of service is LOS E, the project would cause the total intersection average vehicle delay to increase by 4 or more seconds, or cause an increase in the average delay for any of the critical movements of 6 seconds or more, or degrade to worse than LOS E (i.e., F).
- At a study, signalized intersection for all areas where the level of service is LOS F, the project would cause (a) the total intersection average vehicle delay to increase by 2 or more seconds, or (b) an increase in average delay for any of the critical movements of 4 seconds or more; or (c) the volume-to-capacity ("V/C") ratio exceeds 3 percent (but only if the delay values cannot be measured accurately).
- At a study, unsignalized intersection the project would add ten (10) or more vehicles and after project completion satisfy the Caltrans peak hour volume warrant.
- Cause a roadway segment on the Metropolitan Transportation System to operate at LOS F or increase the V/C ratio by more than 3 percent for a roadway segment that would operate at LOS F without the project.

A project's contribution to cumulative impacts is considered significant when the project exceeds at least one of the intersection-related thresholds listed above under Cumulative Year 2015 or 2030 Baseline Plus Project conditions.

[28] Level of service and delay calculations for local intersections should be based on the *Highway Capacity Manual*, Transportation Research Board, National Research Council, 2000 edition.

(2) Other Thresholds.

- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
- Substantially increase traffic hazards to motor vehicles, bicycles, or pedestrians due to a design feature (e.g., sharp curves or dangerous intersections) that does not comply with Caltrans design standards or incompatible uses (e.g., farm equipment).
- Result in less than two emergency access routes for streets exceeding 600 feet in length.
- Fundamentally conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle routes).

b. Intersection Traffic Load and Capacity Analysis. The analysis of intersection impacts is based on the process established by the City to prepare environmental analyses. The Cumulative Year 2015 and 2030 intersection impacts were assessed using the latest ACCMA Countywide Travel Demand Model (Countywide Model) released in March 2007. Land use, employment, and population projections in the North Oakland area have been updated by Hausrath Economic Group (HEG). The updated land use database includes other approved and pending developments in the area surrounding the project site. The Countywide Model, as modified by HEG, was used to forecast Cumulative Year 2015 and 2030 AM and PM peak-hour traffic volumes at the local intersections for the baseline conditions

The main inputs to the Cumulative Year 2015 and 2030 forecasting processes are the model outputs from the updated CMA Countywide Model and the existing traffic counts. However, these model forecasts are not used directly to yield intersection turning movements. The CMA model outputs are instead used as an input into the "Furnessing" process, which "grows" existing turning movement volumes to reflect increases in roadway link volumes determined from the CMA model.[29] In each scenario (Cumulative Year 2015 and Cumulative Year 2030), two versions of the CMA model were run – 2005 and the analysis year. The 2005 model corresponds to the existing level of development within the project study area. The roadway segment growth between the 2005 and 2015 (and 2030) model runs is then added to the existing turning movements based on the existing proportions between left-turn/through/right-turn movements. In this way, the Cumulative Year 2015 and 2030

[29] The Furness technique is used to modify projected (future) intersection turning movement volumes based upon a comparison of existing traffic volume counts and the travel demand model calibrated 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 existing counts and model calibrated turning movements. This process improves the level of confidence in the forecasted future turning movement volumes.

analyses account for past, present, approved, pending, and reasonably foreseeable future development.

The Cumulate Year 2015 and Year 2030 Baseline No Project forecasts assume no change at the project site. Because the forecasts are based on existing traffic counts, traffic from the existing uses on the site are represented in the Cumulative Year 2015 and Year 2030 Baseline No Project forecasts.

(1) Existing Plus Project Conditions Intersection Level of Service Analysis. Traffic generated by the project was added to the existing intersection volumes to estimate the Existing Plus Project condition intersection traffic volumes. Figure IV.C-16 shows the AM and PM peak hour intersection volumes under the Existing Plus Project conditions. No roadway modifications are assumed to occur in this scenario except the modifications made by the proposed project, and planned improvements on 40th Street and at Shattuck Avenue/52nd Street intersection. Table IV.C-13 summarizes level of service at the study intersections under Existing and Existing Plus Project scenarios. The level of service calculation sheets are presented in Appendix F.

As shown in Table IV.C-13, all signalized and unsignalized study intersections would operate at LOS D or better during both AM and PM peak hours in the Existing Plus Project scenario. Thus, there are no significant impacts under Existing Plus Project conditions.

(2) Cumulative Year 2015 Intersection Level of Service Analysis.[30] The Cumulative Year 2015 intersection volumes were estimated using the methodology previously described. An overview of the Cumulative Year 2015 Baseline No Project scenario is provided, followed by an analysis of the Cumulative Year 2015 Baseline Plus Project scenario.

Cumulative Year 2015 Baseline No Project. Figure IV.C-17 shows the AM and PM peak hour intersection volumes under the Cumulative Year 2015 Baseline No Project conditions. No roadway modifications are assumed to occur except the modifications on 40th Street and at the Shattuck Avenue/52nd Street (#1) and Broadway/MacArthur Boulevard (#22) intersections as described previously. Table IV.C-14 summarizes level of service at the study intersections under the Cumulative Year 2015 Baseline No Project conditions. The level of service calculation sheets are presented in Appendix F.

As shown in Table IV.C-14, most study intersections are projected to operate at LOS D or better in Cumulative Year 2015 Baseline No Project scenario, except the following intersections:

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[30] See page 123 for description of the scenario.

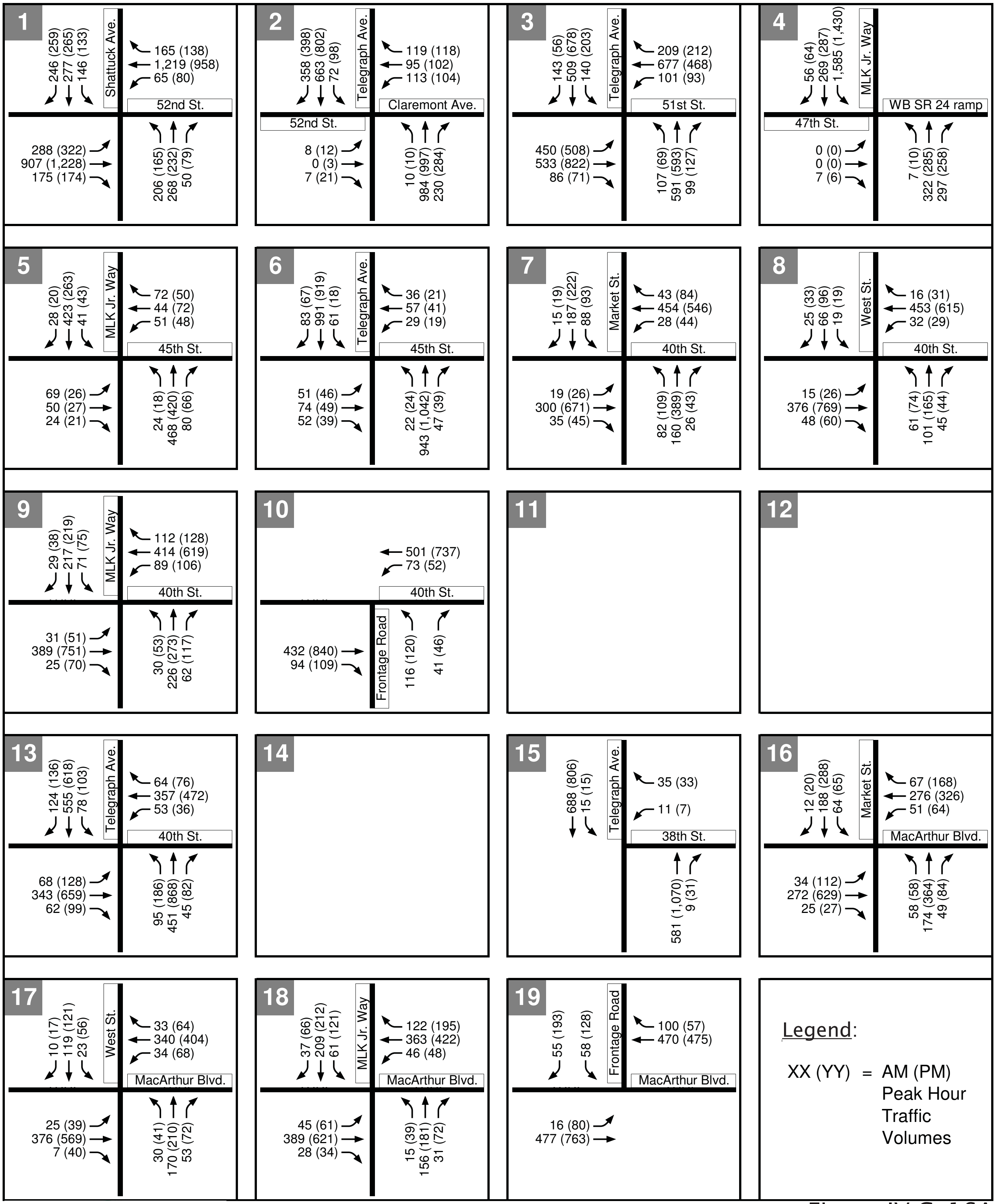

Figure IV.C-16A

MacArthur Village Project EIR
Study Intersections (1-19)
Existing Plus Project Conditions

SOURCE: FEHR & PEERS, 2007.
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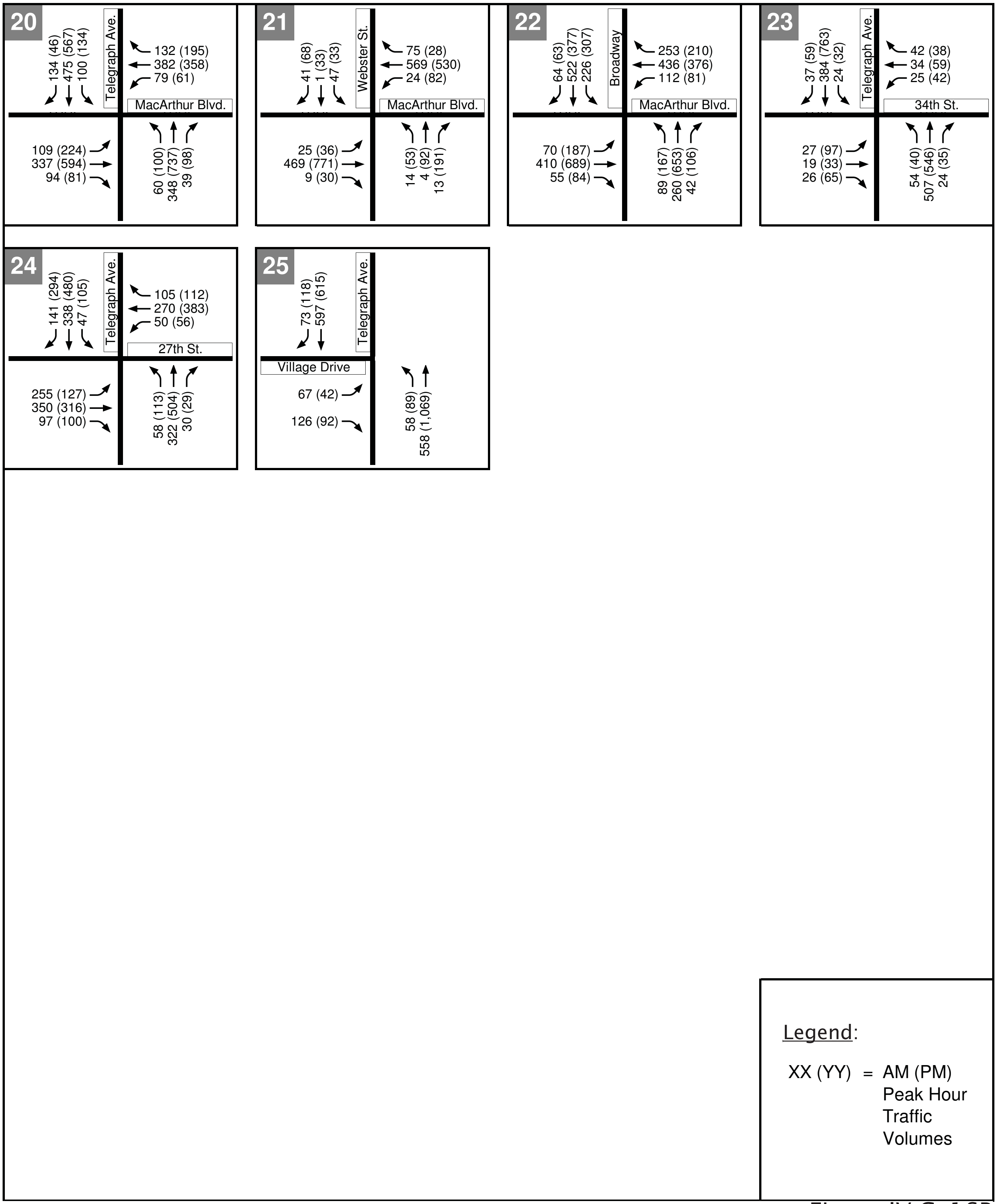

Figure IV.C-16B

MacArthur Village Project EIR
Study Intersections (20-25),
Existing Plus Project Conditions

SOURCE: FEHR & PEERS, 2007.

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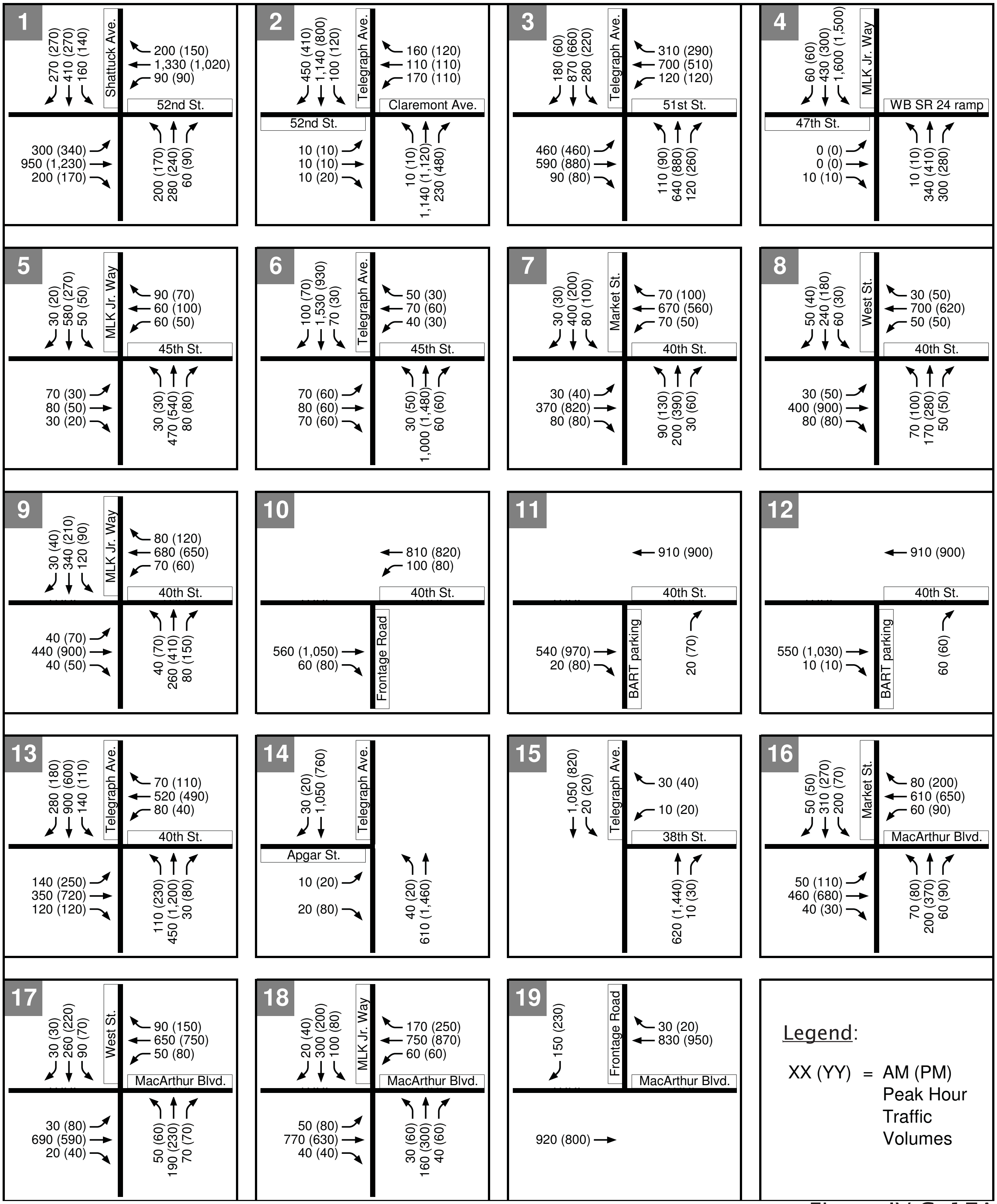

Figure IV.C-17A

MacArthur Village Project EIR
Study Intersections (1-19)
Cumulative Year 2015 Baseline No Project Conditions

SOURCE: FEHR & PEERS, 2007.
MGB0701 MacArthur BART Transit Village\PRODUCTS\DEIR\Admin\MacArthur BART Graphics Files\figures

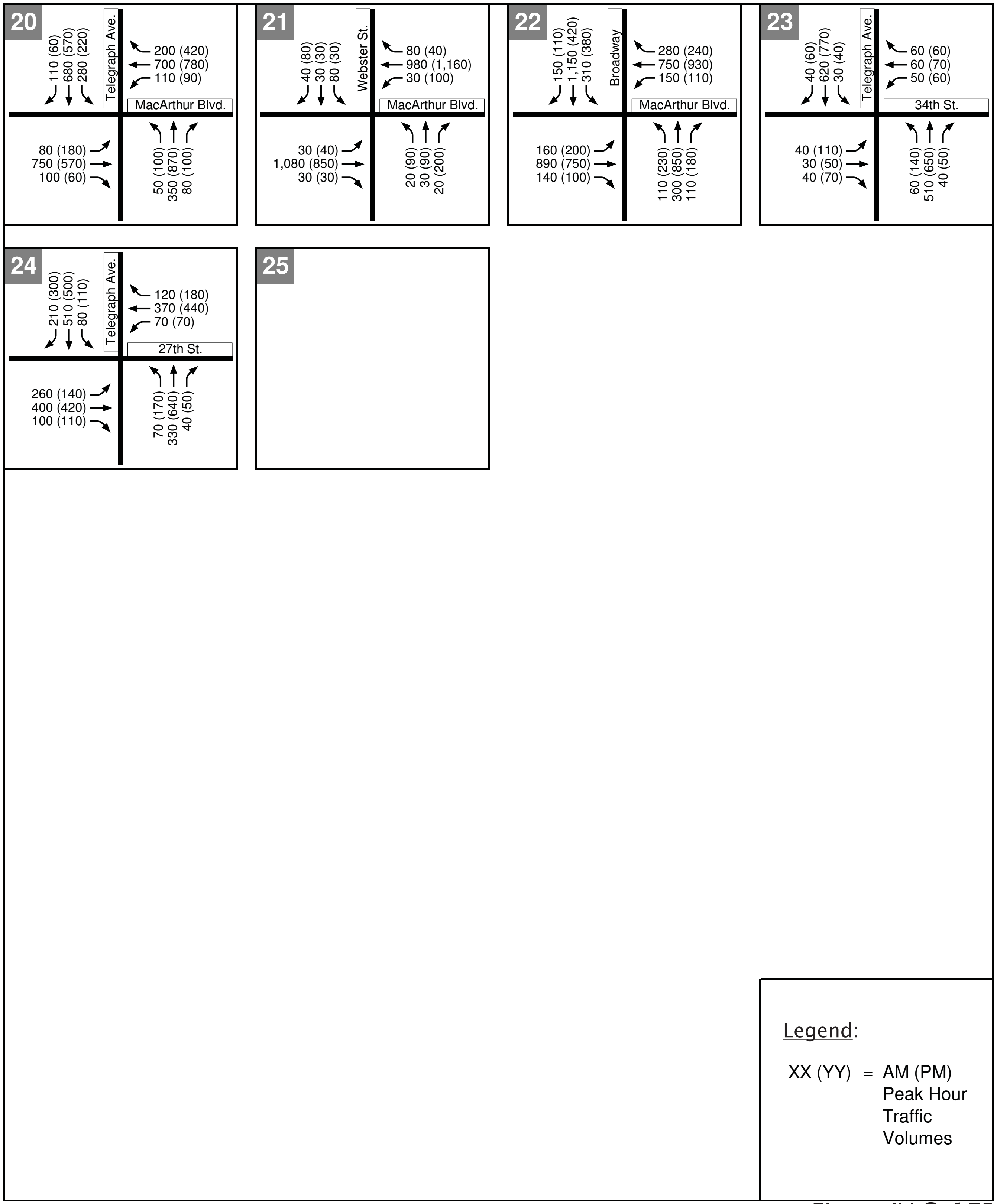

Figure IV.C-17B

MacArthur Village Project EIR
Study Intersections (20-25)
Cumulative Year 2015 Baseline No Project Conditions

SOURCE: FEHR & PEERS, 2007.

Table IV.C-13 Existing Plus Project Intersection Level of Service Summary

No.	Intersection	Traffic Control	Time Period	Existing No Project		Existing Plus Project		Significance Yes/No
				LOS	Delay	LOS	Delay	
1	Shattuck Avenue/52nd Street	Signal	AM PM	D D	54.3 51.3	D D	49.8 38.2	No No
2	Telegraph Avenue/52nd Street/ Claremont Avenue	Signal	AM PM	B B	17.7 18.8	B C	17.7 20.2	No No
3	Telegraph Avenue/51st Street	Signal	AM PM	D D	39.1 47.1	D D	39.2 47.5	No No
4	Martin Luther King Jr. Way/ 47th Street/Westbound SR-24 On-Ramp	Signal	AM PM	C B	26.8 11.0	C B	33.5 11.1	No No
5	Martin Luther King Jr. Way/ 45th Street	Signal	AM PM	A A	9.0 9.0	A A	9.0 9.1	No No
6	Telegraph Avenue/45th Street	Signal	AM PM	B A	10.3 6.8	A A	9.7 7.0	No No
7	Market Street/40th Street	Signal	AM PM	B C	17.6 25.0	B C	17.8 25.2	No No
8	West Street/40th Street	Signal	AM PM	B B	13.8 17.4	B B	13.8 17.4	No No
9	Martin Luther King Jr. Way/ 40th Street	Signal	AM PM	B B	13.9 19.9	B B	13.9 16.5	No No
10	Frontage Road/40th Street	SSSC/ Signal[a]	AM PM	B B	10.2 13.8	B A	12.5 8.7	No No
11	BART parking access (west)/ 40th Street	SSSC	AM PM	B C	13.8 17.5	N/A	N/A	
12	BART parking access (east)/ 40th Street	SSSC	AM PM	B C	14.6 17.9	N/A	N/A	
13	Telegraph Avenue/40th Street	Signal	AM PM	C C	23.9 28.6	B C	18.9 25.7	No No
14	BART parking access/ Telegraph Avenue	SSSC	AM PM	C C	19.3 21.4	N/A	N/A	
15	Telegraph Avenue/38th Street	SSSC	AM PM	B C	14.8 21.6	B C	14.7 24.6	No No
16	Market Street/MacArthur Boulevard	Signal	AM PM	B C	16.8 31.6	B C	16.8 34.1	No No
17	West Street/MacArthur Boulevard	Signal	AM PM	B B	12.3 14.1	B B	12.4 14.4	No No
18	Martin Luther King Jr. Way/ MacArthur Boulevard	Signal	AM PM	A B	9.0 11.5	A B	9.9 13.3	No No

Table IV.C-13 Existing Plus Project Intersection Level of Service Summary

No.	Intersection	Traffic Control	Time Period	Existing No Project		Existing Plus Project		Signifi-cance Yes/No
				LOS	Delay	LOS	Delay	
19	Frontage Road/ MacArthur Boulevard	SSSC/ Signal[a]	AM PM	B C	14.6 15.7	A B	7.0 14.1	No No
20	Telegraph Avenue/ MacArthur Boulevard	Signal	AM PM	B B	18.8 14.4	B D	15.5 39.0	No No
21	Webster Street/ MacArthur Boulevard	Signal	AM PM	A B	8.7 11.4	A B	8.7 11.5	No No
22	Broadway/ MacArthur Boulevard	Signal	AM PM	D D	54.7 42.0	D D	54.6 42.0	No No
23	Telegraph Avenue/34th Street	Signal	AM PM	A B	6.8 13.0	A B	7.1 12.9	No No
24	Telegraph Avenue/27th Street	Signal	AM PM	C C	23.1 21.8	C C	22.9 21.8	No No
25	Telegraph Avenue/ Village Drive	Signal	AM PM	N/A	N/A	B A	15.7 8.1	No No

Notes: N/A = Intersection does not exist under this scenario.
Bold indicates significant impact.
The LOS/Delay for Side-Street Stop-Control (SSSC) intersections represents the worst movement or approach; for Signalized intersections, the LOS/Delay represents overall intersection.
[a] Intersection is currently side-street stop-controlled, but will be signalized as part of the project.

Source: Fehr & Peers, 2007.

#1 The signalized Shattuck Avenue/52nd Street intersection would operate at LOS E during the AM peak hour.

#3 The signalized Telegraph Avenue/51st Street intersection would operate at LOS E during both AM and PM peak hours.

#14 The side-street stop-controlled eastbound approach of Telegraph Avenue/BART Parking Access intersection would operate at LOS E during the AM peak hour.

#15 The side-street stop-controlled westbound approach of Telegraph Avenue/38th Street intersection would operate at LOS F during the PM peak hour.

#22 The signalized Broadway/MacArthur Boulevard intersection would operate at LOS E during the PM peak hour.

Cumulative Year 2015 Baseline Plus Project Conditions Intersection Level of Service Analysis. Traffic generated by the project was added to the Cumulative 2015 Baseline No Project intersection volumes to estimate the Cumulative 2015 Baseline Plus

Table IV.C-14 Cumulative Year 2015 Baseline Intersection Level of Service Summary

No.	Intersection	Traffic Control	Time Period	Cumulative Year 2015 Baseline No Project		Cumulative Year 2015 Baseline Plus Project		Significance Yes/No
				LOS	Delay	LOS	Delay	
1	Shattuck Avenue/ 52nd Street	Signal	AM PM	E D	61.1 42.5	E D	61.6 43.3	No No
2	Telegraph Avenue/ 52nd Street/ Claremont Avenue	Signal	AM PM	C D	25.1 37.3	C D	25.7 38.9	No No
3	Telegraph Avenue/ 51st Street	Signal	AM PM	E E	65.5 64.6	E **E**	66.7 **66.8***	No **Yes**
4	Martin Luther King Jr. Way/ 47th Street/ Westbound SR-24 On-Ramp	Signal	AM PM	C B	32.8 13.7	D B	39.6 14.5	No No
5	Martin Luther King Jr. Way/ 45th Street	Signal	AM PM	A A	9.5 9.7	A A	9.6 9.7	No No
6	Telegraph Avenue/ 45th Street	Signal	AM PM	B A	12.1 10.0	B B	11.7 10.3	No No
7	Market Street/40th Street	Signal	AM PM	C C	20.0 25.1	C C	20.4 25.3	No No
8	West Street/40th Street	Signal	AM PM	B C	16.4 20.0	B C	16.4 21.0	No No
9	Martin Luther King Jr. Way/ 40th Street	Signal	AM PM	B B	14.8 18.9	B C	15.1 19.2	No No
10	Frontage Road/ 40th Street	Signal	AM PM	A B	7.2 10.1	A A	8.9 7.5	No No
11	BART parking access west)/ 40th Street	SSSC	AM PM	B C	12.8 15.3	N/A	N/A	
12	BART parking access (east)/ 40th Street	SSSC	AM PM	B C	13.9 15.4	N/A	N/A	
13	Telegraph Avenue/ 40th Street	Signal	AM PM	C D	29.1 44.2	C D	26.4 42.3	No No
14	BART parking access/ Telegraph Avenue	SSSC	AM PM	E D	40.4 28.2	N/A	N/A	
15	Telegraph Avenue/ 38th Street	SSSC	AM PM	C F	15.6 81.3	C F	15.3 87.8	No No
16	Market Street/ MacArthur Boulevard	Signal	AM PM	D D	38.9 53.6	D **E**	40.0 **55.3**	No **Yes**
17	West Street/ MacArthur Boulevard	Signal	AM PM	B B	14.7 17.0	B B	15.0 18.3	No No
18	Martin Luther King Jr. Way/ MacArthur Boulevard	Signal	AM PM	A B	9.1 14.7	B B	10.4 15.5	No No

Table IV.C-14 Cumulative Year 2015 Baseline Intersection Level of Service Summary

No.	Intersection	Traffic Control	Time Period	Cumulative Year 2015 Baseline No Project		Cumulative Year 2015 Baseline Plus Project		Significance Yes/No
				LOS	Delay	LOS	Delay	
19	Frontage Road/ MacArthur Boulevard	SSSC/ Signal[a]	AM PM	B C	14.8 21.6	A B	7.3 11.2	No No
20	Telegraph Avenue/ MacArthur Boulevard	Signal	AM PM	C D	21.7 39.5	C D	25.9 39.1	No No
21	Webster Street/ MacArthur Boulevard	Signal	AM PM	B B	10.3 12.2	B B	10.3 12.3	No No
22	Broadway/ MacArthur Boulevard	Signal	AM PM	D E	47.7 60.5	D E	50.5 60.6	No No
23	Telegraph Avenue/ 34th Street	Signal	AM PM	A B	9.4 15.5	A B	9.6 15.3	No No
24	Telegraph Avenue/ 27th Street	Signal	AM PM	C C	24.8 23.7	C C	24.8 23.9	No No
25	Telegraph Avenue/ Village Drive	Signal	AM PM	N/A	N/A	B B	10.1 17.2	No No

Notes: N/A = Intersection does not exist under this scenario.
Bold indicates significant impact.
The LOS/Delay for Side-Street Stop-Control (SSSC) intersections represents the worst movement or approach; for Signalized intersections, the LOS/Delay represents overall intersection.
* The average delay of a critical movement would increase by more than 6 seconds.
[a] Intersection is currently side-street stop-controlled, but will be signalized as part of the project.

Source: Fehr & Peers, 2007.

Project condition intersection traffic volumes. Figure IV.C-18 shows the AM and PM peak hour intersection volumes under the Cumulative 2015 Baseline Plus Project conditions. No roadway modifications are assumed to occur except the modifications made by the proposed project. Table IV.C-14 compares the intersection level of service under Cumulative Year 2015 Baseline Plus Project conditions to the Cumulative Year 2015 Baseline No Project conditions. The level of service calculation sheets are presented in Appendix F.

As shown in Table IV.C-14, most study intersections would continue to operate at LOS D or better during both AM and PM peak hours under Cumulative Year 2015 Baseline Plus Project conditions. Although the following intersections would operate at an unacceptable LOS E or LOS F under Cumulative Year 2015 Baseline Plus Project conditions, the proposed project would not cause a significant impact.

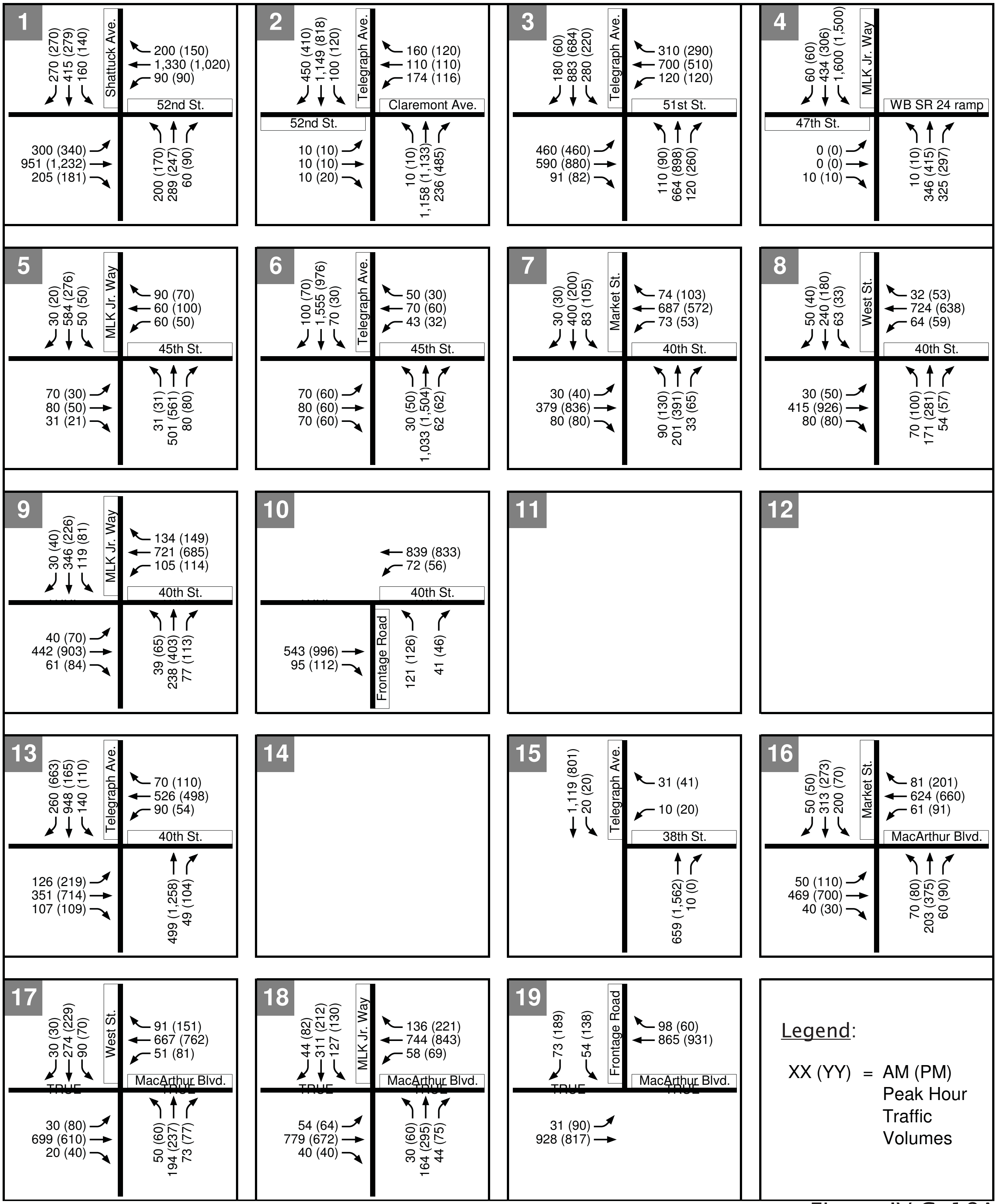

Figure IV.C-18A

MacArthur Village Project EIR

Study Intersections (1–19)

Cumulative Year 2015 Baseline Plus Project Conditions

SOURCE: FEHR & PEERS, 2007.

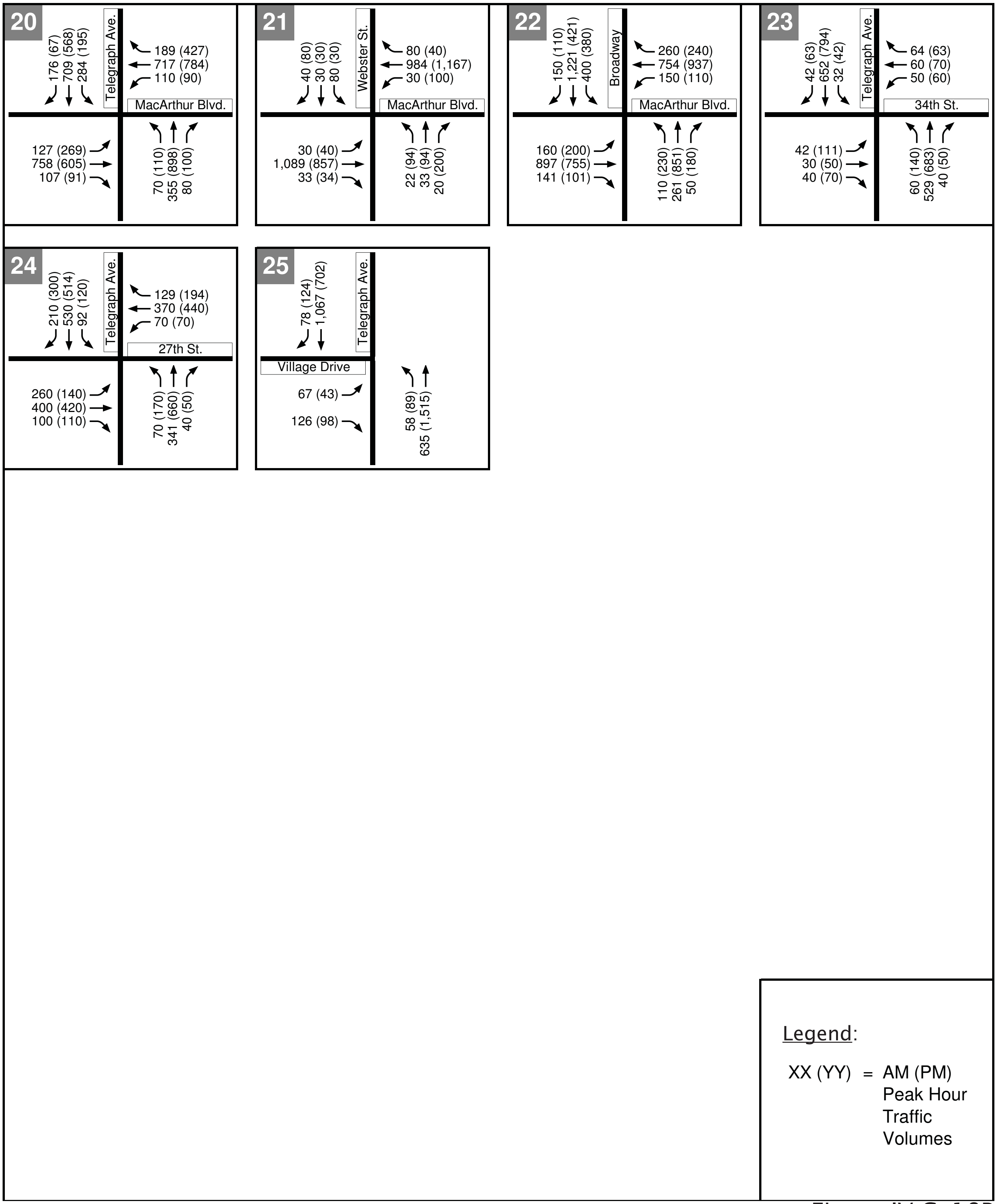

Figure IV.C-18B

MacArthur Village Project EIR

Study Intersections (20-25)

Cumulative Year 2015 Baseline Plus Project Conditions

SOURCE: FEHR & PEERS, 2007.

#1 The signalized Shattuck Avenue/52nd Street intersection would continue to operate at LOS E with the addition of project traffic during the AM peak hour. However, the project would not cause a significant impact because the addition of project traffic would not increase total intersection average delay by more than the 4-second threshold of significance or increase average delay for any of the critical movements by more than the 6-second threshold of significance.

#15 The side-street stop-controlled westbound approach of Telegraph Avenue/38th Street intersection would continue to operate at LOS F with the addition of project traffic during the PM peak hour. However, the intersection would not satisfy the Caltrans peak hour signal warrant after completion of the project.

#22 The signalized Broadway/MacArthur Boulevard intersection would continue to operate at LOS E with the addition of project traffic during the PM peak hour. However, the project would not cause a significant impact because the addition of project traffic would not increase total intersection average delay by more than the 4-second threshold of significance or increase average delay for any of the critical movements by more than the 6-second threshold of significance.

The project would eliminate the Telegraph Avenue/BART Parking Access intersection (#14) which would operate at LOS E during the AM peak hour under Cumulative Year 2015 Baseline No Project conditions.

The project would result in the following impacts under Cumulative Year 2015 conditions. Table IV.C-15 summarizes intersections LOS and delay after the implementation of the mitigation measures.

Impact TRANS-1: The addition of project traffic would cause a significant impact at the Telegraph Avenue/51st Street intersection (#3) under Cumulative Year 2015 Baseline Plus Project conditions. The project would contribute to LOS E operations during the PM peak hour and increase critical movement average delay by more than 6 seconds. (S)

Mitigation Measure TRANS-1: Optimize signal timing (i.e., adjust the allocation of green time for each intersection approach) at the Telegraph Avenue/51st Street intersection and coordinate signal phasing and timing with the adjacent Telegraph Avenue/52nd Street and Claremont Avenue intersection and other intersections in the same coordination group. To implement this measure, the project sponsor shall submit a signal optimization plan to City of Oakland's Transportation Services Division for review and approval. The plan shall consist of signal timing parameters for the signals in the coordination group. The project sponsor shall fund the cost of preparing and implementing the plan.

Table IV.C-15 Cumulative Year 2015 Baseline Plus Project Mitigated Intersection Level of Service Summary

No.	Intersection	Traffic Control	Time Period	Cumulative Year 2015 Baseline Plus Project		Cumulative Year 2015 Baseline Plus Project Mitigated	
				LOS	Delay	LOS	Delay
3	Telegraph Avenue/ 51st Street	Signal	AM PM	E **E**	66.7 **66.8**	E E	66.7 63.2
16	Market Street/MacArthur Boulevard	Signal	AM PM	D **E**	40.0 **55.3**	D C	40.0 24.4

Notes: **Bold** indicates significant impact.
The LOS/Delay for signalized intersections, the LOS/Delay represents overall intersection.

Source: Fehr & Peers, 2007.

As shown in Table IV.C-15, after implementation of this measure, the intersection would continue to operate at LOS E during the PM peak hour. However, the increase in average delay for the critical movements would be reduced to less than the 6-second threshold of significance. No significant effects would result from implementation of this measure. (LTS)

Impact TRANS-2: The addition of project traffic would cause a significant impact at the Market Street/MacArthur Boulevard intersection (#16) under Cumulative Year 2015 Baseline Plus Project conditions. The project would degrade intersection operations from LOS D to LOS E during the PM peak hour. (S)

Mitigation Measure TRANS-2: Change the signal cycle length to 90 seconds and optimize signal timing (i.e., adjust the allocation of green time for each intersection approach) at the Market Street/MacArthur Boulevard intersection. To implement this measure, the project sponsor shall submit a signal optimization plan to City of Oakland's Transportation Services Division for review and approval. The plan shall consist of signal timing parameters for the Market Street/MacArthur Boulevard intersection. The project sponsor shall fund the cost of preparing and implementing the plan.

As shown in Table IV.C-15, after implementation of this measure, the intersection would operate at LOS C during the PM peak hours. No significant effects would result from implementation of this measure. (LTS)

(3) Cumulative Year 2030 Condition Intersection Level of Service Analysis.[31] The Cumulative 2030 intersection volumes were estimated using the methodology previously described. An overview of the Cumulative Year 2030 Baseline No Project scenario is provided, followed by an analysis of the Cumulative Year 2030 Baseline Plus Project scenario.

Cumulative Year 2030 Baseline No Project. Figure IV.C-19 shows the AM and PM peak hour intersection volumes under the Cumulative 2030 Baseline No Project conditions. No roadway modifications are assumed to occur except the modifications on 40th Street and at the Shattuck Avenue/52nd Street (#1) and Broadway/MacArthur Boulevard (#22) intersection as described previously. Table IV.C-16 summarizes level of service at the study intersections under the Cumulative Year 2030 Baseline No Project conditions. The level of service calculation sheets are presented in Appendix F.

As shown in Table IV.C-16, the majority of the study intersections would continue to operate at LOS D or better under Cumulative Year 2030 Baseline No Project conditions except the following intersections;

#1 The signalized Shattuck Avenue/52nd Street intersection would operate at LOS F during the AM peak hour.

#2 The signalized Telegraph Avenue/52nd Street and Claremont Avenue intersection would operate at LOS F during the AM peak hour and LOS E during the PM peak hour.

#3 The signalized Telegraph Avenue/51st Street intersection would operate at LOS F during both AM and PM peak hours.

#7 The signalized Market Street/40th Street intersection would operate at LOS E during the AM peak hour.

#13 The signalized Telegraph Avenue/40th Street intersection would operate at LOS E during the AM peak hour and LOS F during the PM peak hour.

#14 The side-street stop-controlled eastbound approach of Telegraph Avenue/BART Parking Access intersection would operate at LOS F during the AM peak hour and LOS E during the PM peak hour.

#15 The side-street stop-controlled westbound approach of Telegraph Avenue/38th Street intersection would operate at LOS F during the PM peak hour.

#16 The signalized Market Street/MacArthur Boulevard intersection would operate at LOS F during both AM and PM peak hours.

#20 The signalized Telegraph Avenue/MacArthur Boulevard intersection would operate at LOS F during the PM peak hour.

[31] See page 123 for description of the scenario.

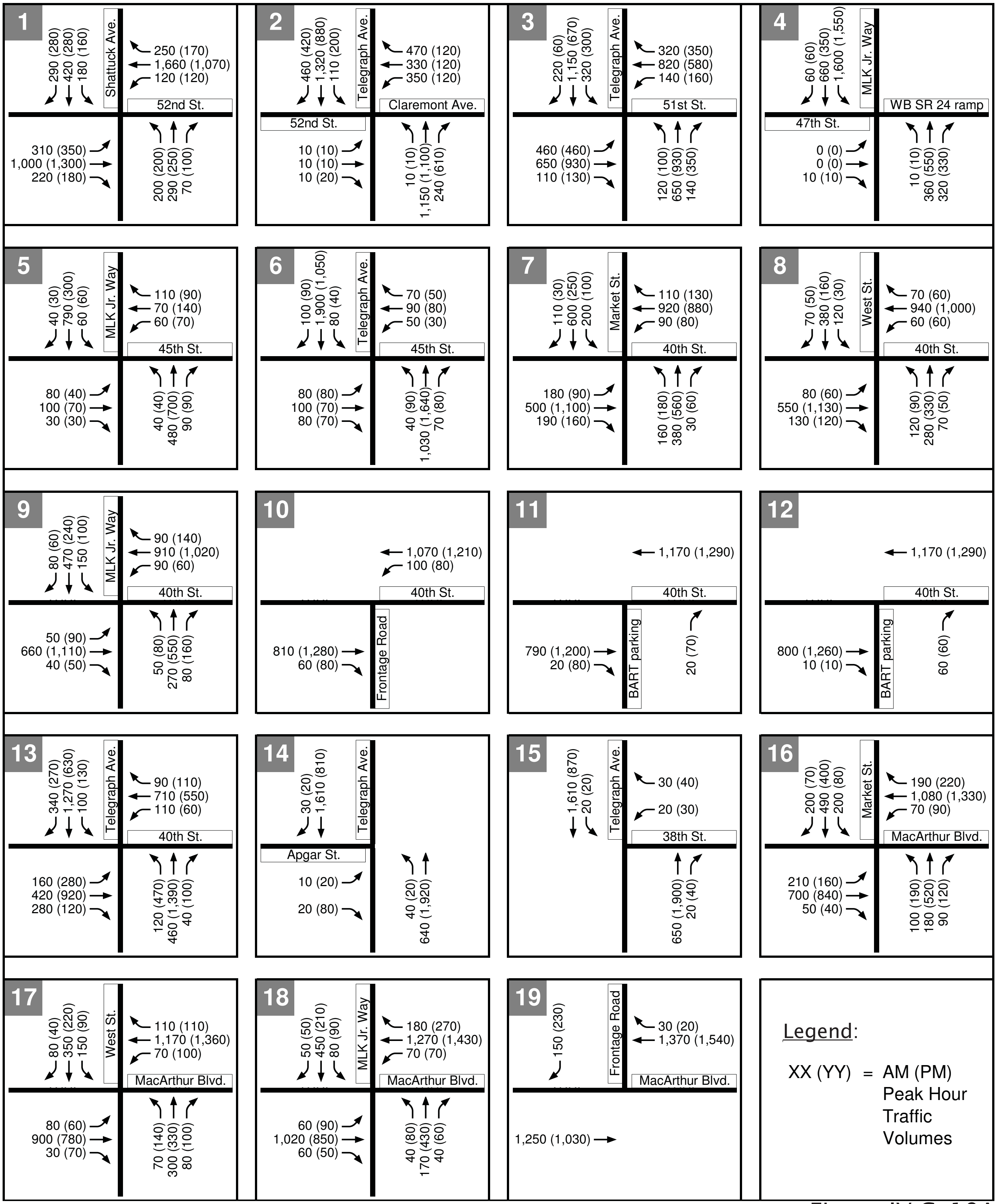

Figure IV.C-19A

MacArthur Village Project EIR
Study Intersections (1-19)
Cumulative Year 2030 Baseline No Project Conditions

SOURCE: FEHR & PEERS, 2007.
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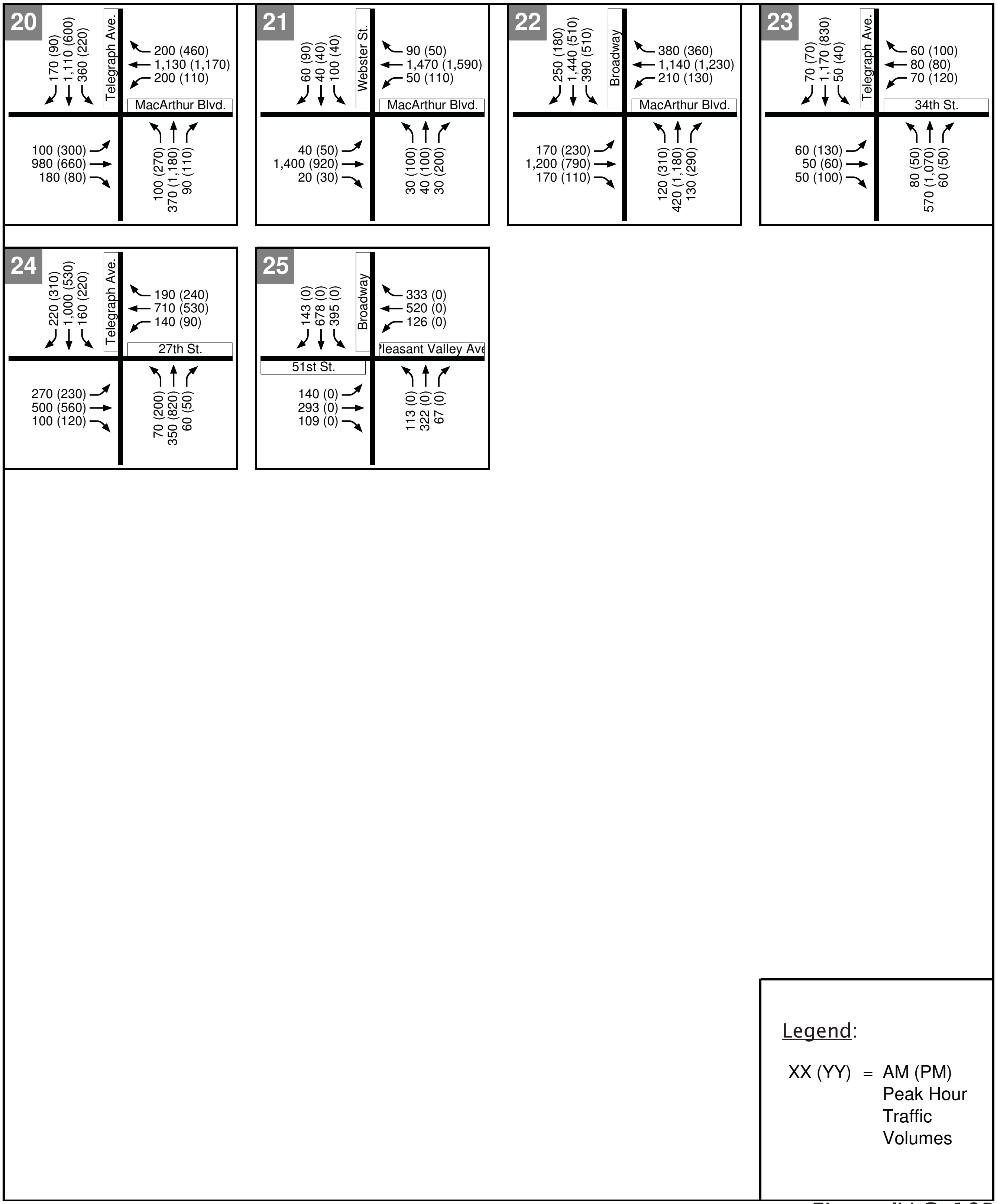

Figure IV.C-19B

MacArthur Village Project EIR
Study Intersections (20-25)
Cumulative Year 2030 Baseline No Project Conditions

SOURCE: FEHR & PEERS, 2007.
MGB0701 MacArthur BART Transit Village\PRODUCTS\DEIR\Admin\MacArthur BART Graphics Files\figures

#22 The signalized Broadway/MacArthur Boulevard intersection would operate at LOS F during both AM and PM peak hours.

Cumulative Year 2030 Baseline Plus Project. Traffic generated by the project was added to the Cumulative Year 2030 Baseline No Project intersection volumes to estimate the Cumulative Year 2030 Baseline Plus Project intersection traffic volumes. Figure IV.C-20 shows the AM and PM peak hour intersection volumes under the Cumulative Year 2030 Baseline Plus Project conditions. No roadway modifications are assumed to occur except the modifications made by the proposed project. Table IV.C-16 compares the intersection level of service under Cumulative Year 2030 Baseline Plus Project conditions to the Cumulative Year 2030 Baseline No Project conditions. The level of service calculation sheets are presented in Appendix F.

As shown in Table IV.C-16, most study intersections would continue to operate at LOS D or better during both AM and PM peak hours under Cumulative Year 2030 Baseline Plus Project conditions. Although the following intersections would operate at unacceptable LOS E or LOS F under Cumulative Year 2030 Baseline Plus Project conditions, the proposed project would not cause a significant impact.

#1 The signalized Shattuck Avenue/52nd Street intersection would continue to operate at LOS F with the addition of project traffic during the AM peak hour. However, the project would not cause a significant impact because the addition of project traffic would not increase total intersection average delay by more than the 2-second threshold of significance or increase average delay for any of the critical movements by more than the 4-second threshold of significance.

#7 The signalized Market Street/40th Street intersection would continue to operate at LOS E with the addition of project traffic during the AM peak hour. However, the project would not cause a significant impact because the addition of project traffic would not increase total intersection average delay by more than the 4-second threshold of significance or increase average delay for any of the critical movements by more than the 6-second threshold of significance.

#15 The side-street stop-controlled westbound approach of Telegraph Avenue/38th Street intersection would continue to operate at LOS F with the addition of project traffic during the PM peak hour. However, the intersection would not satisfy the Caltrans peak hour signal warrant after completion of the project.

The project would also eliminate the Telegraph Avenue/BART Parking Access intersection (#14) which would operate at LOS E during the AM peak hour under Cumulative Year 2030 Baseline No Project conditions.

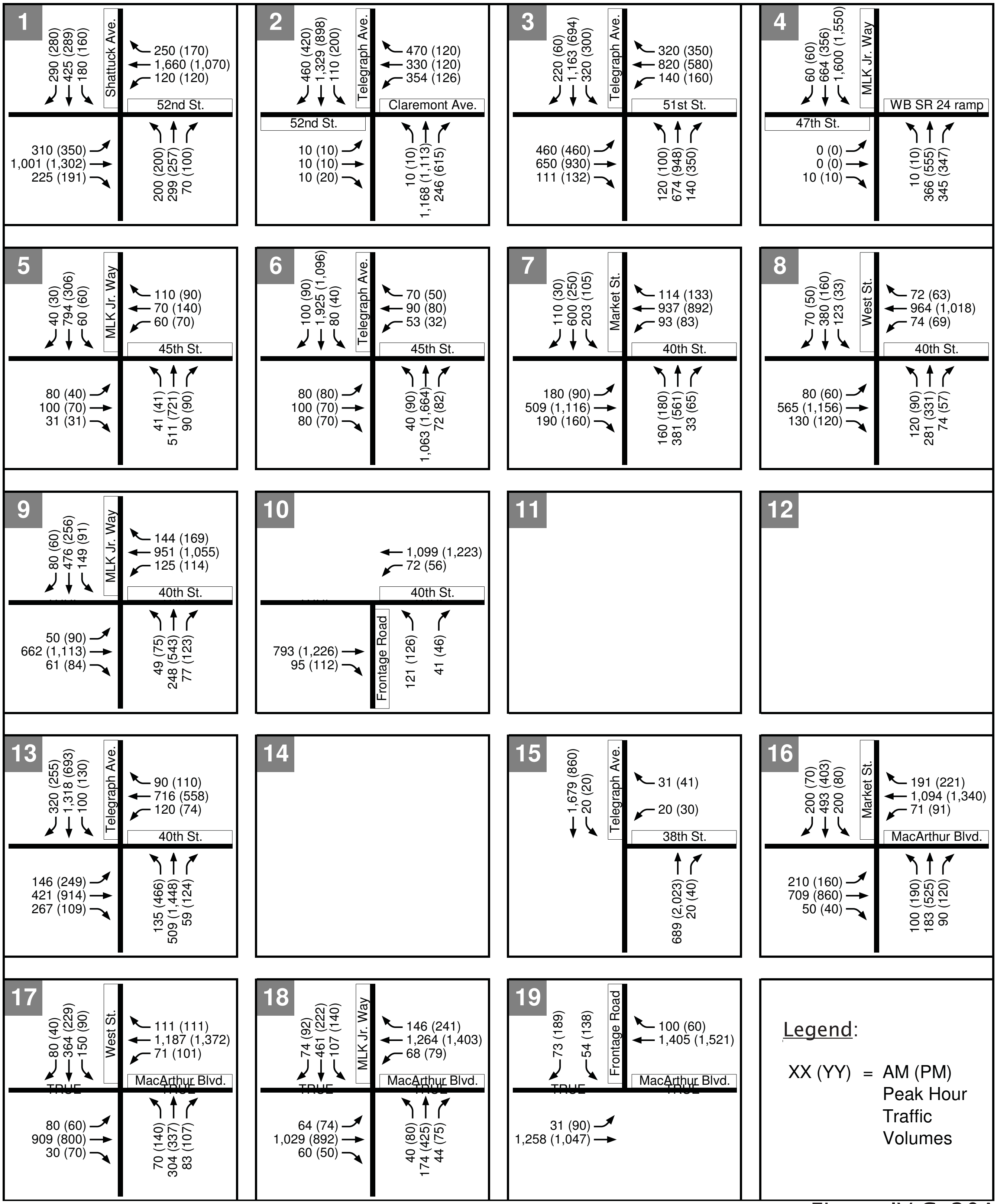

Figure IV.C-20A

MacArthur Village Project EIR
Study Intersections (1-19)
Cumulative Year 2030 Baseline Plus Project Conditions

SOURCE: FEHR & PEERS, 2007.
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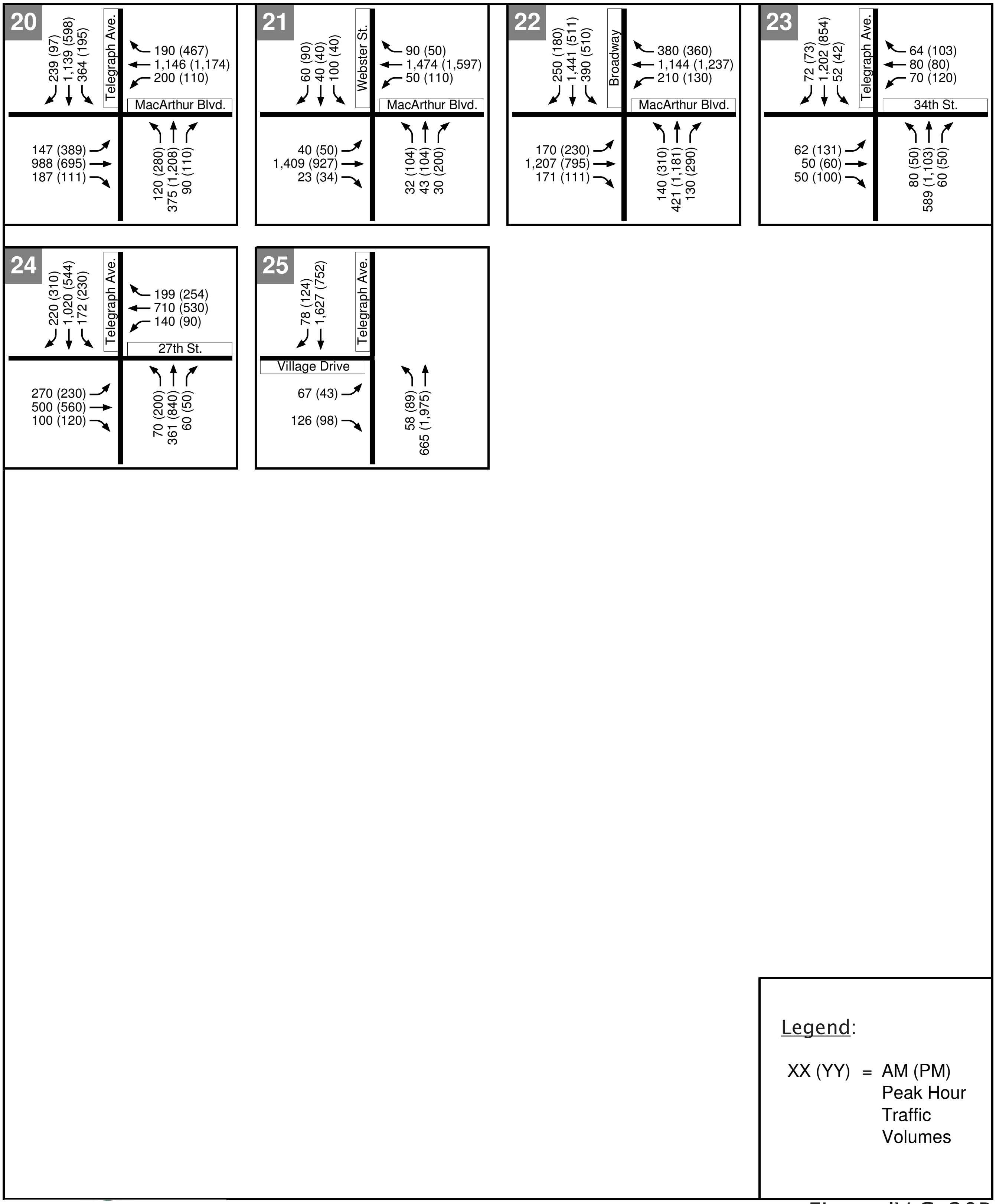

Figure IV.C-20B

MacArthur Village Project EIR
Study Intersections (20-25).
Cumulative Year 2030 Baseline Plus Project Conditions

SOURCE: FEHR & PEERS, 2007.
MGB0701 MacArthur BART Transit Village\PRODUCTS\DEIR\Admin\MacArthur BART Graphics Files\figures

Table IV.C-16 Cumulative Year 2030 Baseline Intersection Level of Service Summary

No.	Intersection	Traffic Control	Time Period	Cumulative Year 2030Baseline No Project		Cumulative Year 2030 Baseline Plus Project		Signifi-cance Yes/No
				LOS	Delay	LOS	Delay	
1	Shattuck Avenue/52nd Street	Signal	AM PM	F D	82.4 48.7	F D	82.8 49.6	No No
2	Telegraph Avenue/52nd Street/ Claremont Avenue	Signal	AM PM	F E	>120 70.1	**F** **E**	**>120*** **72.9***	**Yes** **Yes**
3	Telegraph Avenue/51st Street	Signal	AM PM	F F	>120 110.3	**F** **F**	**>120*** **113.7***	**Yes** **Yes**
4	Martin Luther King Jr. Way/ 47th Street/Westbound SR-24 On-Ramp	Signal	AM PM	D C	39.3 31.6	D D	46.7 35.4	No No
5	Martin Luther King Jr. Way/ 45th Street	Signal	AM PM	B B	10.6 11.1	B B	10.7 11.2	No No
6	Telegraph Avenue/45th Street	Signal	AM PM	B C	16.8 26.7	B C	17.2 30.7	No No
7	Market Street/40th Street	Signal	AM PM	E D	63.3 35.9	E D	66.0 36.7	No No
8	West Street/40th Street	Signal	AM PM	B D	18.1 52.8	B **E**	18.3 **58.2**	No **Yes**
9	Martin Luther King Jr. Way/ 40th Street	Signal	AM PM	B C	17.3 23.0	C C	20.3 31.7	No No
10	Frontage Road/40th Street	Signal	AM PM	A B	9.0 13.0	B A	12.1 9.6	No No
11	BART parking access (west)/ 40th Street	SSSC	AM PM	B C	13.5 15.7	N/A	N/A	
12	BART parking access (east)/ 40th Street	SSSC	AM PM	B C	14.6 15.6	N/A	N/A	
13	Telegraph Avenue/40th Street	Signal	AM PM	E F	74.9 92.2	**F** **F**	82.8 **90.5***	**Yes** **Yes**
14	BART parking access/ Telegraph Avenue	SSSC	AM PM	F E	>90 47.0	N/A	N/A	
15	Telegraph Avenue/38th Street	SSSC	AM PM	C F	24.0 >90	D F	27.2 >90	No No
16	Market Street/ MacArthur Boulevard	Signal	AM PM	F F	>120 >120	**F** **F**	**>120*** **>120***	**Yes** **Yes**
17	West Street/ MacArthur Boulevard	Signal	AM PM	D C	36.7 26.6	D C	36.2 28.1	No No
18	Martin Luther King Jr. Way/ MacArthur Boulevard	Signal	AM PM	B B	10.6 17.7	B C	14.0 25.0	No No

Table IV.C-16 Cumulative Year 2030 Baseline Intersection Level of Service Summary

No.	Intersection	Traffic Control	Time Period	Cumulative Year 2030Baseline No Project		Cumulative Year 2030 Baseline Plus Project		Signifi-cance Yes/No
				LOS	Delay	LOS	Delay	
19	Frontage Road/ MacArthur Boulevard	SSSC/ Signal [a]	AM PM	C C	15.3 17.1	A B	7.2 16.3	No No
20	Telegraph Avenue/ MacArthur Boulevard	Signal	AM PM	D F	50.2 106.5	E F	**63.9** 102.3	**Yes** No
21	Webster Street/ MacArthur Boulevard	Signal	AM PM	B B	12.7 14.1	B B	12.8 14.2	No No
22	Broadway/ MacArthur Boulevard	Signal	AM PM	F F	82.5 119.7	**F** F	**85.0*** >120	**Yes** No
23	Telegraph Avenue/34th Street	Signal	AM PM	B C	11.8 21.7	B C	11.9 21.8	No No
24	Telegraph Avenue/27th Street	Signal	AM PM	D D	46.8 40.2	D D	48.4 44.0	No No
25	Telegraph Avenue/Village Drive	Signal	AM PM	N/A	N/A	B B	15.5 16.8	No No

Notes: N/A = Intersection does not exist under this scenario.
Bold indicates significant impacts.
The LOS/Delay for Side-Street Stop-Control (SSSC) intersections represents the worst movement or approach; for Signalized intersections, the LOS/Delay represents overall intersection.
* The average delay of a critical movement would increase by more than 4 seconds.
[a] Intersection is currently side-street stop-controlled, but will be signalized as part of the project.

Source: Fehr & Peers, 2007.

The project would result in the following impacts under Cumulative Year 2030 conditions. Table IV.C-17 summarizes intersections LOS and delay after the implementation of the mitigation measures.

Impact TRANS-3: The addition of project traffic would cause a significant impact at the Telegraph Avenue/52nd Street and Claremont Avenue intersection (#2) under Cumulative 2030 Baseline Plus Project conditions. The project would contribute to LOS F operations and increase intersection average delay by more than 2 seconds during the AM peak hour; would contribute to LOS E operations and increase critical movement average delay by more than 6 seconds during the PM peak hour. (S)

Table IV.C-17 Cumulative Year 2030 Baseline Plus Project Mitigated Intersection Level of Service Summary

No.	Intersection	Traffic Control	Time Period	Cumulative Year 2030 Baseline Plus Project		Cumulative Year 2030 Baseline Plus Project Mitigated	
				LOS	Delay	LOS	Delay
2	Telegraph Avenue/52nd Street/ Claremont Avenue	Signal	AM PM	**F** **E**	**>120** **72.9**	F C	>120 31.6
3	Telegraph Avenue/51st Street	Signal	AM PM	**F** **F**	**>120** **113.7**	**F** **F**	**>120** **109.2**
8	West Street/40th Street	Signal	AM PM	B **E**	18.3 **58.2**	B A	18.3 7.6
13	Telegraph Avenue/40th Street	Signal	AM PM	**F** **F**	82.8 **90.5**	D D	54.5 53.5
16	Market Street/MacArthur Boulevard	Signal	AM PM	**F** **F**	**>120** **>120**	C C	34.4 33.6
20	Telegraph Avenue/ MacArthur Boulevard	Signal	AM PM	E F	**63.9** 102.3	D E	53.8 68.5
22	Broadway/MacArthur Boulevard	Signal	AM PM	**F** F	**85.0** >120	**F** F	**85.0** >120

Notes: **Bold** indicates significant impacts.
The LOS/Delay for signalized intersections, the LOS/Delay represents overall intersection.

Source: Fehr & Peers, 2007.

Mitigation Measure TRANS-3: Implement the following measures:

- Prohibit left-turns from northbound Telegraph Avenue into westbound 52nd Street during the peak commute times (i.e., 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.). Currently, a small volume of traffic uses this movement (about 10 peak hour vehicles), which can be diverted to 51st Street. Thus, the peak hour prohibition on left-turns would not result in excessive and circuitous diversions.
- Change signal cycle length to 120 seconds and optimizing signal timing (i.e., adjust the allocation of green time for each intersection approach) at the Telegraph Avenue/52nd Street and Claremont Avenue intersection; coordinate signal timing and phasing with the adjacent Telegraph Avenue/51st Street intersection and other intersections in the same coordination group.
- To implement these measures, the project sponsor shall submit the following to City of Oakland's Transportation Services Division for review and approval:

- Signing plans to prohibit left-turns from northbound Telegraph Avenue into westbound 52nd Street.
- Signal timing plans for the signals in the coordination group.

The project sponsor shall fund the cost of preparing and implementing these plans.

As shown in Table IV.C-17, after implementation of this measure, the intersection would continue to operate at LOS F during the AM peak hour. However, the increase in intersection average delay would be reduced to less than the two-second threshold of significance. The intersection would operate at LOS C during the PM peak hour after implementation of this measure. The increase in signal cycle length may result in additional delay for pedestrians and bicycles. However, no significant effects would result from implementation of this measure. (LTS)

Impact TRANS-4: The addition of project traffic would cause a significant impact at the Telegraph Avenue/51st Street intersection (#3) under Cumulative Year 2030 Baseline Plus Project conditions. The project would contribute to LOS F operations during both AM and PM peak hours; would increase critical movement average delay by more than 4 seconds during the AM peak hour; and would increase intersection average delay by more than 2 seconds during the PM peak hour. (S)

Mitigation Measure TRANS-4: Implement the following measures:

- Change signal cycle length to 120 seconds and optimize signal timing (i.e., adjust the allocation of green time for each intersection approach) at the Telegraph Avenue/51st Street intersection and coordinate signal phasing and timing with the adjacent Telegraph Avenue/52nd Street and Claremont Avenue intersection and other intersections in the same coordination group. To implement this measure, the project sponsor shall submit a signal optimization plan to City of Oakland's Transportation Services Division for review and approval. The plan shall consist of signal timing parameters for the signals in the coordination group. The project sponsor shall fund the cost of preparing and implementing the plan.

  As shown in Table IV.C-17, after changing the signal cycle and turns, the intersection would continue to operate at LOS F during the PM peak hour, and the increase in average delay for the critical movements would continue to be more than the 4-second threshold of significance. Thus, this measure is not sufficient to mitigate the impact to a less-than-significant level. In addition, the increase in signal cycle length may result in additional delay for pedestrians and bicycles.

- To help further minimize impacts at this intersection, a Transportation Demand Management (TDM) program shall be implemented at the project site to encourage more residents and employees to shift from driving alone to other modes of travel. Potential TDM measures may include, but are not limited to, transit ticket subsidies, awareness programs, direct transit sales, providing a guaranteed ride home program, and parking management strategies. The effectiveness of the TDM program shall be regularly monitored, and if necessary adjusted to meet its goals. The project applicant shall submit the TDM program to the City for its review and approval. The plan shall also be submitted to BART for review and comment. The project applicant shall also be responsible for funding and implementing the TDM program.

  The components of the proposed TDM program have not been finalized. Additionally, it is difficult to accurately predict a TDM program's effectiveness and to quantify the effects on reducing project trip generation. To present a conservative analysis, this study assumes that the intersection would continue to operate at LOS F with the implementation of this mitigation measure. Thus, these measures will partially mitigate the impact, but are not sufficient to mitigate the impact to a less-than-significant level. (SU)

The following measure was also evaluated for Impact TRANS-4, but was found to be infeasible:

- Intersection operations at this intersection could be improved by providing a second left-turn lane or a third through lane on southbound Telegraph Avenue. Although these improvements would increase the intersection capacity, they are not feasible because they would require elimination of a great number of heavily used metered on-street parking spaces or additional right-of-way that is not available.

The total project trip generation must be reduced by 26 percent (by about 94 trips from 358 new trips to 264 new trips) during the PM peak hour to reduce the project impact to a less-than-significant level. This corresponds to approximately 410 fewer residential units or 36,000 fewer square feet of commercial space (see analysis of the Reduced Build/Site Alternative in Chapter V).

Impact TRANS-5: The addition of project traffic would cause a significant impact at the West Street/40th Street intersection (#8) under Cumulative Year 2030 Baseline Plus Project conditions. The project would degrade intersection operations from LOS D to LOS E in the PM peak hour. (S)

Mitigation Measure TRANS-5: Optimize signal timing (i.e., adjust the allocation of green time for each intersection approach) at the West Street/40th Street intersection. To implement this measure, the project sponsor shall submit a signal optimization plan to City of Oakland's Transportation Services Division for review and approval. The plan shall consist of signal timing parameters for the West Street/40th Street intersection. The project sponsor shall fund the cost of preparing and implementing the plan.

As shown in Table IV.C-17, after implementation of this measure, the intersection would operate at LOS A during the PM peak hour. No significant effects would result from implementation of this measure. (LTS)

Impact TRANS-6: The addition of project traffic would cause a significant impact at the Telegraph Avenue/40th Street intersection (#13) under Cumulative Year 2030 Baseline Plus Project conditions. During both AM and PM peak hours, the project would degrade intersection operations from LOS E to LOS F in the AM peak hour, and contribute to LOS F operations and would increase critical movement average delay by more than 4 seconds during the PM peak hours. (S)

Mitigation Measure TRANS-6: Implement the following measures:

- Provide protected/permitted left-turn phasing on eastbound and westbound 40th Street approaches.
- Change signal cycle length to 120 seconds during the AM peak hours and 105 seconds during the PM peak hour, and optimize signal timing (i.e., adjust the allocation of green time for each intersection approach) at the Telegraph Avenue/40th Street intersection. The change in signal cycle length may also require coordination with other intersections in the same coordination group.

To implement these measures, the project sponsor 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 provide left-turn phasing on eastbound and westbound 40th Street approaches.
- Signal timing plans for the signals in the coordination group.

The project sponsor shall fund the cost of preparing and implementing these plans.

As shown in Table IV.C-17, after implementation of these measures, the intersection would operate at LOS D during both AM and PM peak hours. The increase in signal cycle length may result in additional delay for pedestrians and bicycles. However, no significant effects would result from implementation of this measure. (LTS)

Impact TRANS-7: The addition of project traffic would cause a significant impact at the Market Street/MacArthur Boulevard intersection (#16) under Cumulative Year 2030 Baseline Plus Project conditions. The project would contribute to LOS F operations, and

would increase intersection average delay by more than 2 seconds, during both AM and PM peak hours. (S)

Mitigation Measure TRANS-7: The impact shall be mitigated by the following:

- Stripe a left-turn lane on northbound Market Street at MacArthur Boulevard. The left-turn lane can be accommodated within the existing right-of-way, but may result in loss of a few on-street parking and relocation of an AC Transit bus stop on northbound Market Street.
- Change signal cycle length to 110 seconds during the AM peak hour and 90 seconds during the PM peak hour, and optimize signal timing (i.e., adjust the allocation of green time for each intersection approach) at the Market Street/MacArthur Boulevard intersection.

To implement these measures, the project sponsor shall submit the following to City of Oakland's Transportation Services Division for review and approval:

- Plans, Specifications, and Estimates (PS&E) to stripe a left-turn lane on northbound Market Street at MacArthur Boulevard.
- Signal timing plans for the Market Street/MacArthur Boulevard intersection.

The project sponsor shall fund the cost of preparing and implementing these plans.

As shown in Table IV.C-17, after implementation of these measures, the intersection would operate at LOS C during both AM and PM peak hours. The increase in signal cycle length may result in additional delay for pedestrians and bicycles. However, no significant effects would result from implementation of this measure. (LTS)

Impact TRANS-8: The addition of project traffic would cause a significant impact at the Telegraph Avenue/MacArthur Boulevard intersection (#20) under Cumulative Year 2030 Baseline Plus Project conditions. The project would degrade intersection operations from LOS D to LOS E in the AM peak hour. (S)

Mitigation Measure TRANS-8: Implement the following measures:

- Provide protected/permitted left-turn phasing on northbound and southbound Telegraph Avenue approaches.
- Change signal cycle length to 120 seconds and optimize signal timing (i.e., adjust the allocation of green time for each intersection approach) at the Telegraph Avenue/MacArthur Boulevard intersection. Signal phasing and timing shall also be coordinated with other intersections in the same coordination group.

To implement this measure, the project sponsor 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 provide left-turn phasing on northbound and southbound Telegraph Avenue approaches.
- Signal timing parameters for the signals in the coordination group.

The project sponsor shall fund the cost of preparing and implementing the plan.

As shown in Table IV.C-17, after implementation of this measure, the intersection would operate at LOS D during the AM peak hour and LOS E during the PM peak hour. The increase in signal cycle length may result in additional delay for pedestrians and bicycles. No significant effects would result from implementation of this measure. (LTS)

Impact TRANS-9: The addition of project traffic would cause a significant impact at the Broadway/MacArthur Boulevard intersection (#22) under Cumulative Year 2030 Baseline Plus Project conditions. The project would contribute to LOS F operations and would increase intersection average delay by more than 2 seconds during the AM peak hour. (S)

Mitigation Measure TRANS-9: Implement the following measures:

- To help further minimize impacts at this intersection, a Transportation Demand Management (TDM) program shall be implemented at the project site to encourage more residents and employees to shift from driving alone to other modes of travel. Potential TDM measures may include, but are not limited to, transit ticket subsidies, awareness programs, direct transit sales, providing a guaranteed ride home program, and parking management strategies. The effectiveness of the TDM program shall be regularly monitored, and if necessary adjusted to meet its goal. The project applicant shall submit the TDM program to the City for its review and approval. The plan shall also be submitted to BART for review and comment. The project applicant shall also be responsible for funding and implementing the TDM program.

  The components of the proposed TDM program have not been finalized. Additionally, it is difficult to accurately predict a TDM program's effectiveness and to quantify the effects on reducing project trip generation. To present a conservative analysis, this study assumes that the intersection would continue to operate at LOS F with the implementation of this mitigation measure. Thus, these measures will partially mitigate the impact, but are not sufficient to mitigate the impact to a less-than-significant level. (SU)

The following measures were evaluated as part of the *Kaiser Permanente Oakland Medical Center Master Plan Project Draft EIR* (March 2006), but were found to be ineffective and therefore they are not included as recommended mitigation measures for Impact TRANS-9:

- The City evaluated whether intersection operations could be improved by providing a second southbound left-turn lane on Broadway. Based on the proposed design of the intersection, a second southbound left-turn lane could be accommodated in the median on Broadway. However, the left-turn lane would only be 75 feet long, which would accommodate few vehicles, and would often be blocked by traffic in the first left-turn lane. The second left-turn lane would also result in the prohibition of U-turns on the southbound Broadway approach. Because the second left-turn lane would not be very effective in reducing congestion and improving intersection level of service, it is recommended that the median on Broadway be preserved. Thus, this measure is not effective.
- Alternatively, the City evaluated whether intersection operations could be improved by converting the exclusive southbound right-turn lane into a shared through/right-turn lane. This would require a third receiving lane on southbound Broadway south of MacArthur Boulevard. Due to constrained right-of-way in this area, the additional lane would result in loss of bicycle lanes, turn lanes, or parking. Furthermore, the three southbound lanes would have to merge to two lanes, reducing the effectiveness of the additional through lanes. Because the additional through lane would not be very effective and may result in other impacts, it is recommended that the proposed southbound right-turn lane be maintained. Thus, this measure is not feasible.

The total project trip generation must be reduced by 57 percent (by about 185 trips from 324 new trips to 139 new trips) during the AM peak hour to reduce project impact to a less than significant level (see analysis of the Reduced Build/Site Alternative in Chapter V).

c. CMA Analysis. The Alameda County Congestion Management Program (CMP) requires the assessment of development-driven impacts on regional roadways. Because the project would generate more than 100 "net new" PM peak hour trips, the CMP requires the use of the ACCMA Countywide Travel Demand Model to assess the impacts on regional roadways in the project vicinity during the AM and PM peak hours. The CMP and Metropolitan Transportation System (MTS) roadways in the project vicinity identified in NOP comments by ACCMA[32] include SR-24, I-80, I-880, I-580, MacArthur Boulevard, Telegraph Avenue, Adeline Street, Martin Luther King Jr. Way, Shattuck Avenue, 51st Street and Claremont Avenue.[33]

The ACCMA Countywide Model is a regional travel demand model that uses socio-economic data and roadway and transit network assumptions to forecast traffic volumes and transit ridership using a four-step modeling process that includes trip generation, trip distribution,

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[32] July 6, 2007 letter.

[33] Note that the roadway segments included in this evaluation are not based on an assessment of the project trip distribution or application of screening criteria to determine if the project would contribute vehicle trips to warrant analysis.

mode split, and trip assignment. This process accounts for changes in travel patterns due to future growth and balances trip productions and attractions.

For the purposes of the CMP Analysis, the land uses of the proposed project were added to the assumptions in the Countywide Model; the land use assumptions in the Countywide Model for the rest of the City of Oakland were not modified. At this time, these land uses are different from the Oakland Cumulative Scenario that was used for the Cumulative 2015 and 2030 Year Baseline intersection operations analyses. This version of the Countywide Model is based on Association of Bay Area Governments (ABAG) *Projections 2005* land uses for 2015 and 2030.

The traffic baseline forecasts for 2015 and 2030 were extracted for the CMP and MTS roadway segments from the Countywide Model. Due to fluctuations in the model forecasts and the model's limited number of Traffic Analysis Zones (TAZs) in the project area, the "plus project" forecasts were not used directly for the CMP roadway analysis. Instead, vehicle trip generation estimates were computed for the proposed project and manually added to the 2015 and 2030 baseline volumes from the Countywide Model.

Operations of the MTS freeway and surface street segments were assessed using a volume-to-capacity (v/c) ratio methodology. For freeway segments, a per-lane capacity of 2,000 vehicles per hour (vph) was used, consistent with the 2004 Congestion Management Program documents. For surface streets, a per-lane capacity of 800 vehicles per hour was used. Roadway segments with a v/c ratio greater than 1.00 signify LOS F.

The "plus project" results were compared to the baseline results for each horizon year. Based on the analysis, the proposed project would not cause a significant impact on the CMP and MTS roadways. The 2015 and 2030 peak hour volumes, v/c ratios and the corresponding level of service for baseline and "plus project" conditions are provided in Appendix F.

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 developed by HEG for the area surrounding the project site, which differs from the data in the ACCMA model. The second area of difference is the use of the Furness process. The intersection forecasts use the output of the ACCMA model as an input to develop intersection volumes in conjunction with existing traffic counts. The 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.

The project would contribute to 2015 and 2030 increases in traffic congestion on MTS roadways. However, the project would not cause a roadway segment on the MTS to degrade from LOS E or better to LOS F. The project also would not increase the v/c ratio by more than 3 percent for roadway segments that would operate at LOS F without the project. This is a less-than-significant impact and as a result no mitigation measures are required.

d. Construction Period Impacts. During the construction period, temporary and intermittent transportation impacts would result from truck movements as well as construction worker vehicles traveling to and from the project site. The construction-related traffic would result in a temporary reduction to the capacities of project area streets because of the slower movements and larger turning radii of construction trucks compared to passenger vehicles. Given the proximity of I-880 freeway ramps, use of local roadways would be limited. Truck traffic that occurs during the peak commute hours (7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.) could result in worse levels of service and higher delays at local intersections than during off-peak hours. Also, if parking of construction workers' vehicles cannot be accommodated within the project site, it would temporarily increase parking occupancy levels in the area. Project construction could also impact the operations of BART and AC Transit.

As part of the build-out of the proposed project, all sidewalks and pedestrian ramps bordering the project site will be reconstructed. All ramps adjacent to the project site are to be upgraded to Americans with Disabilities Act (ADA) compliance.

Implementation of COA TRANS-1 would ensure that construction period impacts are reduced to a less-than-significant level and require consultation with BART and. AC Transit about construction activity.

e. Vehicle, Pedestrian and Bicycle Safety. The proposed MacArthur Transit Village Project would result in increased vehicular traffic and pedestrian and bicycle activity in and around the project area. The streets surrounding the project site provide sidewalks on both sides and the internal project roadways would provide sidewalks and pedestrians paths. Approved and funded improvements in the study area benefiting pedestrians and bicyclist, such as the 40th Street/MacArthur Transit Hub improvements, were previously discussed on pages 164 to 166.

In addition, the proposed project would include improvements to vehicle, pedestrian and bicycle access and circulation in and around the project area to improve safety and encourage more pedestrian and bicycle activity. These improvements would include:

- Signalization of the three intersections providing access to the site (Frontage Road/40th Street, Telegraph Avenue/Village Drive, and Frontage Road/MacArthur Boulevard). These three intersections would provide marked crosswalks and pedestrian signal heads.
- Implementing flashing pedestrian warning lights at garage driveways.
- Providing enhanced crosswalks, such as raised crosswalks, within the project area.
- Restrict transit and vehicle circulation to reduce pedestrian and bicycle conflict zones.
- Implementing wayfinding strategies such as directional signs within the project area and nearby neighborhoods.
- Providing bicycle access between the BART Station and West MacArthur Boulevard.
- Providing and enhancing bicycle parking for the Transit Village and BART Station.

In addition, as required by Mitigation Measures TRANS-6 and TRANS-8, protected left-turn phasing will be implemented at the Telegraph Avenue/40th Street and Telegraph Avenue/ West MacArthur Boulevard intersections. This improvement would reduce potential conflicts between left-turn vehicles and on-coming vehicles, pedestrians, and bicyclists.

The project site plan has not been finalized; the final project design will be reviewed to ensure consistency with design standards. Considering the above listed improvements, the final project design would minimize potential conflicts between various modes and provide safe and efficient pedestrian, bicycle, and vehicle connections between the BART Station, Transit Village and the surrounding circulation systems.

The proposed project would not cause a significant impact by substantially increasing traffic hazards to motor vehicles, bicycles, or pedestrians due to a design feature. The following improvements should be considered during review of the project's merits to further enhance safety for vehicles, pedestrians and bicycles in and around the project area and to encourage more pedestrian and bicycle activity:

> *Recommendation TRANS-1: In consultation with City of Oakland staff and pending feasibility studies, the following improvements should be considered in and around the project area:*
>
> - *Removal of the slip right-turns on northbound and southbound Telegraph Avenue at West MacArthur Boulevard.*
> - *Providing street furniture and widening sidewalks where feasible in and around the project site.*
> - *Providing pedestrian scale lighting on MacArthur Boulevard under the freeway overpass.*

- *Specific intersection improvements, such as advanced stop bars, median refuge islands, reduced corner curb radii, raised crosswalks, curb bulb-outs, audible pedestrian signals, and pedestrian and bicycle signal detection.*

f. Consistency with Adopted Policies, Plans or Programs Supporting Alternative Transportation. A summary of applicable policies and plans is provided on page 167 of this EIR. In general, the proposed project is consistent with these policies, plans and programs. A detailed discussion of these polices and plans is provided below.

The City of Oakland General Plan Land Use and Transportation Element (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 a transit hub served by BART, AC Transit and various shuttle services that provide transit connectivity to the other City neighborhoods and the rest of the region.

The proposed project would also implement a Transportation Demand Management (TDM) program at the project site to encourage more residents, employees, and BART patrons to shift from driving alone to other modes of travel. Potential TDM measures may include, but are not limited to, transit ticket subsidies, awareness programs, direct transit sales, providing a guaranteed ride home program, and parking management strategies. Although the components of the proposed TDM program have not been finalized, it is expected that the TDM will encourage increased use of alternatives transportation modes.

The proposed project is consistent with the *City of Oakland Pedestrian Master Plan* by including features and improvements listed on page 168 of this EIR, such as pedestrian facilities within the site, and pedestrian-scale lighting under freeway overpasses that encourage pedestrian activity

The proposed project is consistent with the *City of Oakland Bicycle Master Plan* (BMP) by including features listed on page 168 such as bicycle connections to the adjacent streets and bicycle parking that encourage bicycle activity. The BMP also proposes installation of Class II bicycle facilities on 40th Street, Telegraph Avenue, and West MacArthur Boulevard. The proposed project would not alter these roadways to prevent the installation of these facilities.

Thus, the proposed project would not cause a significant impact by conflicting with adopted policies, plans, or programs supporting alternative transportation.

g. Emergency Access. The proposed project would be accessible from three points on different roadways, i.e., Frontage Road at 40th Street and West MacArthur Boulevard, and Village Drive at Telegraph Avenue. Thus, if one site access were blocked, the other access point(s) could be used by emergency vehicles to reach any part of the development. Internal Street in the project would not be a through street. It would provide a hammer-head turnaround area, and would be less than 600 feet in length. Thus, the project would not cause a significant impact on emergency access.

4. Informational Discussion of Transportation Issues

The following provides a discussion of transportation-related topics that are not specifically addressed by the City of Oakland's significance criteria and typically not considered significant impacts under CEQA, but are evaluated to inform decision makers and the public about these issues. The topics addressed include:

- Bus Rapid Transit (BRT)
- Neighborhood traffic Intrusion
- Transit
- Parking Supply and Demand.

The purpose of this section is to provide information and context for transportation issues that may be created/affected by the proposed project. Issues are evaluated and recommendations are provided as appropriate.

a. BRT Conditions. In May of 2007, AC Transit published a Draft Environmental Impact Statement / Environmental Impact Report (EIS/EIR) for the implementation of Bus Rapid Transit (BRT) on Telegraph Avenue and International Boulevard connecting Berkeley, Oakland, and San Leandro. The proposed system would dedicate one travel lane in each direction to bus operations only, allowing buses to provide a quicker and more reliable service than regular bus service today. In the vicinity of the project, the proposed BRT project would generally eliminate one through lane in each direction and narrow Telegraph Avenue to one through lane in each direction. Currently, there are no finalized design plans, an assurance of full funding for the BRT project, or approvals from AC Transit, the City of Oakland and other public agencies. Although proposed (but not approved) transit improvements are not typically considered as part of the projected baseline conditions, this EIR nevertheless (conservatively) provides a discussion of the potential effects on project impacts caused by proposed modifications to the traffic circulation network by the proposed BRT under Cumulative Year 2030 Baseline Plus Project conditions in Appendix F to this EIR.

b. Neighborhood Traffic Intrusion. The traffic operations analysis presented in previous sections assumed that vehicles would access the site using the arterials in the project vicinity. The proposed mitigation measures would ensure that the major roadways would have adequate capacity to serve the project site. However, the proposed project may result in additional traffic on surrounding residential neighborhood streets. Additional traffic generated by the proposed project may use adjacent residential streets, such as 38th Street, as cut-through routes to divert from potential congestion on Telegraph Avenue, 40th Street, and West MacArthur Boulevard.

Currently, 37th Street intersects West MacArthur Boulevard opposite Frontage Road. However, the median on West MacArthur Boulevard only allows right-turns to and from 37th Street. The proposed signal at Frontage Road/West MacArthur Boulevard intersection would provide a direct connection to 37th Street. This may result in additional traffic to and from 37th Street south of West MacArthur Boulevard to bypass potential congestion at the Telegraph Avenue/West MacArthur Boulevard intersection.

The significance criteria established by City of Oakland and used in this EIR are based on roadway capacities. Since neighborhood traffic intrusion would not exceed the capacity of these residential streets, it would not result in a significant impact based on the identified significant criteria. As a result, no mitigation measure is required; however, the following recommended improvements should be considered during review of the project's merits to reduce potential cut-through traffic:

Recommendation TRANS-2: Project applicant should pay to monitor traffic volumes and speeds on the following roadways before and after the completion of the proposed project:

- *37th Street between West MacArthur Boulevard and Telegraph Avenue;*
- *38th Street between Telegraph Avenue and Webster Street; and*
- *Clarke Street and Ruby Street between 38th Street and 40th Street.*

In consultation with local residents, and in accordance with all legal requirements, appropriate traffic calming measures, such as speed humps, or roadway closures, should be considered if and when excessive traffic volumes or speeding are observed. These potential improvements should be funded by the project applicant.

c. Transit Analysis. The proposed project would not result in any significant impacts on transit facilities as described below.

(1) Transit Trip Generation. Transit trips generated by the proposed project were estimated using the transit mode split for the project site estimated by the ACCMA Travel Demand Model for AC Transit and using the Wilson Methodology for BART.

Table IV.C-18 presents the estimated increases in AM and PM peak hour and daily ridership for AC Transit. The estimated ridership accounts for transit trips generated by the

Table IV.C-18 Project Effects on AC Transit Ridership

	AM Peak Hour	PM Peak Hour	Daily
AC Transit[a]	100	112	420

[a] Based on the results of the ACCMA Travel Demand Model.

proposed Transit Village, and changes in ridership resulting from the loss of 300 BART parking spaces. The proposed project is expected to increase AC Transit ridership by 100 AM peak hour riders, 112 PM peak hour riders, and 420 daily riders.

Table IV.C-19 summarizes project's effects on BART ridership under various scenarios. Appendix F provides a detailed explanation of assumptions and methodology used to estimate project's effects on BART ridership. The residential and commercial components of the project are estimated to generate approximately 115 AM peak hour, 137 PM peak hour, and 855 daily BART riders.

The number of on-site BART parking spaces would be reduced from 618 spaces to 300 spaces as part of the proposed project. The reduction in parking supply is expected to reduce ridership at the MacArthur BART Station by 58 AM peak hour, 63 PM peak hour, and 525 daily BART trips. Thus, overall, the net BART ridership is estimated to increase by 57 AM peak hour trips, 74 PM peak hour trips and 330 daily trips.

Implementation of a residential parking permit (RPP) program within a ¼-mile of the station, which is being considered as part of the project, is expected to further reduce ridership at the MacArthur BART Station by an additional 35 AM peak hour, 38 PM peak hour, and 320 daily BART trips. As shown in Table IV.C-19, overall BART ridership with the proposed project and an RPP, would increase by approximately 22 AM peak hour riders, 36 PM peak hour riders, and 11 daily riders based on a conservative analysis that assumes that 75 percent of the riders who currently park on streets within ¼-mile radius of the BART station would no longer use the MacArthur BART Station. If an RPP is implemented, it is anticipated that about 25 percent of the BART riders that currently park on-street will be dropped off, or utilize transit or other alternative modes to access the MacArthur BART station. Some displaced BART riders may decide to utilize another BART station, in which case those riders would not be lost to the BART system. Other displaced riders would be expected to shift to other travel modes such as other transit services or driving to their ultimate destination. Since BART provides regional transit service, the displaced BART riders would likely be dispersed over a large geographic area. Additionally, the specific changes in travel mode or destination of the displaced BART riders cannot be determined at this time. Thus, potential secondary impacts are not capable of a valid assessment and are too speculative.

Given the number of available alternative travel options including use of other BART stations, various bus transit services, walking, carpooling or driving alone it is likely that dispersal of riders across these options would fall within the daily traffic and transit fluctuations and would not be noticeable. Also to be conservative the project analysis for traffic, air and noise analyses did not any take any credits for the reduction of BART parking spaces. The dispersal of travel could also result in longer trips and incrementally increase air emissions. However, being the dispersal would occur over a large geographic area and the pattern of the dispersal is too speculative to predict, air emissions impacts are not

Table IV.C-19 Project Effects on BART Ridership[a]

Change Due To	AM Peak Hour	PM Peak Hour	Daily
Transit Village[b]	115	137	855
On-Site Parking Reduction[c]	--58	-63	-525
Subtotal	**57**	**74**	**330**
RPP Parking Reduction[d]	-35	-38	-320
Total	**22**	**36**	**11**

[a] See Appendix F for more detail.

[b] BART ridership generated by the residential and commercial components of the proposed project.

[c] Reduction in BART ridership due to removal of 318 on-site parking spaces.

[d] Reduction in BART ridership due to implementation of a RPP program in the surrounding neighborhood.
Source: Fehr & Peers, 2007.

capable of a valid quantitative assessment. Additionally, since the net change would only be the potential increase in the length of a trip, as no net new cold start vehicle trips would result, and the incremental increase in the trip lengths are not anticipated to be substantial enough to result in a cumulatively considerable contribution to regional air emissions, these potential secondary impacts are not anticipated to be significant. Also, no localized carbon monoxide "hotspot" impacts would be expected, as the trips would be dispersed over a large geographic area."

A description of RPP is provided in the parking section on beginning on page 219. As previously discussed in this section, a TDM program will be implemented at the project site to reduce driving alone trips and encourage the use of other travel modes. Although the components of the project have not been finalized, it will include programs and strategies that would encourage BART riders, project residents, and workers to use alternatives to drive alone trips to access the BART station and the proposed project. Specific parking management strategies are discussed in more detail on page 225.

Potential effects on transit are discussed below.

(2) AC Transit Ridership. The proposed project would increase ridership on AC Transit by approximately 420 riders as detailed above in Table IV.C-18. The project-generated PM peak hour AC Transit trips were distributed among the six AC Transit lines that would serve the site in the future, in proportion to their existing ridership. As shown in Table IV.C-20, the proposed project would not cause average ridership on any AC Transit bus lines to exceed an acceptable load factor based on current capacity.[34]

[34] A load factor of 125 percent is generally considered acceptable as only a small percentage of the riders would have to stand.

Table IV.C-20 AC Transit Average Weekday Loads (With and Without Project)

Bus Line	Stop Location	Direction	Average Capacity (seats)	Average Load (Passengers)[a]		Average Load Factor[b]	
				Existing No Project	Existing Plus Project	Existing No Project	Existing Plus Project
12	MacArthur BART Station	EB	30	3.5	6.2	12%	21%
		WB		0.2	0.4	1%	1%
14	MacArthur BART Station	EB	30	3.4	6.0	11%	20%
		WB		0.4	0.7	1%	2%
15	on MLK Jr. Way at 40th Street	EB	30	13.2	23.5	44%	78%
		WB		12.4	22.0	41%	73%
15	on MLK Jr. Way at W. MacArthur Blvd.	EB	30	10.2	18.1	34%	60%
		WB		9.0	16.0	30%	53%
1-1R	on Telegraph Ave. at 40th Street	SB	55	16.9	30.0	31%	55%
		NB		18.7	33.2	34%	60%
18	on Telegraph Ave. at 40th Street	SB	30	12.3	21.9	41%	73%
		NB		17.5	31.1	58%	104%
57	MacArthur BART Station	EB	30	12.6	22.4	42%	75%
		WB		10.1	17.9	34%	60%

[a] Number of passengers on the bus averaged on a typical weekday.
[b] Average load divided by average seated capacity.

Source: AC Transit and Fehr & Peers.

(3) AC Transit Bus Operations. The proposed project would affect bus operations if traffic congestion caused by the additional trips generated by the proposed project and new signals installed to serve the project site would result in increased travel times for buses. Excessive increases in bus travel times may require additional buses to be used.

The intersections operations analysis completed for the project was used to estimate the travel times of buses in the vicinity of the project. Table IV.C-21 summarizes the estimated travel times on bus corridors with and without the proposed project. The Existing Plus Project travel times reflect planned roadway improvements (e.g., improvements at the Shattuck Avenue/52 Street intersection, and on 40th Street) in the surrounding areas. The proposed project is expected to increase bus travel times by less than a minute within the study area. Thus, it is not expected to cause excessive delays in bus travel times.

(4) Shuttle Operations. Currently, the Kaiser and Summit Medical Center shuttles exiting the BART Station must turn right from the Frontage Road to westbound West MacArthur Boulevard, resulting in circuitous routes to serve their respective sites. The signal proposed to be installed at the Frontage Road/West MacArthur Boulevard intersection would allow shuttles to turn left from the Frontage Road to eastbound West MacArthur Boulevard,

Table IV.C-21 AC Transit Travel Times (With and Without Project)[a]

Bus Line	Travel Distance (Miles)	Direction	AM Peak Hour		PM Peak hour	
			Existing No Project (Minutes)	Existing Plus Project (Minutes)	Existing No Project (Minutes)	Existing Plus Project (Minutes)
12 (Grand Avenue) Between MLK Jr. Way/45th St. and MLK Jr. Way /40th St.	0.3	EB	0.7	0.7	0.7	0.7
		WB	0.8	0.8	0.8	0.8
14 (East 18th Street) Between Market St./40th St. and MLK Jr. Way /40th St.	0.3	EB	1.2	1.2	1.3	1.3
		WB	1.4	1.4	1.7	1.7
15 (Martin Luther King Jr. Way) Between MLK Jr. Way /45th St. and MLK Jr. Way /MacArthur Blvd.	0.5	EB	3.0	3.0	3.0	3.0
		WB	3.0	3.1	3.1	3.2
1-1R (Telegraph Avenue) Between Telegraph/52nd. St. and Telegraph/27th St.	1.6	NB	7.2	5.9	6.3	5.6
		SB	6.3	5.8	6.3	5.9
18 (Shattuck Avenue) Between Shattuck/52nd St. and MLK Jr. Way /MacArthur Blvd.	1.0	NB	4.7	4.8	4.7	4.9
		SB	4.2	4.4	4.4	4.8
57 (40th Street) Between 40th/Market St. and Broadway/MacArthur Blvd.	1.2	EB	4.3	4.4	4.6	4.6
		WB	4.2	4.3	4.6	4.7

[a]. Based on the results of the Synchro analysis completed for traffic operations.

Source: Fehr & Peers. 2007.

decreasing the travel time from the BART Station to Kaiser and Summit Medical Centers by about 15 percent, resulting in a beneficial effect.

(5) BART Standing Capacity. A project's effect on the BART system is assessed based on ridership. The peak hour BART riders generated by the proposed project, without any discounts for parking reduction to present a more conservative analysis, were distributed among the six BART lines that serve the site, in proportion to their existing ridership. As shown in Table IV.C-22, the proposed project would not increase the maximum load factor on any BART line by more than 1 percent.

(6) BART Gate Capacity. There are approximately 6,740 total daily boardings (and 6,740 daily exits) at the MacArthur BART station. The current peak hour ridership at the station is about 3,200 entries and exits during the morning peak hour (8:00 to 9:00 a.m.) and 3,750 entries and exits during the evening peak hour (5:00 to 6:00 p.m.). Based on field observations, the maximum delay at the fare gates was approximately 21 seconds in the AM peak hour and 23 seconds in the PM peak hour; average delays were 13 seconds during both AM and PM peak hours. There are a total of eight fare gates at the MacArthur

Table IV.C-22 BART Average Weekday Loads (With and Without Project)

Line	Total Capacity (Passengers/ Car)[a]	Maximum Load Peak Hour	Maximum Load (Passengers/Car)[b]		Maximum Load Factor[c]	
			Existing No Project	Existing Plus Project	Existing No Project	Existing Plus Project
Pittsburg/Bay Point-Daly City	92	8:00 a.m.	114	114	123.9%	124.3%
Daly City-Pittsburg/Bay Point	92	4:00 p.m.	106	107	115.2%	115.8%
Daly City-Richmond	92	5:00 p.m.	99	100	107.6%	108.4%
Fremont-Richmond	92	5:00 p.m.	92	93	100.0%	101.0%
Richmond-Daly City	92	8:00 a.m.	101	102	109.8%	110.6%
Richmond-Fremont	92	5:00 p.m.	58	58	63.0%	63.5%

Note: Based on existing BART ridership as of Fall 2007.
[a] Total capacity includes 67 seated and 25 standing passengers.
[b] Maximum load divided by total capacity.

Source: BART and Fehr & Peers.

BART station. In the morning, four of these are entrances and four are exits, and in the evening, three are entrances and five are exits.

The project is estimated to generate about 115 BART trips during the AM peak hour and 137 BART trips during the PM peak hour (see Table IV.C-19). This represents less than 4 percent of the existing ridership at the Station. Average wait times are anticipated to remain less than 1 minute. Thus, the project effects with respect to BART gate capacity would not be substantial. Based on the station layout and the estimated fare gate queues, there would be sufficient queuing space within the station to avoid passengers backing up onto escalators or stairs.

d. Parking Supply and Demand. Parking impacts are generally not considered environmental impacts under CEQA. Parking is considered in this EIR to provide additional information to reviewers of the EIR and the City's decision makers, in accordance with the following language developed by City of Oakland.

> The California 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 under CEQA unless it would cause

significant secondary effects.[35] 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 lessen 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 or traffic congestion due to drivers searching for parking spaces) would be minimized. As such, although not required by CEQA, parking conditions are discussed in this document for informational purposes (but they are not considered environmental impacts under CEQA).

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 is typically a temporary condition, often offset by a reduction in vehicle trips due to others who are 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.

This EIR evaluates 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 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.

The evaluation includes the following:

- Comparison of the proposed parking supply to the City's parking requirements.

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[35] San Franciscans Upholding the Downtown Plan v. the City and County of San Francisco (2002) 102 Cal.App.4th 656.

- Comparison of the proposed parking supply to the estimated project demand, including an evaluation of the potential for shared parking.
- Comparison of the available parking supply to the displaced BART parking spaces.
- Summary of strategies to reduce parking demand and/or increase supply.

(1) Proposed Parking Supply. The proposed project would include up to 745 parking spaces within the project site, in addition to the 300 spaces proposed in a BART parking structure. These include the following:

- Residential (675 units): 675 spaces in various on-site parking structures.
- Non-Residential (44,000 square-feet of commercial and 5,000 square-feet of community space): 25 spaces in the parking structure for building A.
- On-street spaces (on Village Drive and the Internal Street): 30 to 45 spaces.
- BART: 300 spaces in a dedicated structure.

(2) City Off-Street Parking Requirements. The zoning for the proposed project would be S-15. Based on the City of Oakland Zoning Code requirements (Section 17.116), the minimum number of parking spaces required for multi-family developments in an S-15 zone is one-half space per dwelling unit, and commercial developments in an S-15 zone are not required to provide off-street parking spaces. Therefore, a total of 338 off-street parking spaces would be required for the proposed project. Since the proposed project would provide 675 off-street parking spaces (as well as 35 to 45 on-street spaces), it would comply with the City's zoning requirements.

(3) Transit Village Parking Demand. The parking demand for the transit village includes demand from the residents, residents' guests, commercial shoppers, commercial employees, and community space employees. Demand from BART patrons is discussed in the following section.

Parking demand for the project is estimated based on parking demand rates published by Urban Land Institute (ULI) in *Shared Parking* with adjustments to account for the transit proximity of the site, internal trips between the residential and commercial uses, and "pass-by" commercial trips by BART patrons.

The assumptions made in this analysis include:

- 5 percent transit mode share for commercial shoppers
- 25 percent transit mode share for commercial employees
- 65 percent internal and BART pass-by share for commercial shoppers (equal to a 35 percent "non-captive" ratio)

- 20 percent transit mode share for residential guests
- 1 reserved parking space for each residential unit
- Residential guests, and commercial shoppers and employees will share the parking supply provided in the Building A parking Structure and on-street within the project.

As shown in Table IV-C-23, the peak demand would occur on weekday evenings around 7:00 p.m., and would be approximately 815 parking spaces. This incorporates some shared parking between the residential guests, commercial shoppers, and employees. Note that because the residents' spaces are assumed to be reserved and not shared, they are listed separately in the table.

Based on this analysis, the proposed project would provide adequate parking to satisfy the demand from the project residents.

The estimated parking demand includes 59 spaces for commercial shoppers and employees. It is likely that this is a high estimate, particularly if some of the commercial stores close before the 7:00 p.m. parking demand peak. The estimated demand also includes approximately 80 spaces for residential guests. There are approximately 25 off-street and 30 to 45 on-street parking spaces within the project area that would be available to residential guests and commercial shoppers and employees, indicating a peak deficit of approximately 70 spaces.

Based on the results of the neighborhood parking survey, approximately 360 of the 1,080 existing non-metered on-street parking spaces within a quarter-mile of the site were available at 6:30 p.m. Therefore, there would be sufficient on-street parking near the project site to accommodate the 70 to 85 vehicles that may not be able to park on-site. In addition, the BART parking lot is currently about half-full at 6:00 p.m., which indicates that additional vehicles may be able to park in the BART garage, if it were available for public use after typical commute hours.

(4) Residential Parking Permit. With a significant loss of on-site BART parking, a RPP program is proposed to prevent further spillover onto residential streets. A RPP that would cover residential streets approximately a quarter-mile radius around the project site has been proposed to offset potential parking impacts in the surrounding neighborhood associated with the reduction in BART parking. The RPP would restrict on-street parking on residential streets by non-residents to fewer than two hours during the weekdays. If approved, the RPP program would be considered for implementation prior to demolition of the existing BART parking lot.

Table IV.C-23 Estimated Peak Parking Demand

Land use	Amount	Base Rate[a]	Mode Adjustment[b]	Non-captive Ratio[c]	Project Rate[d]	Peak Hour Adjustment (7 PM)[e]	Estimated Demand[f]	Supply	Surplus (Deficit)
Potentially Shared Parking									
Commercial (shoppers)	49 KSF	2.90	0.95	0.35	0.96	0.75	35	70	-70
Commercial (employees)		0.70	0.75	1.00	0.53	0.95	24		
Residential (guests)	675 DU	0.15	0.80	1.00	0.12	1.00	81		
Total Potentially Shared							***140***	70	***-70***
Reserved Parking									
Residential (reserved)	675 DU	1.00	1.00	1.00	1.00	1.00	675	675	0
Total Reserved							***675***	***675***	***0***
Total Demand							**815**	**745**	**-70**

Note: KSF = 1,000 square feet; DU = dwelling unit.

[a] Based on rates published in ULI *Shared Parking*; residential rates were adjusted to 1.0 space per unit.

[b] Represents the percentage that would drive.

[c] Represents the percentage of trips that are "new" to the site; it incorporates a discount for pass-by or internal trips.

[d] Equals the base rate times the mode adjustment times the non-captive ratio.

[e] Reflects any discounts due to less activity during the stated overall peak hour.

[f] Equals the quantity times the project rate times the peak hour adjustment.

G Includes 30 off-street parking spaces in Building A parking structure and 42 on-street spaces on Village Drive and Internal Street.

Source: ULI Shared Parking & Fehr & Peers, 2007.

In Oakland, residents must petition to create a RPP area.[36] At least 51 percent of the residential units in each of the blocks within the RPP area must sign the petition. Additionally, an RPP area must consist of at least six adjacent blocks and at least 75 percent of all on-street spaces within a proposed RPP area must be occupied during any two one-hour periods between 8:00 a.m. and 6:00 p.m. Establishment of an RPP is subject to approval by the Oakland City Council. Neighborhood interest in this program has not been fully assessed. Permits programs have gained support in many neighboring areas.

A RPP program would cause a significant reduction in parking supply for BART patrons. It has been estimated that as many as 216 BART patrons currently park on streets adjacent to the station (see page 154). Since RPP would only be implemented on streets with majority residential frontage, it is expected that segments of 40th Street and West MacArthur

[36] http://www.oaklandpw.com/Page547.aspx.

Boulevard would continue to be available for unlimited parking. It is estimated that about 194 BART patrons who currently park on-street would be affected by RPP and would not be able to park on-street if RPP is implemented. With a loss of up to 318 BART parking spaces, up to approximately 512 BART patrons may be in need of parking. With a RPP and two-hour parking restrictions, these patrons would need to be accommodated through a combination of shared parking, remote parking, and non-auto access alternatives. The effects of RPP on BART ridership were described previously in Table IV.C-19.

Additional on-street parking for BART patrons may also be desirable, and a modified RPP program that allows for non-resident parking on one side of the street (as employed near the El Cerrito Plaza BART Station) may be appropriate. Alternatively, it may be possible to sell residential permits to BART patrons if the permit program results in underutilized street parking. A limited number of permits could be made available to BART patrons, with the permit revenue being returned to the neighborhood through a parking benefit district (see below).

It is noted that implementation of an RPP is dependent on neighborhood support and is subject to approval by the City of Oakland City Council. It is unknown if the necessary amount of neighborhood support is substantial enough to create the RPP program. Therefore, this EIR includes an evaluation of parking demand both with and without an RPP.

(5) BART Parking Demand. The existing BART parking lot has a total of 618 parking spaces, of which 612 are for BART patrons (the other six include two station agent spaces and four city car share spaces). Based on recent surveys, the lot is fully occupied by noon on a typical weekday, and is about half full by 6:00 p.m.[37]

The proposed project would provide 300 BART parking spaces. Therefore, if BART parking demand remains consistent, the additional 312 vehicles would have to park off-site. Based on a survey of on-street parking occupancy within the neighborhood, the peak parking occupancy occurs around 4:30 p.m., when 805 spaces of the 1,080 in the neighborhood are occupied. The second-highest peak occupancy occurs at around 12:30 p.m., when about 800 spaces are occupied.

When the BART parking lot is fully occupied around noon, there are about 280 parking spaces available within a ¼-mile of the project site. Thus, most of the BART patrons who use the BART parking spaces that would be eliminated can be accommodated in the surrounding neighborhoods. This leaves a residual parking demand of approximately 30 BART patrons' vehicles. Based on field observations, there are sufficient additional on-street spaces beyond the ¼-mile radius of the station for these 30 BART patrons to use. It is also likely that with a reduction of BART parking spaces, some patrons would shift to other

[37] BART parking lot occupancy survey by Fehr & Peers, May 2006.

access modes or not use BART. As described previously, City of Oakland is considering implementing RPP in the residential neighborhood surrounding the MacArthur BART Station. If RPP is implemented, the 312 displaced BART patrons would not be accommodated in the surrounding neighborhood. Potential affects of parking elimination on BART ridership were discussed previously within this section.

(6) Parking Strategies. Existing conditions suggest a high level of demand for BART parking both on and off-site. High BART parking demand is expected to continue after the Transit Village development. The City, BART and the project applicant are working together to consider a range of parking strategies that would increase parking supply (to compensate for removal of BART patron parking both on and off-site) and ultimately increase BART ridership independent of the Transit Village project. Additionally, as previously discussed within this section, a Traffic Demand Management Plan (TDM) is required to mitigate project impacts. The TDM will consider parking strategies. The following strategies present some options to address this demand that may be considered by the City, BART and/or the project applicant:

- Reduced parking ratios to support TOD principles. Parking ratios are typically outlined in a Municipal Ordinance to set the required number of parking spaces per dwelling unit. Many cities set a minimum ratio, but, especially in transit-oriented areas, maximum ratios can often be established. Research has shown that TODs attract transit riders who “self-select” their housing location based on transit proximity. However, policy intervention can further encourage self-selection.
- Remote/off-site parking facilities. Remote parking refers to off-site parking facilities. Pricing remote parking at a reduced rate would encourage commuters, residents, and employees to use remote parking for long-term parking, thus making the most convenient spaces available for priority and short-term users.
- Unbundled parking. When parking is unbundled, parking spaces may be rented or sold separately rather than automatically included with the building space. Unbundling parking can also make housing more affordable by providing the option of paying for housing without also paying for parking and can encourage lower vehicle ownership. Unbundling parking has been shown to reduce the total amount of parking required for a building when alternatives to driving are available in the area. Parking spaces designated for residential uses in the Transit Village which are not used by the residents or commercial users may be used by BART patrons.
- Parking Benefit District. With a Parking Benefit District, a defined District receives the permit and meter revenue from on-street parking (or the additional revenue from an increased rate in parking prices or length of metering hours) less expenses for maintenance and enforcement. The revenue is typically used to make neighborhood improvements that promote walking, cycling and transit use (i.e., sidewalks, lighting, curb ramps, and bicycle lanes).

- Preferential parking for carpool/vanpool and BART discounts in the BART Parking Garage. Convenient parking spaces may be reserved for high-occupancy vehicles (HOVs) to encourage ridesharing. These spaces may be free and/or reserved. In addition to preferential parking for carpools and vanpools, passengers commuting via carpool or vanpool may receive subsidized transit passes as an additional incentive.
- Attended parking in the BART Parking Garage. With attended parking, an attendant parks patrons' vehicles and/or organizes efficient parking based on arrival and departure times. A significant benefit of attended parking is the ability to maximize capacity in a parking facility.

It is not yet known which of these strategies may be implemented and if so whether it would be as part of the proposed project or independent of the proposed project, as most of the strategies have pros and cons and will likely be the subject of debate. Some of the strategies being considered may also be found to be infeasible.

The environmental consequences of each strategy listed above have been considered and implementation of any of the strategies is not expected to result in any significant adverse impacts beyond those identified for the project without implementation of the strategies. The parking strategies described would not result in any new physical effects that would trigger any of the significance criteria described above. The transportation analysis included in this section did not any take any credits for the reduction of BART parking spaces.

D. AIR QUALITY

This section describes the existing air quality setting for the MacArthur Transit Village project and has been prepared using methodologies and assumptions recommended in the Air Quality Impact Assessment Guidelines of the Bay Area Air Quality Management District (BAAQMD).[1] In keeping with these guidelines, this chapter describes existing air quality, impacts of future traffic on local carbon monoxide levels, and impacts of land use-related vehicular emissions that have regional effects. Mitigation measures to reduce or eliminate potentially significant air quality impacts are identified, where appropriate. Following the Air Quality analysis, this section also includes an assessment of the project's impacts related to climate change due to associated greenhouse gas emissions.

1. Setting

The following discussion provides an overview of existing air quality conditions in the region and the Oakland area. Ambient standards and the regulatory framework relating to air quality are summarized. Climate, air quality conditions, and typical air pollutant types and sources are described.

a. Standards, Regulatory Framework, Air Quality and Criteria Pollutants. Air quality standards, the regulatory framework, and State and federal attainment status are discussed below.

(1) Air Quality Standards. Both the State and federal governments have established health-based Ambient Air Quality Standards for six air pollutants: carbon monoxide (CO), ozone (O3), nitrogen dioxide (NO2), sulfur dioxide (SO2), lead (Pb), and suspended particulate matter (PM). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride and visibility- reducing particles. These standards are designed to protect public health and welfare with a reasonable margin of safety.

In addition to primary and secondary Ambient Air Quality Standards, the State of California has established a set of episode criteria for O3, CO, NO2, SO2, and PM. These criteria refer to episode levels representing periods of short-term exposure to air pollutants that actually threaten public health. Health effects are progressively more severe as pollutant levels increase.

California Ambient Air Quality Standards and National Ambient Air Quality Standards for the criteria air pollutants are listed in Table IV.D-1. Health effects of these criteria pollutants are described in Table IV.D-2.

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[1] Bay Area Air Quality Management District, 1999. *BAAQMD CEQA Guidelines.*

Table IV.D-1 Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]		Federal Standards[b]		
		Concentration[c]	Method[e]	Primary[b,e]	Secondary[c,f]	Method[g]
Ozone (O3)	1-Hour	0.09 ppm (180 $\mu g/m^3$)	Ultraviolet Photometry	No federal standard	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.07 ppm (137 $\mu g/m^3$)		0.08 ppm (157 $\mu g/m^3$)		
Respirable Particulate Matter (PM10)	24-Hour	50 $\mu g/m^3$	Gravimetric or Beta Attenuation	150 $\mu g/m^3$	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 $\mu g/m^3$		–		
Fine Particulate Matter (PM2.5)	24-Hour	No Separate State Standard		35 $\mu g/m^3$	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 $\mu g/m^3$	Gravimetric or Beta Attenuation	15 $\mu g/m^3$		
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	Nondispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Nondis-persive Infrared Photometry (NDIR)
	1-Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		–		
Nitrogen Dioxide (NO2)	Annual Arithmetic Mean	0.030 ppm (56 mg/m^3)	Gas Phase Chemilumin-escence	0.053 ppm (100 $\mu g/m^3$)	Same as Primary Standard	Gas Phase Chemilumine scence
	1-Hour	0.18 ppm (338 $\mu g/m^3$)		–		
Lead (Pb)	30-day average	1.5 $\mu g/m^3$	Atomic Absorption	–	–	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	–		1.5 $\mu g/m^3$	Same as Primary Standard	
Sulfur Dioxide (SO2)	Annual Arithmetic Mean	–	Ultraviolet Fluorescence	0.030 ppm (80 $\mu g/m^3$)	–	Spectrophoto-metry (Pararosanilin e Method)
	24-Hour	0.04 ppm (105 $\mu g/m^3$)		0.14 ppm (365 $\mu g/m^3$)	–	
	3-Hour	–		–	0.5 ppm (1300 $\mu g/m^3$)	
	1-Hour	0.25 ppm (655 $\mu g/m^3$)		–	–	

Table IV.D-1 Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]		Federal Standards[b]		
		Concentration[c]	Method[e]	Primary[b,e]	Secondary[c,f]	Method[g]
Visibility-Reducing Particles	8-Hour	Extinction coefficient of 0.23 per kilometer - visibility of 10 miles or more (0.07–30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards		
Sulfates	24-Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[h]	24-Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

[a] California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, suspended particulate matter—PM10, PM2.5, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
[b] National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.
[c] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
[d] Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
[e] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
[f] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
[g] Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.
[h] The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Source: California Air Resources Board (ARB), 2007; LSA Associates, 2007.

(2) **Overall Regulatory Setting.** The Federal Clean Air Act governs air quality in the United States. In addition to being subject to federal requirements, air quality in California is also governed by more stringent regulations under the California Clean Air Act. At the federal level, the United States Environmental Protection Agency (EPA) administers the Clean Air Act (CAA). The California CAA is administered by the California Air Resources Board (CARB) at the State level and by the Air Quality Management Districts at the regional and local levels. The BAAQMD regulates air quality at the regional level.

Table IV.D-2 Health Effects of Air Pollutants

Pollutant	Health Effects	Examples of Sources
Suspended Particulate Matter (PM2.5 and PM10)	• Reduced lung function • Aggravation of the effects of gaseous pollutants • Aggravation of respiratory and cardio respiratory diseases • Increased cough and chest discomfort • Soiling • Reduced visibility	• Stationary combustion of solid fuels • Construction activities • Industrial processes • Atmospheric chemical reactions
Ozone (O3)	• Breathing difficulties • Lung damage	• Formed by chemical reactions of air pollutants in the presence of sunlight; common sources are motor vehicles, industries, and consumer products
Carbon Monoxide (CO)	• Chest pain in heart patients • Headaches, nausea • Reduced mental alertness • Death at very high levels	• Any source that burns fuel such as cars, trucks, construction and farming equipment, and residential heaters and stoves
Lead (Pb)	• Organ damage • Neurological and reproductive disorders • High blood pressure	• Metals processing • Fuel combustion • Waste disposal
Nitrogen Dioxide (NO2)	• Lung damage	• See carbon monoxide sources
Toxic Air Contaminants	• Cancer • Chronic eye, lung, or skin irritation • Neurological and reproductive disorders	• Cars and trucks, especially diesels • Industrial sources such as chrome platers • Neighborhood businesses such as dry cleaners and service stations • Building materials and products

Source: ARB and EPA, 2005.

Federal CAA. The 1970 Federal CAA authorized the establishment of national health-based air quality standards and also set deadlines for their attainment. The Federal CAA Amendments of 1990 changed deadlines for attaining national standards as well as the remedial actions required of areas of the nation that exceed the standards. Under the CAA, State and local agencies in areas that exceed the national standards are required to develop State Implementation Plans to demonstrate how they will achieve the national standards for O3 by specified dates. The CAA requires that projects receiving federal funds demonstrate conformity to the approved State Implementation Plan and local air quality attainment plan for the region. Conformity with the State Implementation Plan requirements also satisfies the CAA requirements.

California CAA. In 1988, the California CAA required that all air districts in the State endeavor to achieve and maintain California Ambient Air Quality Standards for CO, O3, SO2 and NO2 by the earliest practical date. The California CAA provides districts with new authority to regulate indirect sources and mandates that air quality districts focus particular attention on reducing emissions from transportation and area-wide emission sources. Each district plan is to achieve a 5 percent annual reduction, averaged over consecutive three-year periods, in district-wide emissions of each nonattainment pollutant or its precursors. Additional physical or economic development within the region would tend to impede the emissions reduction goals of the California CAA. Generally, the State standards for these pollutants are more stringent than the national standards.

(3) United States Environmental Protection Agency. The EPA is responsible for enforcing the Federal CAA. The EPA is also responsible for establishing the National Ambient Air Quality Standards (NAAQS). The NAAQS are required under the 1977 CAA and subsequent amendments. The EPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain types of locomotives. The agency has jurisdiction over emission sources outside state waters (e.g., beyond the outer continental shelf) and establishes various emission standards, including those for vehicles sold in states other than California.

(4) California Air Resources Board. In California, the CARB, which is part of the California Environmental Protection Agency (Cal EPA), is responsible for meeting the state requirements of the Federal CAA, administering the California CAA, and establishing the California Ambient Air Quality Standards (CAAQS). The California CAA, as amended in 1992, requires all air districts in the State to endeavor to achieve and maintain the California Ambient Air Quality Standards (CAAQS). The CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride and visibility reducing particles. The CARB regulates mobile air pollution sources, such as motor vehicles. Automobiles sold in California must meet the stricter emission standards established by the CARB. The agency is responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. The CARB established passenger vehicle fuel specifications, which became effective on March 1996. The CARB oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional and county level.

AB 32, Global Warming. In 2006, Assembly Bill 32 (AB 32), known as the *California Global Warming Solutions Act of 2006,* was signed into law. This bill establishes a comprehensive program of regulatory and market mechanisms to achieve real, quantifiable, cost-effective reductions of greenhouse gases (GHG). AB 32 appoints the ARB as the agency responsible for monitoring and reducing GH emission in the state of California. A more detailed discussion of GHGs is included at the end of this section.

Air Quality and Land Use Handbook. The CARB has also developed an Air Quality and Land Use Handbook[2] which is intended to serve as a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. The CARB handbook recommends that planning agencies strongly consider proximity to these sources when finding new locations for "sensitive" land uses such as homes, medical facilities, daycare centers, schools and playgrounds.

Air pollution sources of concern include freeways, rail yards, ports, refineries, distribution centers, chrome plating facilities, dry cleaners and large gasoline service stations. Key recommendations in the Handbook include taking steps to avoid siting new, sensitive land uses (including residences, day care centers, playgrounds or medical facilities):

- Within 500 feet of a freeway, urban roads with 100,000 vehicles / day or rural roads with 50,000 vehicles/day.
- Within 1,000 feet of a major service and maintenance rail yard.
- Immediately downwind of ports (in the most heavily impacted zones) and petroleum refineries.
- Within 300 feet of any dry cleaning operation (for operations with two or more machines, provide 500 feet).
- Within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater).

The Handbook specifically states that it's recommendations are advisory and acknowledges land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.

(5) Bay Area Air Quality Management District. The nine-county San Francisco Bay Area is considered, in air quality terms, an air basin. Overall, the air quality conditions in the San Francisco Bay Area are fairly good for a large metropolitan area due to favorable climate conditions that result in moderate temperatures and good ventilation. However, exceedances of air quality standards for ozone and respirable particulate matter pose challenges for air pollution control agencies. In addition, the CARB has identified the San Francisco Bay Area Air Basin as a transport contributor to adjacent air basins. So air pollutants emitted in the project area could contribute to air pollution problems in other areas of northern and central California.

The BAAQMD is primarily responsible for assuring that the National and State ambient air quality standards are attained and maintained in the Bay Area. The BAAQMD is also

[2] California Air Resources Board, 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.* April.

responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, conducting public education campaigns, as well as many other activities. The BAAQMD has jurisdiction over much of the nine-county Bay Area. San Francisco Bay air quality attainment status is shown in Table IV.D-3.

(6) Local Policies. The City of Oakland has policies related to air quality in the City's General Plan and the Standard Conditions of Approval as described below.

City of Oakland Air Quality Policies. The Open Space Conservation and Recreation (OSCAR) element of the City of Oakland's General Plan includes the following policies related to air quality;

- <u>Policy CO-12.1</u>: 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.
- <u>Policy CO-12.4</u>: Require that development projects be designed in a manner which reduces potential adverse air quality impacts.
- <u>Policy CO-12.6</u>: Control of Dust Emissions. Require construction, demolition, and grading practices which minimize dust emissions.

  These practices are currently required by the City and include the following:
  - Avoiding earth moving and other major dust generating activities on windy days.
  - Sprinkling unpaved construction areas with water during excavation, using reclaimed water where feasible. (Watering can reduce construction-related dust by 50 percent.)
  - Covering stockpiled sand, soil, and other particulates with a tarp to avoid blowing dust.
  - Covering trucks hauling dirt and debris to reduce spills. If spills do occur, they should be swept up promptly before materials become airborne.
  - Preparing a comprehensive dust control program for major construction in populated areas or adjacent to sensitive uses like hospitals and schools.
  - Operating construction and earth-moving equipment, including trucks, to minimize exhaust emissions.

City of Oakland's Standard Conditions of Approval. The City's Standard Conditions of Approval relevant to this impact topic are listed below for reference. The conditions of approval will be adopted as requirements of the proposed project if the project is approved by the City to help ensure no significant impacts (for the applicable topic) occur, as a result they are not listed as mitigation measures.

Table IV.D-3 San Francisco Bay Area Attainment Status

Pollutant	Averaging Time	California Standards[a]		National Standards[b]	
		Concentration	Attainment Status	Concentration	Attainment Status
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m³)	Attainment	9 ppm (10 mg/m³)	Attainment[c]
	1-Hour	20 ppm (23 mg/m³)	Attainment	35 ppm (40 mg/m³)	Attainment
Nitrogen Dioxide (NO2)	Annual Mean	0.03 ppm (56 µg/m³)		0.053 ppm (100 µg/m³)	Attainment
	1-Hour	0.18 ppm (338 µg/m³)	Attainment	Not Applicable	Not Applicable
Ozone (O3)	8-Hour	0.07 ppm (137 µg/m³)	Unclassified	0.08 ppm	Marginal
	1-Hour	0.09 ppm (180 µg/m³)	Nonattainment	Not Applicable	Not Applicable[d]
Suspended Particulate Matter (PM10)	Annual Mean	20 µg/m³	Nonattainment	Not Applicable	Not Applicable
	24-Hour	50 µg/m³	Nonattainment	150 µg/m³	Unclassified
Suspended Particulate Matter (PM2.5)	Annual Mean	12 µg/m³	Nonattainment	15 µg/m³	Attainment
	24-Hour	Not Applicable	Not Applicable	35 µg/m³	Unclassified
Sulfur Dioxide (SO2)	Annual Mean	Not Applicable	Not Applicable	0.03 ppm (80 µg/m³)	Attainment
	24-Hour	0.04 ppm (105 µg/m³)	Attainment	0.14 ppm (365 µg/m³)	Attainment
	1-Hour	0.25 ppm (655 µg/m³)	Attainment	Not Applicable	Not Applicable

Notes: Lead (Pb) is not listed in the table because it has been in attainment since the 1980s.
ppm = parts per million
g/m³ = milligrams per cubic meter
µg/m³ = micrograms per cubic meter

[a] California standards for O3, CO (except Lake Tahoe), SO2 (1- and 24-hour), NO2 and PM10 are values that are not to be exceeded. If the standard is for a 1-hour, 8-hour, or 24-hour average, then some measurements may be excluded. In particular, measurements are excluded that CARB determines would occur less than once per year on the average.

[b] National standards other than for O3 and those based on annual averages or annual arithmetic means are not to be exceeded more than once a year. For example, the O3 standard is attained if, during the most recent 3- year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than 1.

[c] In April 1998, the Bay Area was redesignated to Attainment for the national 8-hour CO standard.

[d] The National 1-hour ozone standard was revoked by U.S. EPA on June 15, 2005.

Source: Bay Area Air Quality Management District, Bay Area Attainment Status, 2007.

COA 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 BAAQMD basic and enhanced dust control procedures required for construction sites. These include:

BASIC (Applies to ALL construction sites)

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 2 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.

ENHANCED (All "Basic" Controls listed above plus the following if the construction site is greater than 4 acres)

a) All "Basic" controls listed above, plus:

b) Install sandbags or other erosion control measures to prevent silt runoff to public roadways.

c) Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for one month or more).

d) Designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust off-site. Their duties shall include holidays and weekend periods when work may not be in progress. The name and telephone number of such person shall be provided to the BAAQMD prior to the start of construction as well as posted on-site over the duration of construction.

e) Install appropriate wind breaks at the construction site to minimize wind blown dust.

COA 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 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.

b. Existing Air Quality Conditions. The following discussion provides brief summaries of: (1) regional air quality, (2) local climate and air quality.

(1) Regional Air Quality. The City of Oakland is located in the San Francisco Bay Area, a large shallow air basin ringed by hills that taper into a number of sheltered valleys around the perimeter. Two primary atmospheric outlets exist. One is through the Golden Gate Strait, a direct outlet to the Pacific Ocean. The second outlet extends to the northeast, along the west delta region of the Sacramento and San Joaquin Rivers.

The City of Oakland is within the jurisdiction of the BAAQMD, which regulates air quality in the San Francisco Bay Area. Air quality conditions in the San Francisco Bay Area have improved significantly since the BAAQMD was created in 1955. Ambient concentrations of air pollutants and the number of days during which the region exceeds air quality standards have fallen dramatically. Exceedances of air quality standards occur primarily during meteorological conditions conducive to high pollution levels, such as cold, windless winter nights or hot, sunny summer afternoons.

Ozone levels, measured by peak concentrations and the number of days over the State 1-hour standard, have declined substantially as a result of aggressive programs by the BAAQMD and other regional, State and federal agencies. The reduction of peak concentrations represents progress in improving public health; however the Bay Area still exceeds the State standard for 1-hour ozone.

Levels of PM10 in the Bay Area have exceeded State standards at least two times per year during the past three years. The Bay Area is considered a nonattainment area for PM10 and PM2.5 relative to the State standard, and unclassified for the federal standards.

No exceedances of the State or federal CO standards have been recorded at any of the region's monitoring stations since 1991. The Bay Area is currently considered a maintenance area for State and federal CO standards.

Toxic air contaminants (TACs) are not criteria pollutants, but are associated with health-related effects and have appreciable concentrations within the Bay Area. The U.S. EPA and the California ARB have identified over 800 substances that are emitted into the air that may affect human health. Some of these substances are considered to be carcinogens, while others are known to have other adverse health effects. As part of ongoing efforts to identify and assess potential health risks to the public, the BAAQMD has collected and compiled air toxics emissions data from industrial and commercial sources of air pollution throughout the Bay Area. Monitoring data and emissions inventory of toxic air contaminants helps the BAAQMD determine health risk to Bay Area residents. The 2003 emissions inventory shows that emissions of many TACs are decreasing in the Bay Area.

Ambient monitoring concentrations of TACs indicate that pollutants emitted primarily from motor vehicles (1,3-butadiene and benzene) account for slightly over one half of the average calculated cancer risk from ambient air in the Bay Area.[3] According to the BAAQMD, ambient benzene levels declined dramatically in 1996 with the advent of Phase 2 reformulated gasoline. Due to this reduction, the calculated average cancer risk based on monitoring results has been reduced to 143 in one million, however, this risk does not include the risk resulting from exposure to diesel particulate matter or other compounds not monitored. Although not specifically monitored, recent studies indicate that exposure to diesel particulate matter may contribute significantly to a cancer risk (approximately 500-700 in one million) that is greater than all other measured TACs combined.[4]

The BAAQMD's 2005 Ozone Strategy is the latest Clean Air Plans which contain district-wide control measures to reduce ozone precursor emissions (i.e., ROG and NOx) and particulate matter. Ozone, in particular, results from the reaction of organic gases (ROG) and nitrogen oxide (NOx) in the atmosphere. To reduce ozone, its precursors (ROG and NOx) are regulated. The State standards for these pollutants are at least as stringent as the national standards. Exceedances of air quality standards occur primarily during meteorological conditions conducive to high pollution levels, such as cold, windless winter nights or hot, sunny summer afternoons.

(2) Local Climate and Air Quality. Air quality is a function of both local climate and local sources of air pollution. The amount of a given air pollutant in the atmosphere is determined by the amount of pollutant released and the atmosphere's ability to transport

[3] BAAQMD, 2007. *Toxic Air Contaminant Control Program Annual Report 2003 Volume 1.* August.

[4] Ibid.

and/or dilute that pollutant. The major determinants of transport and dilution are wind, atmospheric stability, terrain, and, for photochemical pollutants, sunshine.

The City of Oakland is located in the Northern Alameda and Western Contra Costa Region of the Basin. This climatological subregion stretches from Richmond to San Leandro. Its western boundary is defined by San Francisco Bay and its eastern boundary by the Oakland/Berkeley hills. The Oakland /Berkeley hills have a ridge line height of approximately 1,500 feet, a significant barrier to air flow. The most densely populated area of the subregion lies in a strip of land between San Francisco Bay and the lower hills.

Temperatures in this subregion have a narrow range due to the proximity of the moderating marine air. Maximum temperatures in summer average in the mid-70's, with minimums in the mid-50's. Winter highs are in the mid- to high-50's, with lows in the low- to mid-40's.

The air pollution potential is lowest for the parts of the subregion that are closest to the bay, due largely to good ventilation and less influx of pollutants from upwind sources. The occurrence of light winds in the evenings and early mornings occasionally causes elevated pollutant levels. The air pollution potential at the northern (Richmond) and southern (Oakland, San Leandro) parts of this subregion is marginally higher than communities directly east of the Golden Gate, because of the lower frequency of strong winds.

This subregion contains a variety of industrial air pollution sources. Some industries are quite close to residential areas. The subregion is also traversed by frequently congested major freeways. Traffic and congestion, and the motor vehicle emissions they generate, are increasing.

Pollutant monitoring results for the years 2004 to 2006 are shown in Table IV.D-4, at the closest monitoring station to the project site for which data was available including the Oakland (Alice Street), San Pablo (Rumrill Boulevard) and San Francisco (Arkansas Street) monitoring stations. Ambient air quality monitoring stations indicate that air quality in the project area has generally been good. As indicated in the monitoring results, one violation of State PM10 standard was recorded in the year 2004, and three violations were recorded in the year 2006. No violation of federal PM10 standard was recorded during the three-year period. The State 1-hour ozone standard and the federal 8-hour ozone standard have not been exceeded within the past three years at these monitoring stations. Both State and federal CO, PM2.5, NO2, and SO2 standards were not exceeded in this area during the three-year period.

Table IV.D-4 Ambient Air Quality Monitoring Data

Pollutant	Standard	2004	2005	2006
Carbon Monoxide (CO)				
Maximum 1-hour concentration (ppm)		3.5[a]	3.4[a]	2.52[b]
Number of days exceeded:	State: > 20 ppm	0	0	0
	Federal: > 35 ppm	0	0	0
Maximum 8-hour concentration (ppm)		2.6	2.4	1.4[b]
Number of days exceeded:	State: > 9 ppm	0	0	0
	Federal: > 9 ppm	0	0	0
Ozone (O3)				
Maximum 1-hour concentration (ppm)		0.080[a]	0.068[a]	0.061[b]
Number of days exceeded:	State: > 0.09 ppm	0	0	0
Maximum 8-hour concentration (ppm)		0.057[a]	0.045[a]	0.050[b]
Number of days exceeded:	State: > 0.07 ppm	0	0	0
	Federal: > 0.08 ppm	0	0	0
Coarse Particulates (PM10)				
Maximum 24-hour concentration (μg/m^3)		62[b]	40[b]	58[b]
Number of days exceeded:	State: > 50 μg/m^3	1	0	3
	Federal: > 150 μg/m^3	0	0	0
Annual arithmetic average concentration (μg/m^3)		21	18	21
Exceeded for the year:	State: > 20 μg/m^3	Yes	No	Yes
	Federal: > 50 μg/m^3	No	No	No
Fine Particulates (PM2.5)				
Maximum 24-hour concentration (μg/m^3)		46[c]	44[c]	54[c]
Number of days exceeded:	Federal: > 65 μg/m^3	0	0	0
Annual arithmetic average concentration (μg/m^3)		10.0[c]	9.5[c]	9.7[c]
Exceeded for the year:	State: > 12 μg/m^3	No	No	No
	Federal: > 15 μg/m^3	No	No	No
Nitrogen Dioxide (NO2)				
Maximum 1-hour concentration (ppm)		0.055	0.054	0.055
Number of days exceeded:	State: > 0.25 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.013	0.012	0.013
Exceeded for the year:	Federal: > 0.053 ppm	No	No	No
Sulfur Dioxide (SO2)				
Maximum 1-hour concentration (ppm)		0.019[b]	0.025[b]	0.017[b]
Number of days exceeded:	State: > 0.25 ppm	0	0	0
Maximum 3-hour concentration (ppm)		0.010[b]	0.013[b]	0.012[b]
Number of days exceeded:	Federal: > 0.5 ppm	0	0	0
Maximum 24-hour concentration (ppm)		0.005[b]	0.006[b]	0.005[b]
Number of days exceeded:	State: > 0.04 ppm	0	0	0
	Federal: > 0.14 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.002[b]	0.002[b]	0.002[b]
Exceeded for the year:	Federal: > 0.030 ppm	No	No	No

Notes: ppm = parts per million μg/m^3 = micrograms per cubic meter
[a] Monitoring Results taken from the Oakland monitoring station located at 822 Alice Street.
[b] Monitoring results taken from the San Pablo Monitoring station located on Rumrill Boulevard
[c] Monitoring results taken from the San Francisco monitoring station located on Arkansas Street

Source: ARB and EPA.

c. Air Quality Issues. Seven key air quality issues – local CO hotspots, vehicle emissions, fugitive dust, odors, construction equipment exhaust, toxic air contaminants and climate change – are described below.

(1) Local Carbon Monoxide Hotspots. Local air quality is most affected by CO emissions from motor vehicles. CO is typically the pollutant of greatest concern because it is created in abundance by motor vehicles and it does not readily disperse into the air. Because CO does not readily disperse, areas of vehicle congestion can create "pockets" of high CO concentration called "hot spots." These pockets have the potential to exceed the State 1-hour standard of 20.0 ppm and/or the 8-hour standard of 9.0 ppm.

While CO transport is limited, it disperses with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations near congested roadways or intersections may reach unhealthful levels that adversely affect local sensitive receptors (e.g., residents, schoolchildren, the elderly, hospital patients, etc.). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes. In areas with high ambient background CO concentration, modeling is recommended to determine a project's effect on local CO levels.

(2) Vehicle Emissions. Long-term air emission impacts are those associated with changes in automobile travel within the City. Mobile source emissions would result from vehicle trips associated with increased vehicular travel. As is true throughout much of the U.S., motor vehicle use is projected to increase substantially in the region. The BAAQMD, local jurisdictions, and other parties responsible for protecting public health and welfare will continue to seek ways of minimizing the air quality impacts of growth and development in order to avoid further exceedances of the standards.

(3) Fugitive Dust. Fugitive dust emissions are generally associated with demolition, land clearing, exposure of soils to the air, and cut and fill operations. Dust generated during construction varies substantially on a project-by-project basis, depending on the level of activity, the specific operations, and weather conditions.

The EPA has developed an approximate emission factor for construction-related emissions of total suspended particulate of 1.2 tons per acre per month of activity. This factor assumes a moderate activity level, moderate silt content in soils being disturbed, and a semi-arid climate. The California Air Resources Board estimates that 64 percent of construction-related total suspended particulate emissions is PM10. Therefore, the emission factors for uncontrolled construction-related PM10 emissions are:

- 0.77 tons per acre per month of PM10; or
- 51 pounds per acre per day of PM10.

However, construction emissions can vary greatly depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, weather conditions, and other factors. There are a number of feasible control measures that can be reasonably implemented to significantly reduce PM10 and PM2.5 emissions from construction. Rather than attempting to provide detailed quantification of anticipated construction emissions from projects, the BAAQMD suggests the following:

> "The determination of significance with respect to construction emissions should be based on a consideration of the control measures to be implemented. From the District's perspective, quantification of emissions is not necessary, although a lead agency may elect to do so. If all of the control measures indicated as appropriate, depending on the size of the project, are implemented, then air pollution from emissions from construction activities would be considered a less-than-significant impact."[5]

(4) Odors. Odors are also an important element of local air quality conditions. Specific activities can raise concerns on the part of nearby neighbors. Major sources of odors include restaurants, manufacturing plants, and agricultural operations. Other odor producers include the industrial facilities within the region. While sources that generate objectionable odors must comply with air quality regulations, the public's sensitivity to locally produced odors often exceeds regulatory thresholds.

(5) Construction Equipment Exhaust. Construction activities cause combustion emissions from utility engines, heavy-duty construction vehicles, equipment hauling materials to and from construction sites, and motor vehicles transporting construction crews. Exhaust emissions from construction activities vary daily as construction activity levels change. The use of construction equipment results in localized exhaust emissions.

(6) Toxic Air Contaminants. In 1998 the ARB identified diesel engine particulate matter as a toxic air contaminant. Facilities that may have substantial diesel exhaust emissions include truck stops; warehouse/distribution centers; large commercial or industrial facilities; high volume transit centers; schools with high volume of bus traffic; high volume highways or high volume arterial/roadways with high levels of diesel traffic.

(7) Climate Change. Global warming is the observed increase in the average temperature of the earth's atmosphere and oceans in recent decades. The earth's average near-surface atmospheric temperature rose 0.6 ± 0.2° Celsius (1.1 ± 0.4° Fahrenheit) in the 20th century. The prevailing scientific opinion on climate change is that "most of the

[5] Bay Area Air Quality Management District, 1966. *BAAQMD CEQA Guidelines Assessing the Air Quality Impacts of Projects and Plans*. April. (Amended in December 1999.)

warming observed over the last 50 years is attributable to human activities."[6] The increased amounts of carbon dioxide (CO2) and other greenhouse gases (GHGs) are the primary causes of the human-induced component of warming. They are released by the burning of fossil fuels, land clearing and agriculture, etc., and lead to an increase in the greenhouse effect.

Greenhouse gases are present in the atmosphere naturally, released by natural sources, or formed from secondary reactions taking place in the atmosphere. They include carbon dioxide, methane, nitrous oxide and ozone. In the last 200 years, mankind has been releasing substantial quantities of greenhouse gases into the atmosphere. These extra emissions are increasing greenhouse gas concentrations in the atmosphere, enhancing the natural greenhouse effect, which is believed to be causing global warming. While man-made greenhouse gases include carbon dioxide, methane and nitrous oxide, some like the CFCs are completely new to the atmosphere.

Natural sources of carbon dioxide include the respiration (breathing) of animals and plants, and evaporation from the oceans. Together, these natural sources release about 150 billion tons of carbon dioxide each year, far outweighing the 7 billion tons of man-made emissions from fossil fuel burning, waste incineration, deforestation and industrial activities. Nevertheless, natural removal processes, such as photosynthesis by land and ocean-dwelling plant species, cannot keep pace with this extra input of man-made carbon dioxide, and consequently the gas is building up in the atmosphere.

Methane is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources include wetlands, termites, and oceans. Man-made sources include the mining and burning of fossil fuels, digestive processes in ruminant animals such as cattle, rice paddies and the burying of waste in landfills. Total annual emissions of methane are about 500 million tons, with man-made emissions accounting for the majority. As is the case for carbon dioxide, the major removal process of atmospheric methane – chemical breakdown in the atmosphere – cannot keep pace with source emissions, and methane concentrations in the atmosphere are increasing

2. Air Quality Impacts and Mitigation Measures

This section discusses potential impacts to air quality that could result from implementation of the project. The section begins with the significance criteria, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with the project and identifies mitigation measures, as appropriate.

[6] Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2001: The Scientific Basis*, http://www.grida.no/climate/ipcc_tar/wg1/index.htm.

a. Criteria of Significance. Implementation of the project would have a significant impact on air quality if it would:

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- 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).
- Expose sensitive receptors to substantial pollutant concentrations.
- Frequently create substantial objectionable odors affecting a substantial number of people.
- 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 carbon monoxide 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.*]
- Result in total emissions of ROG, NOx, or PM10 of 15 tons per year or greater, or 80 pounds (36 kilograms) per day or greater.
- Result in potential to expose persons to substantial levels of Toxic Air Contaminants (TAC), such that the probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeds 10 in one million.
- Result in ground level concentrations of non-carcinogenic TACs such that the Hazard Index would be greater than 1 for the MEI.
- Result in a substantial increase in diesel emissions.

A cumulative impact would occur if conditions would:

- Result in any individual significant air quality impact.
- 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.

b. Less-than-Significant Air Quality Impacts. A discussion of several less-than-significant impacts of the proposed project as described below.

(1) Consistency with the Air Quality Plan. The most recent BAAQMD plan for attaining California Ambient Air Quality Standards, the Bay Area 2005 Ozone Strategy, was adopted by BAAQMD on January 4, 2006. The 2005 Ozone Strategy is the fourth triennial update of the BAAQMD's original 1991 Clean Air Plan (CAP). The 2005 Ozone Strategy demonstrates how the San Francisco Bay Area will achieve compliance with the State 1-hour air quality standard for ozone and how the region will reduce transport of ozone and ozone precursors to neighboring air basins. The Ozone Strategy also includes stationary source control measures, mobile source control measures and transportation control measures. The proposed project is considered a Transportation Control Measure (TCM) under the 2005 Ozone Strategy. The project is consistent with the 2005 Ozone Strategy under TCM #15, Local Land Use Planning and Development Strategies because of the proposed project's transit-oriented development (TOD) along a major transit corridor. Although it is only required to address ozone pollution and associated control measures, the Ozone Strategy also discusses particulate matter pollution and reduction measures. The Clean Air Plan projections are based on analysis and forecasts of air pollutant emissions throughout the entire region. The forecasts rely on projections of population and employment made by the Association of Bay Area Governments (ABAG), which are based on land use projections made by local jurisdictions (e.g., General Plan process). The MacArthur Transit Village project is consistent with the General Plan designations for the project site and therefore the population and employment increase that would result from the proposed project would be consistent with projections used in the development of the Clean Air Plan. As a result, the proposed project would be consistent with regional air quality planning and not result in a significant cumulative impact to air quality.

(2) Regional Air Emissions. Regional air emissions are generated by land use development projects, primarily by the motor vehicle trips generated by the projects. These are often referred to as "indirect sources" and include projects such as shopping centers, office buildings, and residential developments. The proposed project includes the development of residential units, commercial shopping space and community space.

Mobile source emissions would result from vehicle trips associated with the proposed project. The Urban Emission Model (URBEMIS 2007 v. 9.2) computer program, which is the most current air quality model available in California for estimating emissions associated with land use development projects, was used to calculate long-term regional emissions associated with the proposed project. URBEMIS output sheets are included in Appendix B of this report.

The daily increase in emissions associated with project operational and area sources is identified in Table IV.D-5 for reactive organic gases (ROG) and nitrogen oxides (NOx) (two precursors of ozone) and coarse particle matter (PM10). The BAAQMD has established thresholds of significance for ozone precursors and PM10 of 80 pounds per day; however, they have not established a threshold for emissions of PM2.5 or CO2. Proposed project emissions shown in Table IV.D-5 would not exceed these thresholds of significance for ROG, NOx, and PM10, and therefore, the proposed project would not have a significant effect on regional air quality.

Table IV.D-5 Project Regional Emissions in Pounds Per Day

	Reactive Organic Gases	Nitrogen Oxides	PM10	PM2.5
Operation (Vehicle) Emissions	25.0	39.5	58.3	11.1
Area Source Emissions	38.5	9.29	0.3	0.3
Total Regional Emissions	**69.5**	**48.8**	**58.6**	**11.4**
BAAQMD Significance Threshold	80.0	80.0	80.0	NA
Exceed?	No	No	No	NA

Source: LSA Associates, Inc., 2007.

(3) Contribute to Air Quality Violation. The City of Oakland is considered a non-attainment area for ozone and PM10 and PM2.5. As noted above, the Bay Area 2005 Ozone Strategy, which also addresses particulate matter, is the air quality plan that applies to projects within the City of Oakland. Based on the URBEMIS model analysis, the proposed project is not expected to contribute a significant amount of regional emissions. The proposed project would contribute to regional ozone emissions in the form of emissions from construction vehicles and the project would contribute to particulate matter emissions through construction vehicle emissions and the disturbance of soil within the project site during the construction period.

Construction activities would vary through the developmental stages of the project. Construction activities for various project stages may include the use of earthmoving equipment and water and pick-up trucks. Ground disturbance and the operation of motorized construction vehicles would incrementally increase ozone and particulate matter emissions in the region during the project construction period.

Construction emissions are considered temporary and are accounted for the regional air quality plan for attainment. Temporary, construction period air quality impacts (for all pollutants) are considered less-than-significant if standard BAAQMD particulate matter control measures are implemented. Implementation of the City's Dust Control and Construction Emissions Standard Conditions of Approval (see COA AIR-1 and AIR-2 on pages 235 and 236) which includes the required BAAQMD control measures and control measures that would reduce emissions from construction equipment, would reduce the project's construction period air quality impacts (including construction period conflicts with the 2005 Ozone Strategy) to a less-than-significant level.

(4) Cumulative Increase of Any Criteria Pollutant. Cumulative air quality impacts associated with criteria pollutants are evaluated based on both a quantification of the project-related air quality impacts and the consistency of the project with local and regional air quality plans (i.e., the *Oakland General Plan* and the Bay Area 2005 Ozone Strategy). As shown in Table IV.D-5 emissions from the proposed project would not exceed BAAQMD significance thresholds. For projects that do not individually have a significant air quality impacts, the determination of significant cumulative impact is based on the evaluation of the consistency of the project with the local General Plan and the General Plan with the regional air quality plan. The proposed project does not individually exceed regional emission thresholds and is consistent with general plan land use assumptions and the regional air quality plan utilizes the ABAG projections, which is consistent with the City of Oakland General Plan. Therefore, the proposed project would not contribute significantly to a cumulative increase of any criteria pollutant.

(5) Exposure of sensitive receptors to substantial pollutant concentrations. Sensitive receptors are facilities that house or attract children, the elderly, and people with illnesses or others who are especially sensitive to the effects of air pollutants. Hospitals, schools, convalescent facilities, and residential areas are examples of sensitive receptors.

As shown in Table IV.D-5 based on the type of uses proposed for the project site (residential and commercial) the operation of the project would not generate substantial pollutants and thus would not expose sensitive receptors to substantial pollutant concentrations. Construction of the project would temporarily increase localized emissions. As noted above however, temporary, construction period air quality impacts (for all pollutants) are considered less-than-significant if standard BAAQMD particulate matter control measures are implemented. Implementation of the City's City's Dust Control and Construction Emissions Standard Conditions of Approval (see COA AIR-1 and AIR-2 on pages 235 and 236) would reduce construction emissions to a less-than-significant level.

Construction emission estimates based on preliminary construction plans have been calculated using the URBEMIS 2007 model. Table IV.D-6 shows the construction emission model results. The BAAQMD does not have significance thresholds for construction emissions, therefore, this information if for informational purposes.

As discussed above, the CARB has developed guidelines to be considered in the siting of new sensitive land uses (including residential uses) to protect vulnerable populations from the adverse health impacts of traffic-related emissions. The guidelines are not regulatory, nor are they binding on local agencies. Specifically, CARB's advisory recommendation for sensitive land uses proposed near freeways and high-traffic roads is to "[a]void siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day." Sensitive uses would include residences, day care centers, playgrounds or medical facilities. The proposed project is located as close as 75 feet from State Route 24 (SR-24) and 1,000 feet from I-580. However, CARB also recognizes

Table IV.D-6 Construction Emission Estimates

	Construction Emission Estimates										
	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009 Totals (lbs/day unmitigated)	7.08	35.75	86.88	0.08	64.00	1.96	65.34	13.37	1.78	14.60	9,469.91
2010 Totals (lbs/day unmitigated)	6.58	33.23	81.12	0.08	0.35	1.82	2.17	0.13	1.66	1.78	9,472.87
2011 Totals (lbs/day unmitigated)	6.07	30.67	75.56	0.08	0.35	1.71	2.06	0.13	1.56	1.68	9,476.14
2012 Totals (lbs/day unmitigated)	33.55	28.26	70.65	0.08	0.35	1.57	1.92	0.13	1.43	1.55	9,512.65
2013 Totals (lbs/day unmitigated)	33.07	25.91	65.71	0.08	0.35	1.42	1.77	0.13	1.29	1.41	9,515.76
2014 Totals (lbs/day unmitigated)	32.63	23.68	61.10	0.08	0.35	1.28	1.63	0.13	1.16	1.28	9,518.60

Source: LSA Associates, 2007.

that there is no "one size fits all" solution to land use planning, and that in addressing housing and transportation needs, the benefits of urban infill, community economic development priorities and other quality of life issues are also important and these must be considered and weighed by local decision makers when siting projects. The Handbook also acknowledges that the relative risk from site to site can vary greatly and that to determine the actual risk near a particular facility, a site-specific analysis (e.g., health risk assessment) is necessary.

The City has not historically required projects adjacent to freeways to conduct such analysis. Since the proposed project involves development in excess of 600 housing units, is located adjacent to two freeways, BART, multiple agencies, and substantial public funding, there was a desire for a more conservative analysis that is not legally required under CEQA. As a result, a health risk assessment was performed to evaluate the risk to future site residents caused by exposure to toxic air contaminants from vehicle exhaust from I-580, SR-24 and Telegraph Avenue in accordance with these guidelines (see discussion below under Toxic Air Contaminants). The risk assessment determined that the future residents would not be exposed to significant levels of to toxic air contaminants; as a result no significant impact related to the siting of sensitive uses adjacent to a freeway would result.

(6) Objectionable Odors. The operation of the project would not generate objectionable odors. The proposed project includes residential and commercial land uses which are not expected to generate objectionable odors. Odors associated with food services would need to comply with local ordinances regarding appropriate venting of cooking areas. Therefore, the project would not frequently create substantial objectionable odors affecting a substantial number of people. This potential impact would be less than significant.

(7) CO Concentrations. Vehicular traffic associated with the project would emit carbon monoxide (CO) into the air along roadway segments and near intersections. As previously described, because CO does not readily disperse, areas of vehicle congestion can create pockets of high CO concentrations, called "hot spots." Typically, high CO concentrations are associated with roadways or intersections operating at deficient levels of service (LOS) or with extremely high traffic volumes. An analysis of the potential CO hotspots was performed for intersections in the project vicinity.

The CALINE4 air pollutant dispersion model was used to evaluate CO concentrations at intersections in the vicinity of the project site. Based on the methodology suggested by the U.S. EPA and the California Department of Transportation, the second highest CO concentrations monitored at the nearest air monitoring station in the past 2 years (in this case 3.3 ppm for the 1-hour period and 2.4 ppm for the 8-hour period) were used as the background CO concentrations. Emission factors for study scenarios were obtained from the latest confirmed CARB data. The eight intersections at the perimeter of the site are listed on Tables VI-D-7, 8 and 9, below.

Table IV.D-4 lists the 1-hour and 8-hour CO concentrations for the Existing (2007) and Existing Plus Project conditions at eight intersections in the project study area. Table IV.D-8 lists the concentrations for the Cumulative Year 2015 Baseline With and Without the Proposed Project scenarios. Table IV.D-9 lists the concentrations for the Cumulative Year 2030 Baseline With and Without the Proposed Project scenarios.

Table IV.D-7 shows that all 1-hour and 8-hour CO concentrations for existing conditions, with- and without-the-project, would be below the federal and State CO standards. The 1-hour CO levels range from 3.6 to 5.3 ppm, much lower than the State CO standard of 20 ppm. The 8-hour CO levels range from 2.5 ppm to 3.7 ppm, also much lower then the State and federal standard of 9 ppm.

Table IV.D-8 shows that all 1-hour and 8-hour CO concentrations with the Cumulative Year 2015 Baseline Plus Project scenario would be below the federal and State CO standards. The 1-hour CO levels range from 3.3 ppm to 4.3 ppm, which are much lower then the State

Table IV.D-7 CO Concentrations for Existing and Existing Plus Project Conditions

No.	Intersection	Receptor Distance to Road Centerline (Meters)	Project Related Increase 1-Hr/8-Hr (ppm)	Existing Plus Project/ Existing 1-Hour CO Concentration (ppm)	Existing Plus Project/ Existing 8-Hour CO Concentration (ppm)	Exceeds State Standards 1-Hr	Exceeds State Standards 8-Hr
5	M.L. King Jr. Way/ 45th Street	11	0.0 / 0.0	4.2 / 4.2	3.0 / 3.0	No	No
		11	0.0 / 0.0	4.1 / 4.1	3.0 / 3.0	No	No
		11	0.0 / 0.0	4.1 / 4.1	3.0 / 3.0	No	No
		10	0.1 / 0.1	4.0 / 4.1	2.9 / 3.0	No	No
6	Telegraph Avenue/ 45th Street	11	0.0 / 0.0	5.0 / 5.0	3.6 / 3.6	No	No
		11	0.0 / 0.0	5.0 / 5.0	3.6 / 3.6	No	No
		10	0.0 / 0.0	5.0 / 5.0	3.6 / 3.6	No	No
		10	0.1 / 0.1	4.9 / 5.0	3.5 / 3.6	No	No
9	M.L. King Jr. Way/ 40th Street	14	0.1 / 0.0	5.1 / 5.2	3.7 / 3.7	No	No
		14	0.1 / 0.0	5.1 / 5.2	3.7 / 3.7	No	No
		14	0.1 / 0.0	5.1 / 5.2	3.7 / 3.7	No	No
		14	0.1 / 0.0	5.1 / 5.2	3.7 / 3.7	No	No
10	Frontage Road/ 40th Street	14	0.1 / 0.0	4.8 / 4.9	3.5 / 3.5	No	No
		14	0.0 / 0.0	4.7 / 4.7	3.4 / 3.4	No	No
		12	0.0 / 0.0	4.7 / 4.7	3.4 / 3.4	No	No
		12	0.0 / 0.0	4.6 / 4.6	3.3 / 3.3	No	No
13	Telegraph Avenue/ 40th Street	14	0.0 / 0.0	5.3 / 5.3	3.8 / 3.8	No	No
		14	0.1 / 0.1	5.2 / 5.3	3.7 / 3.8	No	No
		14	0.0 / 0.0	5.2 / 5.2	3.7 / 3.7	No	No
		14	0.1 / 0.0	5.1 / 5.2	3.7 / 3.7	No	No
18	M.L. King Jr. Way/ MacArthur Boulevard	14	0.0 / 0.0	4.6 / 4.6	3.3 / 3.3	No	No
		14	0.1 / 0.0	4.4 / 4.5	3.2 / 3.2	No	No
		14	0.1 / 0.0	4.4 / 4.5	3.2 / 3.2	No	No
		14	0.0 / 0.0	4.4 / 4.4	3.2 / 3.2	No	No
19	Frontage Road/ MacArthur Boulevard	14	0.0 / 0.0	4.4 / 4.4	3.2 / 3.2	No	No
		14	0.0 / 0.0	4.4 / 4.4	3.2 / 3.2	No	No
		14	0.1 / 0.1	4.3 / 4.4	3.1 / 3.2	No	No
		14	0.1 / 0.1	4.3 / 4.4	3.1 / 3.2	No	No
20	Telegraph Avenue/ MacArthur Boulevard	17	0.1 / 0.1	5.6 / 5.7	4.0 / 4.1	No	No
		14	0.1 / 0.1	5.5 / 5.6	3.9 / 4.0	No	No
		14	0.1 / 0.0	5.4 / 5.5	3.9 / 3.9	No	No
		14	0.0 / 0.0	5.3 / 5.3	3.8 / 3.8	No	No

Note: Includes ambient 1-hour concentration of 3.3 ppm and ambient 8-hour concentration of 2.4 ppm.

Source: LSA Associates, Inc., 2007.

Table IV.D-8 CO Concentrations for Cumulative Year 2015 Baseline With and Without the Project

No.	Intersection	Receptor Distance to Road Centerline (Meters)	Project Related Increase 1-Hr/8-Hr (ppm)	2015 With Project/ 2015 Without 1-Hour CO Concentration (ppm)	2015 With Project/ 2015 Without 8-Hour CO Concentration (ppm)	Exceeds State Standards	
						1-Hr	8-Hr
5	M.L. King Jr. Way/ 45th Street	11	0.0 / 0.0	3.8 / 3.8	2.8 / 2.8	No	No
		11	0.0 / 0.0	3.8 / 3.8	2.8 / 2.8	No	No
		10	0.1 / 0.1	3.7 / 3.8	2.7 / 2.8	No	No
		10	0.0 / 0.0	3.7 / 3.7	2.7 / 2.7	No	No
6	Telegraph Avenue/ 45th Street	11	0.0 / 0.0	4.4 / 4.4	3.2 / 3.2	No	No
		11	0.0 / 0.0	4.4 / 4.4	3.2 / 3.2	No	No
		10	0.0 / 0.0	4.3 / 4.3	3.1 / 3.1	No	No
		10	0.1 / 0.1	4.2 / 4.3	3.0 / 3.1	No	No
9	M.L. King Jr. Way/ 40th Street	14	0.1 / 0.1	4.3 / 4.4	3.1 / 3.2	No	No
		14	0.0 / 0.0	4.3 / 4.3	3.1 / 3.1	No	No
		14	0.0 / 0.0	4.3 / 4.3	3.1 / 3.1	No	No
		14	0.1 / 0.1	4.2 / 4.3	3.0 / 3.1	No	No
10	Frontage Road/ 40th Street	14	0.0 / 0.0	4.1 / 4.1	3.0 / 3.0	No	No
		14	0.0 / 0.0	4.0 / 4.0	2.9 / 2.9	No	No
		14	0.0 / 0.0	4.0 / 4.0	2.9 / 2.9	No	No
		12	0.0 / 0.0	4.0 / 4.0	2.9 / 2.9	No	No
13	Telegraph Avenue/ 40th Street	14	0.1 / 0.1	4.5 / 4.6	3.2 / 3.3	No	No
		14	0.0 / 0.0	4.5 / 4.5	3.2 / 3.2	No	No
		14	0.0 / 0.0	4.5 / 4.5	3.2 / 3.2	No	No
		14	0.0 / 0.0	4.4 / 4.4	3.2 / 3.2	No	No
18	M.L. King Jr. Way/ MacArthur Boulevard	14	0.1 / 0.0	4.1 / 4.2	3.0 / 3.0	No	No
		14	0.0 / 0.0	4.0 / 4.0	2.9 / 2.9	No	No
		14	0.0 / 0.0	4.0 / 4.0	2.9 / 2.9	No	No
		14	0.0 / 0.0	4.0 / 4.0	2.9 / 2.9	No	No
19	Frontage Road/ MacArthur Boulevard	14	0.0 / 0.0	4.0 / 4.0	2.9 / 2.9	No	No
		14	0.1 / 0.1	3.9 / 4.0	2.8 / 2.9	No	No
		14	0.0 / 0.0	3.9 / 3.9	2.8 / 2.8	No	No
		14	0.0 / 0.0	3.9 / 3.9	2.8 / 2.8	No	No
20	Telegraph Avenue/ MacArthur Boulevard	17	0.0 / 0.0	4.7 / 4.7	3.4 / 3.4	No	No
		14	0.0 / 0.0	4.6 / 4.6	3.3 / 3.3	No	No
		14	0.1 / 0.1	4.5 / 4.6	3.2 / 3.3	No	No
		14	0.1 / 0.0	4.4 / 4.5	3.2 / 3.2	No	No

Note: Includes ambient 1-hour concentration of 3.3 ppm and ambient 8-hour concentration of 2.4 ppm.

Source: LSA Associates, Inc., 2007.

standard of 20 ppm. The 8-hour CO levels would range from 2.3 ppm to 3.0 ppm, also much lower than the State standard of 9 ppm. Table IV.D-9 shows that all 1-hour and 8-hour CO concentrations with the Cumulative Year 2030 Baseline Plus Project scenario would be below the federal and State CO standards. The 1-hour CO levels range from 3.1 ppm to 3.6 ppm, which are much lower then the State standard of 20 ppm. The 8-hour CO levels would range from 2.1 ppm to 2.5 ppm, also much lower than the State standard of 9 ppm.

Based on the results of the CALINE4 analysis, the proposed project would not result in any CO hotspots.

(8) Toxic Air Contaminants. According to the BAAQMD CEQA Guidelines, any project with the potential to expose sensitive receptors (including residential areas) or the general public to substantial levels of toxic air contaminants would be deemed to have a significant impact. This applies to receptors locating near existing sources of toxic air contaminants, as well as sources of toxic air contaminants locating near existing receptors.

A health risk assessment was performed to evaluate the risk to future site residents caused by exposure to toxic air contaminants from vehicle exhaust from I-580, SR-24 and Telegraph Avenue. The risk assessment considered specific meteorological conditions for the project site and the site's proximity to these roadway locations. The health risk assessment estimated the potential non-cancer health effects of diesel exhaust using a measure known as the chronic hazard index. A chronic hazard index of less than 1.0 indicates that a chemical would not have a significant non-cancer health effect. The maximum chronic hazard index associated with vehicle emissions on the project site is 0.0000002, which is well below the significance criterion.

The health risk assessment also estimated the maximum individual cancer risk resulting from the inhalation of diesel exhaust over a 70-year lifetime using the guidelines for air toxics hot spots recommended by the California Office of Environmental Health Hazard Assessment. The maximum individual cancer risk for an individual living at the proposed development is no more than 0.0004 in 1 million. This risk is well below the significance criterion threshold of 10 in 1 million. Thus, the cancer risk associated with future residential use of the project site would not exceed the significance criterion for toxic air contaminants as established by the BAAQMD.

Additional details on the methodology of the health risk assessment and complete model output results are located in Appendix B.

c. Significant Air Quality Impacts. The proposed project would not result in any significant air quality impacts.

Table IV.D-9 CO Concentrations for Cumulative Year Baseline 2030 With and Without the Project

No.	Intersection	Receptor Distance to Road Centerline (Meters)	Project Related Increase 1-Hr/8-Hr (ppm)	2030 With Project/ 2030 Without 1-Hour CO Concentration (ppm)	2030 With Project/ 2030 Without 8-Hour CO Concentration (ppm)	Exceeds State Standards	
						1-Hr	8-Hr
5	M.L. King Jr. Way/ 45th Street	11	0.0 / 0.0	3.6 / 3.6	2.6 / 2.6	No	No
		11	0.0 / 0.0	3.5 / 3.5	2.5 / 2.5	No	No
		10	0.0 / 0.0	3.5 / 3.5	2.5 / 2.5	No	No
		10	0.0 / 0.0	3.5 / 3.5	2.5 / 2.5	No	No
6	Telegraph Avenue/ 45th Street	11	0.0 / 0.0	3.8 / 3.8	2.8 / 2.8	No	No
		11	0.0 / 0.0	3.8 / 3.8	2.8 / 2.8	No	No
		10	0.0 / 0.0	3.8 / 3.8	2.8 / 2.8	No	No
		10	0.0 / 0.0	3.8 / 3.8	2.8 / 2.8	No	No
9	M.L. King Jr. Way/ 40th Street	14	0.0 / 0.0	3.8 / 3.8	2.8 / 2.8	No	No
		14	0.0 / 0.0	3.8 / 3.8	2.8 / 2.8	No	No
		14	0.0 / 0.0	3.8 / 3.8	2.8 / 2.8	No	No
		14	0.0 / 0.0	3.8 / 3.8	2.8 / 2.8	No	No
10	Frontage Road/ 40th Street	14	0.0 / 0.0	3.7 / 3.7	2.7 / 2.7	No	No
		14	0.0 / 0.0	3.7 / 3.7	2.7 / 2.7	No	No
		14	0.0 / 0.0	3.7 / 3.7	2.7 / 2.7	No	No
		12	0.0 / 0.0	3.7 / 3.7	2.7 / 2.7	No	No
13	Telegraph Avenue/ 40th Street	14	0.0 / 0.0	3.9 / 3.9	2.8 / 2.8	No	No
		14	0.0 / 0.0	3.9 / 3.9	2.8 / 2.8	No	No
		14	0.0 / 0.0	3.9 / 3.9	2.8 / 2.8	No	No
		14	0.1 / 0.0	3.8 / 3.9	2.8 / 2.8	No	No
18	M.L. King Jr. Way/ MacArthur Boulevard	14	0.0 / 0.0	3.8 / 3.8	2.8 / 2.8	No	No
		14	0.0 / 0.0	3.7 / 3.7	2.7 / 2.7	No	No
		14	0.0 / 0.0	3.7 / 3.7	2.7 / 2.7	No	No
		14	0.0 / 0.0	3.7 / 3.7	2.7 / 2.7	No	No
19	Frontage Road/ MacArthur Boulevard	14	0.0 / 0.0	3.7 / 3.7	2.7 / 2.7	No	No
		14	0.0 / 0.0	3.7 / 3.7	2.7 / 2.7	No	No
		14	0.0 / 0.0	3.7 / 3.7	2.7 / 2.7	No	No
		14	0.0 / 0.0	3.7 / 3.7	2.7 / 2.7	No	No
20	Telegraph Avenue/ MacArthur Boulevard	17	0.0 / 0.0	4.0 / 4.0	2.9 / 2.9	No	No
		14	0.0 / 0.0	4.0 / 4.0	2.9 / 2.9	No	No
		14	0.1 / 0.1	3.9 / 4.0	2.8 / 2.9	No	No
		14	0.0 / 0.0	3.9 / 3.9	2.8 / 2.8	No	No

Note: Includes ambient 1-hour concentration of 3.3 ppm and ambient 8-hour concentration of 2.4 ppm.

Source: LSA Associates, Inc., 2007.

d. Cumulative Air Quality Impacts. The geographic area considered for the air quality cumulative is generally the BAAQMD Air Basin. Cumulative green house gas emissions are considered in a larger context (see discussion below).

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 IV.D-5 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. Tables IV.D-7, IV.D-8 and IV.D-9 show that the project would not result in any or significantly contribute to any significant CO related impacts (see Sections 2.b.(2) and 2.b.(7)). As a result, no significant project impacts were identified. 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 2005 Bay Area Ozone Strategy and with the local general plan.

As discussed in Section 2.b.(1), Consistency with the Air Quality Plan, the MacArthur Transit Village project is consistent with the General Plan designations for the project site and therefore the population and employment increase that would result from the proposed project would be consistent with projections used in the development of the Clean Air Plan.

In addition, the proposed project would generally be consistent with the 2005 Bay Area 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, embody. As described by ABAG, 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.[7]

[7] ABAG, "What is Smart Growth?" August 2004. www.abag.ca.gov/planning/smartgrowth/whatisSG.html, accessed February 13, 2007.

The proposed project would be a 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) TOD Guidelines. 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 include moderately high-density housing and small, local-serving businesses co-located in a planned community that has been designed for convenient walk, bicycle, and transit access.[8] In addition, the project would be infill development that would provide new housing and space for new jobs, and would be walking distance from a number of local schools.

As a result, the proposed project would be consistent with regional air quality planning and not result in a significant cumulative impact to air quality when considered together with the impact of past, present, existing, pending and reasonably foreseeable future development.

3. Greenhouse Gas Emissions and Climate Change Setting

a. 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 greenhouse gases (GHGs) that keep the Earth's surface warm by trapping heat in the Earth's atmosphere,[9] in much the same way as glass traps heat in a greenhouse. While many studies show evidence of warming over the last century and predict future global warming, the precise causes of such warming and its potential effects are far less certain.[10] 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.

[8] Alameda County Congestion Management Agency (ACCMA), 2007. Transit Oriented Development Resource Guidebook.

[9] U.S. Environmental Protection Agency (US EPA), Global Warming – Climate: Uncertainties (web page), January 2000, http://yosemite.epa.gov/oar/globalwarming.nsf/content/ClimateUncertainties.html#likely, accessed July 24, 2007.

[10] "Global climate change" is a broad 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 in certain areas, even though the world, on average, is warmer.

The US EPA has recently concluded that scientists know *with virtual certainty that*:

- "Human activities are changing the composition of Earth's atmosphere. Increasing levels of greenhouse gases like CO2 in the atmosphere since pre-industrial times are well-documented and understood.
- The atmospheric buildup of CO2 and other greenhouse gases is largely the result of human activities such as the burning of fossil fuels.
- 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 greenhouse gases emitted by human activities remain in the atmosphere for periods ranging from decades to centuries. It is therefore virtually certain that atmospheric concentrations of greenhouse gases will continue to rise over the next few decades.
- Increasing greenhouse gas concentrations tend to warm the planet."[11]

At the same time, there is much uncertainty concerning the magnitude and rate of the warming. Specifically, the US EPA 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."[12]

b. Greenhouse Gases (GHGs). Carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), ozone (O3), 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. CO2, CH4, and N2O occur naturally as well as through human activity. Of these gases, CO2 and CH4 are emitted in the greatest quantities from human activities. Emissions of CO2 are largely by-products of fossil fuel combustion, whereas CH4 results from off-gassing

[11] US EPA, 2000, op. cit.

[12] Ibid.

associated with agricultural practices and landfills. Man-made GHGs – with much greater heat-absorption potential than CO2 – include fluorinated gases, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFC), and sulfur hexafluoride (SF6), which are byproducts of certain industrial processes.[13]

c. Potential Effects of Human Activity on GHG Emissions. As mentioned above, the primary GHG generated by human activity is CO2. Fossil fuel combustion, especially for the generation of electricity and powering of motor vehicles, has led to substantial increases in CO2 emissions (and thus substantial increases in atmospheric concentrations). In 1994, atmospheric CO2 concentrations were found to have increased by nearly 30 percent above pre-industrial (c.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),[14] and is expressed as a function of how much warming would be caused by the same mass of CO2. Thus, GHG emissions are typically measured in terms of pounds or tons of CO2 equivalents (CO2e).

(1) Global Emissions. Worldwide emissions of GHGs in 2004 were 30 billion tons of CO2e per year[15] (including both ongoing emissions from industrial and agricultural sources, but excluding emissions from land-use changes).

(2) U.S. Emissions. In 2004, the United States emitted about 8 billion tons of CO2e 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.[16]

(3) State of California Emissions. In 2004, California emitted approximately 550 million tons of CO2e, or about 6 percent of the U.S. emissions. This large number is due primarily to the sheer size of California compared to other states. By contrast, California has 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

[13] CalEPA, 2006b. *Final 2006 Climate Action Team Report to the Governor and Legislature.* Sacramento, CA. April 3.

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

[15] United Nations Framework Convention on Climate Change (UNFCCC), *Sum of Annex I and Non-Annex I Countries Without Counting Land-Use, Land-Use Change and Forestry (LULUCF). Predefined Queries: GHG total without LULUCF* (Annex I Parties). Bonn, Germany, http://unfccc.int/ghg_emissions_data/predefined_queries/items/3814.php, accessed May 2, 2007.

[16] US EPA, 2000, op. cit.

otherwise.[17] Another factor that has reduced California's fuel use and GHG emissions is its mild climate compared to that of many other states.

The California EPA Climate Action Team stated in its March 2006 report that the composition of gross climate change pollutant emissions in California in 2002 (expressed in terms of CO2 equivalence) were as follows:

- Carbon dioxide (CO2) accounted for 83.3 percent;
- Methane (CH4) accounted for 6.4 percent;
- Nitrous oxide (N2O) accounted for 6.8 percent; and
- Fluorinated gases (HFCs, PFC, and SF6) accounted for 3.5 percent.[18]

The California Energy Commission found that transportation is the source of approximately 41 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 20 percent. Agriculture and forestry is the source of approximately 8.3 percent, as is the source categorized as "other," which includes residential and commercial activities.[19]

(4) 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 single largest source of the Bay Area's GHG emissions, accounting for just over half of the Bay Area's 85 million tons of GHG emissions in 2002. Industrial and commercial sources were the second largest contributors of GHG emissions with about 25 percent of total emissions. Domestic sources (e.g., home water heaters, furnaces, etc.) account for about 11 percent of the Bay Area's GHG emissions, followed by power plants at 7 percent. Oil refining currently accounts for approximately 6 percent of the total Bay Area GHG emissions.[20]

(5) 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 emitted in its base year, 2005.[21] The community-wide levels reflect all the energy used and waste produced within the Oakland city limits. As shown in Table IV.D-10, Oakland emitted

[17] California Energy Commission (CEC) , Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004 - Final Staff Report, publication # CEC-600-2006-013-SF, Sacramento, CA, December 22, 2006; and January 23, 2007 update to that report.

[18] CalEPA, 2006b, op. cit.

[19] California Energy Commission (CEC), 2007, op. cit.

[20] BAAQMD, 2006. *Source Inventory of Bay Area Greenhouse Gas Emissions.* November.

[21] International Council for Local Environmental Initiatives (ICLEI), 2006. City of Oakland Baseline Greenhouse Gas Emissions Inventory Report, December.

approximately 2.4 million tons of CO2 equivalents (CO2e) in 2005 from all major sources, nearly half of which were from transportation. The report shows that the City's emissions increased by approximately 5 percent to 6 percent in each year since 2003.

Table IV.D-10 Oakland Community-wide GHG Emissions Summary – 2005 (tons/year)

Potential Source	Tons of Carbon Dioxide Equivalent (CO2e)	Percent of Total
Transportation	1,138,767	47%
Commercial/Industrial	709,199	29%
Residential	580,710	24%
Total	**2,428,676**	**100**

Source: ICLEI Oakland Baseline Greenhouse Gas Emissions Inventory, 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 years 2010 and 2020. From year 2005, emissions are forecasted to increase by 12 percent by 2010 (to 2.7 million tons of CO2e), and 19.5 percent (to 2.9 million tons CO2e) by 2020, assuming continued GHG emissions at or above current rates into the future.

(6) 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 GHG emissions, discussed below), and transportation.

However, it is important to acknowledge that new development does not necessarily create entirely new GHG emissions, since most of the persons who will visit or occupy new development will come from other locations where they were already causing such GHG emissions. Further, as discussed above, it has not been demonstrated that new GHG emissions caused by a local development project can affect global climate change, or that a project's net increase in GHG emissions, if any, when coupled with other activities in the region, would be cumulatively considerable.

d. Potential Effects of Human Activity on Global Climate 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 is taking place, including substantial ice loss in the Arctic.[22]

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"(2001).[23]

Acknowledging uncertainties regarding the rate at which anthropogenic greenhouse gas emissions would continue to increase (based upon various factors under human control, such as future population growth and the locations of that growth; the amount, type, and locations of economic development; the amount, type, and locations of technological advancement; adoption of alternative energy sources; legislative and public initiatives to curb emissions; and public awareness and acceptance of methods for reducing emissions), and the impact of such emissions on climate change, the IPCC devised a set of six "emission scenarios" which utilize various assumptions about the rates of economic development, population growth, and technological advancement over the course of the next century.[24] These emission scenarios are paired with various climate sensitivity models to attempt to account for the range of uncertainties which affect climate change projections. The wide range of temperature, precipitation, and similar projections yielded by these scenarios and models reveal the magnitude of uncertainty presently limiting climate scientists' ability to project long-range climate change (as previously discussed).

The projected effects of global warming on weather and climate are likely to vary regionally, but are expected to include the following direct effects, according to the IPCC.[25]

- Snow cover is projected to contract, with permafrost areas sustaining thawing.

[22] International Panel on Climate Change (IPCC) *Special Report on Emissions Scenarios, 2000,* www.grida.no/climate/ipcc/emission/002.htm, accessed July 24, 2007.

[23] 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.

[24] IPCC, 2000, op. cit.

[25] Ibid.

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

e. Potential Effects of Human Activity on State of California. 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.[26] Several recent studies have attempted to explore the possible negative consequences that climate change, left unchecked, could have in California. These reports acknowledge that climate scientists' understanding of the complex global climate system, and the interplay of the various internal and external factors that affect climate change, remains too limited to yield scientifically valid conclusions on such a localized scale. Substantial work has been done at the international and national level to evaluate climatic impacts, but far less information is available on regional and local impacts. In addition, projecting regional impacts of climate change and variability relies on large-scale scenarios of changing climate parameters, using information that is typically at too general a scale to make accurate regional assessments.[27]

Below is a summary of some of the potential effects reported in an array of studies that could be experienced in California as a result of global warming and climate change:

- <u>Air Quality</u> – 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,

[26] California Air Resources Board (CARB), 2006c. *Public Workshop to Discuss Establishing the 1990 Emissions Level and the California 2020 Limit and Developing Regulations to Require Reporting of Greenhouse Gas Emissions*, Sacramento, CA. December 1.

[27] Kiparsky, M. and P.H. Gleick, 2003. *Climate Change and California Water Resources: A Survey and Summary of the Literature.* Oakland, CA: Pacific Institute for Studies in Development. July.

and even less well understood.[28] 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.[29]

- 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.[30]

  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."[31] DWR adds that "[i]t is unlikely that this level of uncertainty will diminish significantly in the foreseeable future."[32] 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

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[28] US EPA, 2007, op. cit.

[29] California Climate Change Center (CCCC), 2006. *Our Changing Climate: Assessing the Risks to California,* CEC-500-2006-077, Sacramento, CA. July.

[30] Brekke, L.D., et al, 2004. "Climate Change Impacts Uncertainty for Water Resources in the San Joaquin River Basin, California." *Journal of the American Water Resources Association.* 40(2): 149–164. Malden, MA, Blackwell Synergy for AWRA.

[31] California Department of Water Resources (DWR), 2006. *Progress on Incorporating Climate Change into Management of California Water Resources*, Sacramento, CA. July.

[32] Ibid.

changes in inflows.[33] Water purveyors, such as the East Bay Municipal Utilities District (EBMUD), are required by state law to prepare Urban Water Management Plans (UWMPs) (discussed below, under *Regulatory Context for Greenhouse Gas Emissions and Climate Change*) that consider climatic variations and corresponding impacts on long-term water supplies.[34] DWR has published a 2005 SWP Delivery Reliability Report, which presents information from computer simulations of the SWP operations based on historical data over a 73-year period (1922–1994). The DWR notes that the results of those model studies "represent the best available assessment of the delivery capability of the SWP." In addition, the DWR is continuing to update its studies and analysis of water supplies. EBMUD would incorporate this information from DWR in its update of its current UWMP 2005 (required every five years per the California Water Code), and information from the UWMP can be incorporated into Water Supply Assessments (WSAs) and Water Verifications prepared for certain development projects in accordance with Cal. Water Code Section 10910, et. seq. and Cal. Government Code Section 66473.7, et. seq. (See Section IV.H, *Utilities and Service Systems*, in this EIR for discussion of the WSA and verifications for the proposed project.)

- Hydrology – As discussed above, climate change 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 also jeopardize California's water supply. In particular, saltwater intrusion would threaten the quality and reliability of the state's major fresh water supply that is pumped from the southern portion of the Sacramento/San Joaquin River Delta. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

- 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 CO2 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 that certain crops, such as wine grapes, bloom or ripen, and thus affect their quality.[35]

[33] Kiparsky 2003, op. cit; DWR, 2005, op. cit.; Cayan, D., et al, 2006. Scenarios of Climate Change in California: An Overview (White Paper, CEC-500-2005-203-SF), Sacramento, CA. February.

[34] California Water Code, Section 10631(c).

[35] California Climate Change Center (CCCC), 2006, op. cit.

- 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.[36] 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.

f. Regulatory Context for GHG Emissions and Climate Change.

(1) 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 5 percent from 1990 levels during the first commitment period of 2008–2012. It should be noted that although the United States is a signatory to the Kyoto Protocol, Congress has not ratified the Protocol and the United States is not bound by the Protocol's commitments.

g. 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.[37]

(1) U.S. Environmental Protection Agency (US EPA). To date, the US EPA has not regulated GHGs under the Clean Air Act (discussed above) based on its assertion in *Massachusetts et. al. v. EPA et. al*[38] 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

[36] Parmesan, C. and H. Galbraith, *Observed Impacts of Global Climate Change in the U.S.*, Arlington, VA: Pew Center on Global Climate Change, November 2004.

[37] Climate Change Technology Program (CCTP), About the U.S. Climate Change Technology Program (web page), Washington, D.C., last updated April 2006, http://www.climatetechnology.gov/about/index.htm, accessed July 24, 2007.

[38] U.S. Supreme Court, *Massachusetts et. al. v. EPA et. al* (No. 05-1120, 415F 3d 50), April 2, 2007.

surface air temperatures has not been unequivocally established," However, in the same case, (*Massachusetts v. EPA*) the U.S. Supreme Court held that the US EPA can, and should, consider regulating motor-vehicle GHG emissions.

(2) 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 the 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 "CO2-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.[39] These include prohibition of 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 and establishes a multi-year regulatory process under the jurisdiction of the CARB to establish regulations to achieve these goals. CARB must adopt such regulations by January 1, 2008. 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 also is 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

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[39] California Environmental Protection Agency (CalEPA), 2006a. Climate Action Team, *Executive Summary. Climate Action Team Report to Governor Schwarzenegger and the California Legislature.* Sacramento, CA, March.

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.*[40] 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.”[41] 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).

As of publication of this Draft EIR, there has been no guidance from CARB or other agencies on the relation between AB 32 and CEQA, or on whether or how GHG emissions should be evaluated in EIRs. AB 32 also requires CARB to monitor compliance with and enforcement of any rule, regulation, order, emission limitation, emissions reduction measure, or market-based compliance mechanism that it adopts.

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.[42]

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

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[40] CalEPA, Air Resources Board (CARB), *Proposed Early Actions to Mitigate Climate Change in California.* Sacramento, CA, April 20, 2007.

[41] Ibid.

[42] Collard, Gary, California Energy Commission, email correspondence to Robert Vranka, Ph.D, ESA, July 12, 2007.

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. OPR must prepare these guidelines and transmit them to the Resources Agency by July 1, 2009. The Resources Agency must then certify and adopt the guidelines by January 1, 2010. OPR and the Resources Agency are required to periodically review the guidelines to incorporate new information or criteria adopted by ARB pursuant to the Global Warming Solutions Act, scheduled for 2012.

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 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 emission 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 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 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 change which may affect future water supplies in California, as conditions may become drier or wetter, affecting reservoir inflows and storage and increased river flows.[43]

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

(1) City of Oakland General Plan.

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:

[43] Brekke, 2004, op. cit.

- 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 (OSCAR). The OSCAR 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 CO2; 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.

- 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)*
- *See Policy CO-12.1, above, under OSCAR policies that address general air quality.*

- Expand existing transportation systems management and transportation demand management strategies which reduce congestion, vehicle idling, and travel in single passenger autos. *(Policy CO-12.3)*
- *See Policy CO-12.4, above, under OSCAR policies that address general air quality.*
- Require new industry to use best available control technology to remove pollutants, including filtering, washing, or electrostatic treatment of emissions. *(Policy CO-12.5)*
- Support public information campaigns, energy audits, the use of energy-saving appliances and vehicles, and other efforts which help Oakland residents, businesses, and City operations become more energy 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 (HPE). A key 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 CO2 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).[44]

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.[45] Also, wildfire results in the loss of vegetation; carbon is stored in vegetation, and when the vegetation burns, the carbon returns to the atmosphere.[46] The occurrence of wildfire also emits particulate matters into the atmosphere. Safety Element policies regarding storm-induced flooding hazards related to the potential to accommodate potential increase in storms and flooding as a result of climate change.

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[44] US EPA, 2006a. General Information on the Link Between Solid Waste and Greenhouse Gas Emissions (web page), October, http://www.epa.gov/climatechange/wycd/waste/generalinfo.html, accessed August 10, 2007.

[45] US EPA, Climate Change – Health and Environmental Effects: Health (web page), October 2006b, www.epa.gov/climatechange/effects/health.html, accessed July 24, 2007.

[46] National Aeronautics and Space Administration (NASA), *El Nino-Related Fires Increase Greenhouse Gas Emissions, January 5, 2005,* http://www.nasa.gov/centers/goddard/news/topstory/2004/0102firenino.html, accessed August 10, 2007.

- 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 the storm-induced flooding hazard. *(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:[47]

- <u>Chicago Climate Exchange</u> – 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 1 percent per year from 2003-2006 below their baseline average. If the 1 percent reduction was 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 1 percent reduction target for period 2003-2004, but in 2004-2005 and 2005-2006 the City's emissions increased and the target was not met.
- <u>Community Choice Aggregation</u> – 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 its 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.
- <u>Energy Efficiency Participation</u> – 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 which 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

[47] City of Oakland, Oakland Sustainable Community Development Initiative, (web page), <u>http://www.sustainableoakland.com/Page774.aspx</u>, last updated March 2007, accessed June 25, 2007.

light exchange, promoting energy efficiency and public outreach; and Savings by Design Lead Incentive Pilot, in which PG&E and the City 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 set a priority of promoting renewable energy with a particular emphasis on solar. 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. Additionally, the City implemented a Socially Responsible Business Task Force, which 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 has a 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 StopWaste 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.

• <u>Polystyrene Foam Ban Ordinance</u> - 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.

• <u>Zero Waste Resolution</u> - 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.

• <u>Stormwater Management</u> - 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.

• <u>Watershed Improvement</u> - 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 the 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 reduce truck miles necessary to distribute food locally, which contributes to GHG emissions.
- Community Gardens and Farmer's Markets - Community Gardening locations include Arroyo Viejo, Bella Vista, Bushrod, Golden Gate, Lakeside Horticultural Center, Marston Campbell, Temescal, and Verdese Carter. Weekly Farmer's Markets locations include the Jack London Square, Old Oakland, Grand Lake, Mandela, and Temescal districts. Both efforts promote and facilitate the principal of growing and purchasing locally, which effects reductions in truck and vehicle use and GHG emissions.

4. Greenhouse Gas Emissions and Climate Change Impacts

a. Significance Thresholds for GHG Emissions and Climate Change. As of preparation of this EIR, there are no statutes, regulations or guidelines requiring analysis of climate change within a CEQA document. Under AB 32, the CARB, the sole agency in charge of regulating sources of emissions of GHG in California, has been tasked with adopting regulations for reduction of GHG emissions. As of the date of this analysis, the BAAQMD has not identified a significance threshold for GHG emissions or a methodology for analyzing air quality impacts related to GHG emissions. In particular, there is currently no emission rate criterion for the purposes of identifying a significant contribution to global climate change in CEQA documents.

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 environmental impact report (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."

The City of Oakland has determined, based upon the discussion above and the factors discussed previously and summarized below, that the project's impact on global climate change is speculative and cannot be evaluated at this time for the following reasons:

- Uncertainties exist regarding the effect of human activities on climate change and potential human activities that may reverse global warming trends.
- Lack of guidance address analysis of climate change issues in CEQA documents.
- Lack of methodology for evaluating GHGs, specifically determining the incremental increase in GHG emissions for an individual project, the impacts of a particular development project on global climate change, and the significance of any such impacts under CEQA.
- Lack of methodology for determining whether GHG emissions from an individual project are significant;[48]
- Lack of scientific basis to accurately project future climate trends, much less the likely adverse environmental impacts resulting from those trends in any specific location. [49]

(1) Approach and Conclusion to CEQA Analysis of GHG Emissions and Climate Change Impacts in this EIR. For all of the reasons summarized above (and discussed in detail under *Regulatory Context for GHG Emissions and Climate Change* in this section), and pursuant to Section 15145 of the CEQA Guidelines, until such time as: (1) sufficient scientific basis exists to ascertain the incremental impact of an individual project on climate change, and to accurately project future climate trends associated with that increment of change, and (2) guidance is provided by regulatory agencies on the control of GHG emissions[50] and thresholds of significance, the significance of an individual project's contribution to global GHG emissions is too speculative to be determined. Therefore, further analysis and application of current emissions scenarios, climate models, and climate change projections to the proposed project is also speculative. However, this EIR does

[48] While the direct output of greenhouse gases from a project can be estimated, the emission of GHGs associated with implementation of any one development project would not result in any discernable direct impact globally or locally on climate, water availability, plant or wildlife species, populations, habitats, or ecosystems. The indirect effects of project-specific greenhouse gases emissions from a development such as the proposed high-density residential project, are negligible at best, and available science considers them not measurable.

[49] Australian Government, Bureau of Meteorology, 2007. *The Greenhouse Effect and Climate Change*. Melbourne, Victoria, Australia.

[50] Refer to the discussion under "Regulatory Setting, California" regarding the Proposed Early Actions to Mitigate Climate Change in California published by CARB in April 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.

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 that, given the speculative nature of the potential effects of climate change and lack of an adopted significance threshold for GHG emissions or a methodology for analyzing air quality impacts related to GHG emissions, the effects of a proposed project may be evaluated based not upon the quantity of emissions, but rather on whether practicable available control measures are implemented, similar to construction-related dust emissions within the San Francisco Air Basin. 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 result in a significant contribution to the cumulative impact of global climate change. Alternatively, a project could reduce a potential cumulative contribution to GHG emissions by contributing to available mitigation programs, such as reforestation, tree planting, or carbon trading.

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

b. Potential Project Activities Contributing to GHG Emissions. Construction and operation of the proposed residential and commercial 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.[51] As of yet, there is no study that quantitatively assesses all of the GHG emissions associated with each phase of the construction and use of an individual residential development.

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

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

[51] United Nations Environment Programme (UNEP), 2007. *Buildings and Climate Change: Status, Challenges and Opportunities*, Paris, France.

- 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 – Natural 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 the natural gas (as before a flame on a stove is sparked), and from the small amount of methane that is uncombusted in a natural gas flame. Electricity use can result in GHG production if the electricity is generated by combusting fossil fuel. 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.[52]
- 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. Also, as discussed previously, the project is designed to limit auto trips.

While the proposed project and all developments of similar land uses 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.

c. Estimated GHG Emission from the Proposed Project. Although it is possible to generally estimate a project's contribution of CO2 or other GHGs into the atmosphere, it is a matter of speculation whether any particular project increases existing levels of GHGs globally or in the State of California. Moreover, even if it is assumed that a project does create an incremental increase in those emissions, it is typically not possible to determine whether or how an individual project's relatively small incremental contribution might translate into physical effects on the environment given the considerations discussed previously in this section.

The amount of increased GHG emissions that may be generated by the proposed project would not, by itself, influence global climate change. It cannot currently be determined if the proposed project would provide an incremental contribution to the cumulative increase

[52] California Energy Commission (CEC), 2004. *Water Energy Use in California* (online information sheet) Sacramento, CA, August 24, http://energy.ca.gov/pier/iaw/industry/water.html, accessed July 24, 2007.

of GHG emissions. As previously discussed, there are no published thresholds of significance, and no regulatory guidance available that evaluate climate change and GHG emissions in conjunction with individual development projects. In addition, the scientific and technical literature indicates that there is not yet a methodology for reflecting the impact of individual land use decisions in climate change models. Until such time that sufficient scientific basis exists to accurately project future climate trends and guidance is provided by regulatory agencies on the control of GHG emissions and thresholds of significance, the significance of the proposed project's contribution to global GHG emissions cannot be judged.

In light of the considerations outlined above, Table IV.D-11 presents a gross estimate of the proposed project's CO2e emissions resulting from the proposed project associated increases in motor vehicle trips resulting from the proposed project, as well as from natural gas combustion.

Table IV.D-11 Estimated CO2e Emissions from the Proposed Project (Tons/Year)

	CO2e
Operation (Vehicle) Emissions	5,467
Space and Water Heating	940
Total Project CO2e Emissions	**6,407**
Total CO2e Emissions for Oakland	**2,248,667**
Project Percentage	**0.3 Percent**

Source: LSA Associates, Inc., 2007.

CO2 emissions represent more than 90 percent of the project's contribution of GHG emissions. There are no federal, State, or local emissions thresholds established for GHGs such as CO2. As a comparison, the entire State generated approximately 2.2 billion (2,197,992,329) lbs/day of CO2 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 homes, the type and extent of energy efficiency measures that might be incorporated into each the design of project buildings, and the type and size of appliances installed in project buildings. This level of detail is not yet known for the project. In addition, the estimated CO2 emissions from vehicle trips associated with the project is likely much greater than what would actually occur. Although the future CO2 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 with 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 and businesses) 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 can not be determined until buildout of the project whether residents of the MacArthur Transit Village will, 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 use overall less energy by virtue of the project's characteristics. If these types of changes occur, overall vehicle miles traveled could be reduced and it could be argued that the project would result in a potential net reduction in GHG emissions, locally and globally.

GHG emissions associated with the proposed project were calculated using the URBEMIS2007 Version 9.2 model of the California Air Resources Board and trip generation data from the project traffic analysis. The URBEMIS2007 model also estimates CO2 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 or commercial square footage).

d. Project Design Features. While no significant impacts have been identified, and no mitigation is required, project characteristics and design features which help implement reduction strategies identified in AB-32 and the Governor's Executive Order S-3-05 have been included in the project and would reduce the amount of GHG emissions generated during construction and operation are discussed below.

- City of Oakland – According 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 Bay Area Rapid Transit (BART), AC Transit, Amtrack, and the Alameda Ferry. 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 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.
- Construction Waste – The proposed project will 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 have diesel fueled engines, would be reduced since demolition debris that would otherwise be hauled off-site would be reused on-site. In addition, reuse of concrete, asphalt, and other debris will reduce the amount of material introduced to area landfills.

- Transit-Oriented Development – The project would be a Transit Oriented Development, developing high-density housing in the central area of Oakland near transit stations (including Bay Area Rapid Transit (BART) stations, AC Transit centers, and other transportation nodes. In this zone, the Planning Code requires less parking than any other zone in the City in the number thereby encouraging the use of transit and pedestrian activity. 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. Because transit service is generally less available in most portions of the outlying areas than in the central area of Oakland, 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.
- Urban Infill Near Multiple Transit Modes – The project would develop high-density housing within four blocks of at least two modes of transit and within an area developed with pedestrian facilities. Therefore, the project would facilitate walking and non-vehicular travel to a greater extent than would be the case for similar development in outlying areas without extensive transit availability. In addition, the 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.
- Inner Bay Location Near Transit – The project's location in Oakland would reduce transportation-related GHG emissions compared to emissions from development with the same amount of population and employment growth in the outer Bay Area. Because transit service is generally less available in most areas of the outlying areas than in Oakland, 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. Development on the project site would include a greater number of potential residents and visitors that could potentially utilize alternative modes of travel.
- New Urbanist Community Design Principles – The project's integration of varied uses and services on-site and nearby with housing would reduce automobile use within the community with access to public transit.
- Construction Operations and Building and Site Design – The project sponsor 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. Sources include *GreenPoint* Rated (a program of Build It Green, sponsored by a number of Bay Area public agencies and jurisdictions); 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; and California Green Builder program). Examples of approaches that the project would incorporate as feasible 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.

In addition, as discussed in Section IV.F, *Hydrology and Water Quality,* the project may decrease the amount of impervious area and increase vegetation on the site.

e. Conclusion. Although no significant impacts have been identified, and no mitigation is required, the project's GHG emissions generated during construction and operation would be minimized by virtue of the building characteristics and design features that the project proposes. 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 (see COA AIR-1 and AIR-2 on pages 235 and 236) 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 Executive Order S-3-05, and other strategies to help reduce GHGs to the level proposed by the governor and targeted by the City of Oakland.

E. NOISE AND VIBRATION

This section describes existing noise and vibration conditions, sets forth criteria for determining the significance of noise and vibration impacts, and estimates the likely noise and vibration impacts that would result from development of the proposed project. Mitigation measures are recommended, if required, to address significant environmental impacts.

1. Setting

This section describes the characteristics of sound and vibration, the regulations related to noise, and the existing noise sources in and adjacent to the project area.

a. Characteristics of Sound. Noise is generally defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

To the human ear, sound has two significant characteristics: *pitch* and *loudness*. Pitch is the number of complete vibrations or cycles per second of a wave that results in the range of tone from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment, and it is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effects on adjacent sensitive land uses.

(1) Measurement of Sound. Sound intensity is measured through the A-weighted scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies. Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale, representing points on a sharply rising curve. Table IV.E-1 contains a list of typical acoustical terms and definitions. Table IV.E-2 shows representative outdoor and indoor noise levels in units of dBA.

A decibel (dB) is a unit of measurement which indicates the relative intensity of a sound. The 0 point on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Changes of 3 dB or less are only perceptible in laboratory environments. Audible increases in noise levels generally refer to a change of 3 dB or more, as this level has been found to be barely perceptible to the human ear in outdoor environments. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB

Table IV.E-1 Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit of level that denotes the ratio between two quantities proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted, unless reported otherwise.
L01, L10, L50, L90	The fast A-weighted noise levels equaled or exceeded by a fluctuating sound level for 1 percent, 10 percent, 50 percent, and 90 percent of a stated time period.
Equivalent Continuous Noise Level, Leq	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of five decibels to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, Ldn	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Lmax, Lmin	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Ambient Noise Level	The all encompassing noise associated with a given environment at a specified time, usually a composite of sound from many sources at many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Handbook of Acoustical Measurements and Noise Control, 1991.

represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense, 30 dB is 1,000 times more intense. Each 10-dB increase in sound level is perceived as approximately a doubling of loudness.

As noise spreads from a source, it loses energy so that the farther away the noise receiver is from the noise source, the lower the perceived noise level would be. Geometric spreading causes the sound level to attenuate or be reduced, resulting in a 6 dB reduction in the noise level for each doubling of distance from a single point source of noise to the noise sensitive receptor of concern.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. Equivalent continuous sound level (Leq) is the total sound energy of time varying noise over a sample period. However, the predominant rating scales for communities in the State of California are the Ldn, the community noise equivalent level (CNEL), and the day-night average level (Ldn) based on A-weighted decibels (dBA). CNEL is the time varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly Leq for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). Ldn is similar to the CNEL scale, but without the adjustment for events occurring during the evening relaxation hours. CNEL and Ldn are within one dBA of each other and are normally exchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours. Typical A-weighted sound levels from various sources are described in Table IV.E-2.

Noise standards in terms of percentile exceedance levels, Ldn, are often used together with the Lmax for noise enforcement purposes. When specified, the percentile exceedance levels are not to be exceeded by an offending sound over a stated time period. For example, the L10 noise level represents the level exceeded ten percent of the time during a stated period. The L50 noise level represents the median noise level. Half the time the noise level exceeds this level, and half the time it is less than this level. The L90 noise level represents the noise level exceeded 90 percent of the time and is considered the lowest noise level experienced during a monitoring period. It is normally referred to as the background noise level. For a relatively steady noise, the measured Leq and L50 are approximately the same.

Noise impacts can be described in three categories. The first is audible impacts that refer to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3.0 dBA or greater, since, as described earlier, this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1.0 and 3.0 dB. This range of noise levels has been found to be noticeable only in laboratory environments. The last category is changes in noise level of less than 1.0 dB that are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant.

(2) Physiological Effects of Noise. Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects our entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, and thereby affecting blood pressure, functions of the ear, and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling.

Table IV.E-2 Typical A-Weighted Sound Levels

Noise Source	A-Weighted Sound Level in Decibels	Noise Environments
Near Jet Engine	140	Deafening
Civil Defense Siren	130	Threshold of pain
Hard Rock Band	120	Threshold of feeling
Accelerating Motorcycle at a Few Feet Away	110	Very loud
Pile Driver; Noisy Urban Street/Heavy City Traffic	100	Very loud
Ambulance Siren; Food Blender	95	Very loud
Garbage Disposal	90	Very loud
Freight Cars; Living Room Music	85	Loud
Pneumatic Drill; Vacuum Cleaner	80	Loud
Busy Restaurant	75	Moderately loud
Near Freeway Auto Traffic	70	Moderately loud
Average Office	60	Moderate
Suburban Street	55	Moderate
Light Traffic; Soft Radio Music in Apartment	50	Quiet
Large Transformer	45	Quiet
Average Residence Without Stereo Playing	40	Faint
Soft Whisper	30	Faint
Rustling Leaves	20	Very faint
Human Breathing	10	Very faint

Source: Compiled by LSA Associates, Inc., 2007.

b. Characteristics of Ground-Borne Vibration. Vibrating objects in contact with the ground radiate vibration waves through various soil and rock strata to the foundations of nearby buildings. As the vibration propagates from the foundation throughout the remainder of the building, the vibration of floors and walls may cause perceptible vibration from the rattling of windows or a rumbling noise. The rumbling sound caused by the vibration of room surfaces is called ground-borne noise. When assessing annoyance from ground-borne noise, vibration is typically expressed as root mean square (rms) velocity in units of decibels of 1 micro-inch per second. To distinguish vibration levels from noise levels, the unit is written as "VdB." Human perception to vibration starts at levels as low as 67 VdB and sometimes lower. Annoyance due to vibration in residential settings starts at approximately 70 VdB. Ground-borne vibration is almost never annoying to people who are outdoors. Although the motion of the ground may be perceived, without the effects associated with the shaking of the building, the motion does not provoke the same adverse human reaction.

In extreme cases, excessive groundborne vibration has the potential to cause structural damage to buildings. When assessing the potential for building damage, vibration levels are expressed as peak particle velocity (PPV) in units of inches per second. Common sources of ground-borne vibration include trains and construction activities such as blasting, pile driving and operating heavy earthmoving equipment.

c. Noise Regulatory Framework. The following section summarizes the regulatory framework related to noise, including federal, State and City of Oakland plans, policies and standards.

(1) U.S. Environmental Protection Agency (EPA). In 1972 Congress enacted the Noise Control Act. This act authorized the EPA to publish descriptive data on the effects of noise and establish levels of sound "requisite to protect the public welfare with an adequate margin of safety." These levels are separated into health (hearing loss levels) and welfare (annoyance levels), as shown in Table IV.E-3. The EPA cautions that these identified levels are not standards because they do not take into account the cost or feasibility of the levels.

For protection against hearing loss, 96 percent of the population would be protected if sound levels are less than or equal to an Leq(24) of 70 dB. The "(24)" signifies an Leq duration of 24 hours. The EPA activity and interference guidelines are designed to ensure reliable speech communication at about 5 feet in the outdoor environment. For outdoor and indoor environments, interference with activity and annoyance should not occur if levels are below 55 dBA and 45 dBA, respectively.

The noise effects associated with an outdoor Ldn of 55 dB are summarized in Table IV.E-4. At 55 dB Ldn, 95 percent sentence clarity (intelligibility) may be expected at 3.5 meters, and no community reaction. However, 1 percent of the population may complain about noise at this level and 17 percent may indicate annoyance.

Table IV.E-3 Summary of EPA Noise Levels

Type of Effects	Magnitude of Effect
Speech – Indoors	100 percent sentence intelligibility (average) with a 5 dB margin of safety.
Speech – Outdoors	100 percent sentence intelligibility (average) at 0.35 meters. 99 percent sentence intelligibility (average) at 1.0 meters. 95 percent sentence intelligibility (average) at 3.5 meters.
Average Community Reaction	None evident; 7 dB below level of significant complaints and threats of legal action and at least 16 dB below "vigorous action."
Complaints	1 percent dependent on attitude and other non-level related factors.
Annoyance	17 percent dependent on attitude and other non-level related factors.
Attitude Towards Area	Noise essentially the least important of various factors.

"Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety." March.
Source: U.S. Environmental Protection Agency, 1974.

(2) Federal Transit Administration (FTA). For residential buildings, the Federal Transit Administration (FTA) has established a ground-borne vibration significant impact threshold of 72 VdB for frequent events[1] and 80 VdB for infrequent events.[2] Most rapid transit operations fall into the frequent event category. Table IV.E-5 indicates the FTA's construction vibration damage criteria.

(3) State of California. The State of California has established regulations that help prevent adverse impacts to occupants of buildings located near noise sources. Referred to as the "State Noise Insulation Standard," it requires buildings to meet performance standards through design and/or building materials that would offset any noise source in the vicinity of the receptor. 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 found in the 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 noise sources, the noise insulation standards set an interior standard of 45 dBA CNEL in any

Table IV.E-4 Summary of Human Effects in Areas Exposed to 55 dBA Ldn

Effect	Level	Area
Hearing loss	Leq(24) ≤ 70 dB	All areas.
Outdoor activity interference and annoyance	Ldn ≤ 55 dB	Outdoors in residential areas and farms and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
	Leq(24) ≤ 55 dB	Outdoor areas where people spend limited amounts of time, such as school yards, playgrounds, etc.
Indoor activity interference and annoyance	Leq ≤ 45 dB	Indoor residential areas.
	Leq(24) ≤ 45 dB	Other indoor areas with human activities such as schools, etc.

Source: U.S. Environmental Protection Agency, 1974. "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety." March.

Table IV.E-5 Construction Vibration Damage Criteria

Building Category	PPV (Inches/ Second)	Approximate VdB
I. Reinforced – Concrete, Steel or Timber (no plaster)	0.5	102
II. Engineered Concrete and Masonry (no plaster)	0.3	98
III. Non Engineer Timber and Masonry Buildings	0.2	94
IV. Buildings Extremely Susceptible to Vibration Damage	0.12	90

Source: Federal Transit Administration.

[1] The FTA defines "Frequent Events" as more than 70 vibration events per day and "Infrequent Events" as fewer than 70 vibration events per day.

[2] Federal Transit Administration, U.S. Department of Transportation, 2006. *Transit Noise and Vibration Impact Assessment.* May.

habitable room with all doors and windows closed. In addition, the standards require preparation of an acoustical analysis demonstrating the manner in which dwelling units have been designed to meet this interior standard, where such units are proposed in an area with exterior noise levels greater than 60 dBA CNEL.

The State has also established land use compatibility guidelines for determining acceptable noise levels for specified land uses. However, the City has adopted and modified the State's land use compatibility guidelines, as discussed below.

(4) City of Oakland. Locally, the City of Oakland addresses noise in the City's General Plan Noise Element, the Municipal Code Noise Ordinances, and in the Standard Conditions of Approval.

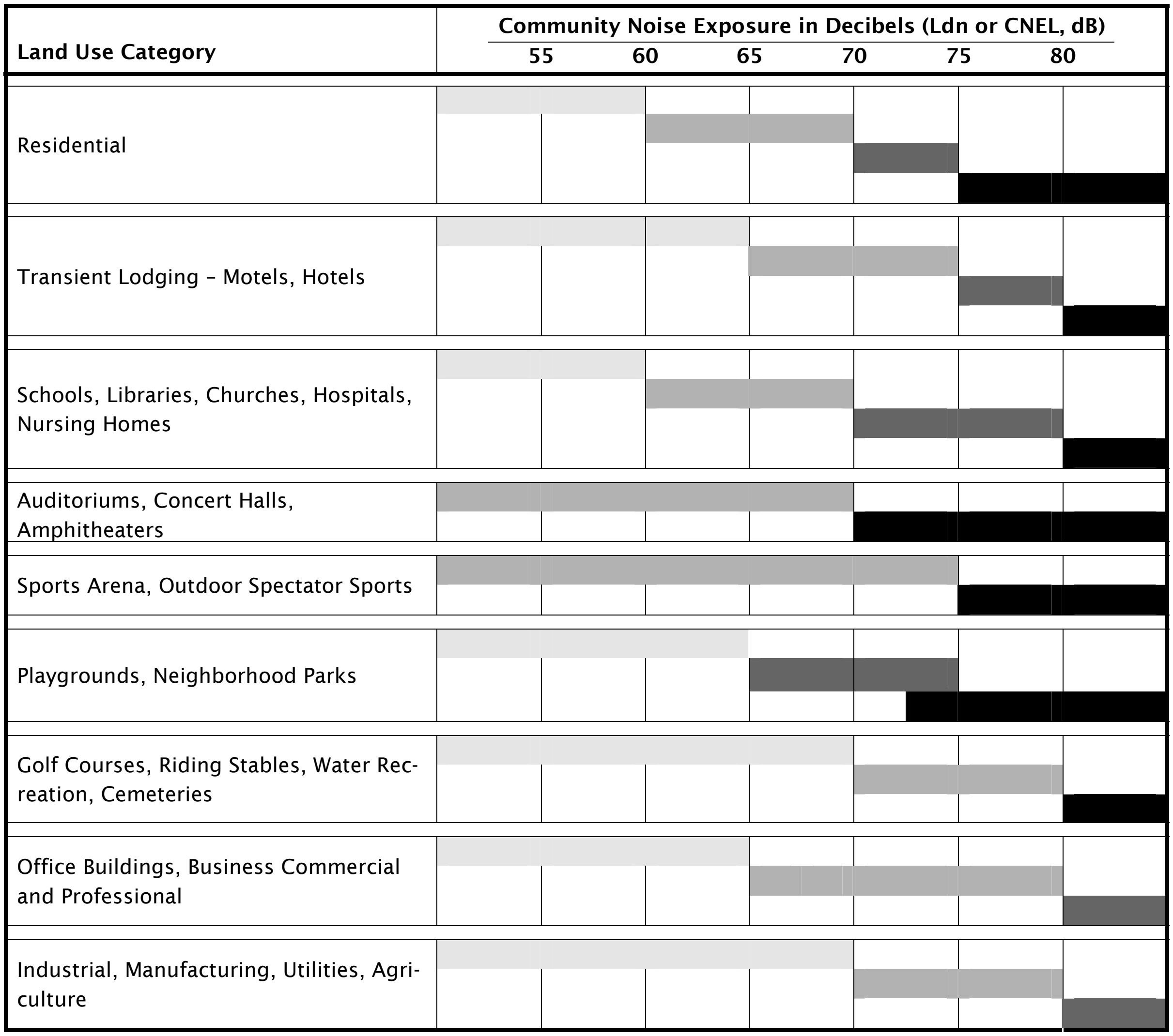
City of Oakland's General Plan Noise Element. The City of Oakland adopted a revised Noise Element in June of 2005.

The City has also established acceptable exterior noise thresholds for new residential and new commercial land use development of 60 dBA Ldn and 65 dBA Ldn respectively. As shown in Table IV.E-6, for proposed new residential uses, noise levels exceeding 60 dBA Ldn are conditionally acceptable provided a noise analysis identifies necessary noise reduction measures to achieve the interior noise level standard of 45 dBA Ldn.

The following are the noise policies and action steps of the Noise Element and other elements of the General Plan that are applicable to the proposed project.

- 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.
  - Action 1.1: Use the noise-land use compatibility matrix (Figure 6 *of the Noise Element [Table IV.E-7 following]*) in conjunction with the noise contour maps (especially for roadway traffic) to evaluate the acceptability of residential and other proposed land uses and also the need for any mitigation or abatement measures to achieve the desired degree of acceptability.
  - Action 1.2: Continue using the City's zoning regulations and permit processes to limit the hours of operation of noise-producing activities which create conflicts with residential uses and to attach noise-abatement requirements to such activities.
- 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.)
  - Action 3.1: Continue to use the building-permit application process to enforce the California Noise Insulation Standards regulating the maximum allowable interior noise level in new multi-unit buildings.

Table IV.E-6 Noise Land Use Compatibility Matrix



NORMALLY ACCEPTABLE
Development may occur without an analysis of potential noise impacts *to the proposed development* (though it might still be necessary to analyze noise impacts that the project might have *on its surroundings*).

CONDITIONALLY ACCEPTABLE
Development should be undertaken only after an analysis of noise-reduction requirements is conducted, and if necessary noise-mitigating features are included in the design. Conventional construction will usually suffice as long as it incorporates air conditioning or forced-air-supply systems, though it will likely require that project occupants maintain their windows closed.

NORMALLY UNACCEPTABLE
Development should generally de discouraged; it may be undertaken only if a detailed analysis of the noise-reduction requirements is conducted, and if highly effective noise insulation, mitigation or abatement features are included in the design.

CLEARLY UNACCEPTABLE
Development should not be undertaken.

Source: Oakland, City of, 2005. *City of Oakland General Plan, Noise Element, Figure 6.* June.

- Action 3.2: Review the City's noise performance standards and revise them as appropriate to be consistent with City Council policy.
- Action 3.3: Demand that Caltrans implement sound barriers, building retrofit programs and other measures to mitigate to the maximum extent feasible noise impacts on residential and other sensitive land uses from any new, widened or upgraded roadways; any new sound barrier must conform with City policies and standards regarding visual and aesthetic resources and quality.

- Policy I/C4.2: Minimizing nuisances. The potential for new or existing industrial or commercial uses, including seaport and airport activities, to create nuisance impacts on surrounding residential land uses should be minimized through appropriate siting and efficient implementation and enforcement of environmental and development controls.
- Policy N3.9: Orienting residential development. Residential developments should be encouraged to face the street and to orient their units to desirable sunlight and views, while avoiding unreasonably blocking sunlight and views for neighboring buildings, respecting the privacy needs of residents of the development and surrounding properties, providing for sufficient conveniently located on-site open space, and avoiding undue noise exposure.

City of Oakland Municipal Code Noise Ordinances. The noise ordinances of the City's Municipal Code[3] also regulate the maximum allowable daytime average receiving noise level for construction activity. These noise levels are shown in Table IV.E-7.

Table IV.E-7 City of Oakland Construction Noise Standards at Receiving Property Line, dBA

	Daily 7:00 a.m. to 7:00 p.m.	Weekends 9:00 a.m. to 8:00 p.m.
Short-Term Operation[a]		
Residential	80	65
Commercial, Industrial	85	70
Long-Term Operational[b]		
Residential	65	55
Commercial, Industrial	70	60

[a] Short-term construction or demolition operation is less than 10 days.
[b] Long-term construction or demolition operation is 10 days or more.
Source: City of Oakland Municipal Code Section 17.120.050 Noise.

Municipal Code 17.120.060 outlines the City of Oakland's performance standards with regards to residential development exposed to groundborne vibration. The code restricts all activities outside of the M-40 and M-30 zones from creating a vibration that would be perceptible without instruments by the average person at or beyond any lot line of the lot containing such activities. Groundborne vibration caused by motor vehicles, trains, and temporary construction or demolition work is exempt from this standard.

The City's maximum allowable operational noise level standards for residential and commercial land uses in terms of percentile exceedance are shown in Table IV.E-8.

[3] Section 17.120 and Section 8.18.

City of Oakland's Standard Conditions of Approval. The City's Standard Conditions of Approval relevant to this impact topic are listed below for reference. The conditions of approval will be adopted as requirements of the proposed project if the project is approved by the City to help ensure no significant impacts (for the applicable topic) occur, as a result they are not listed as mitigation measures.

Table IV.E-8 City of Oakland Operational Noise Standards at Receiving Property Line, dBA

Cumulative Number of Minutes in Either the Daytime or Nighttime 1-Hour Time Period	Residential Daytime 7:00 a.m. to 10:00 p.m.	Residential Nighttime 10:00 p.m. to 7:00 a.m.	Commercial Use, Anytime
20	60	45	65
10	65	50	70
5	70	55	75
1	75	60	80
0	80	65	85

Source: City of Oakland Municipal Code Section 17.120.050 Noise.

COA NOISE-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 a.m. and 7:00 p.m. Monday through Friday, except that pile driving and/or other extreme noise generating activities greater than 90 dBA limited to between 8:00 a.m. and 4:00 p.m. Monday through Friday.

b) Any construction activity proposed to occur outside of the standard hours of 7:00 a.m. to 7:00 p.m. 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 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:

- 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.
- 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.

COA NOISE-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 city 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 wherever possible 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.

COA NOISE-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 City 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 City Building Services Division staff and Oakland Police Department; (during regular construction hours and off-hours);

b) A sign posted on-site pertaining with 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.

COA NOISE-4: Interior Noise. *Prior to issuance of a building permit.* 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) shall be incorporated into project building design, based upon recommendations of a qualified acoustical engineer. Final recommendations for sound-rated assemblies will depend on the specific building designs and layout of buildings on the site and shall be determined during the design phase.

COA NOISE-5: Pile Driving and Other Extreme Noise Generators. *Ongoing throughout demolition, grading, and/or construction.* To further reduce potential pier drilling, pile driving and/or other extreme noise generating construction impacts greater than 90 dBA, a set of site-specific noise attenuation measures shall be completed under the supervision of a qualified acoustical consultant. Prior to commencing construction, a plan for such measures shall be submitted for review and approval by the City to ensure that maximum feasible noise attenuation will be achieved. This plan shall be based on the final design of the project. A third-party peer review, paid for by the project applicant, may be required to assist the City in evaluating the feasibility and effectiveness of the noise reduction plan submitted by the project applicant. The criterion for approving the plan shall be a determination that maximum feasible noise attenuation will be achieved. A special inspection deposit is required to ensure compliance with the noise reduction plan. The amount of the deposit shall be determined by the Building Official, and the deposit shall be submitted by the project applicant concurrent with submittal of the noise reduction plan. The noise reduction plan shall include, but not be limited to, an evaluation of implementing the following measures. These attenuation measures shall include as many of the following control strategies as applicable to the site and construction activity:

a) Erect temporary plywood noise barriers around the construction site, particularly along on sites adjacent to residential buildings;

b) Implement "quiet" pile driving technology (such as pre-drilling of piles, the use of more than one pile driver to shorten the total pile driving duration), where feasible, in consideration of geotechnical and structural requirements and conditions;

c) Utilize noise control blankets on the building structure as the building is erected to reduce noise emission from the site;

d) Evaluate the feasibility of noise control at the receivers by temporarily improving the noise reduction capability of adjacent buildings by the use of sound blankets for example, and implement such measure if such measures are feasible and would noticeably reduce noise impacts; and

e) Monitor the effectiveness of noise attenuation measures by taking noise measurements.

COA NOISE-6: Vibrations Adjacent Historic Structures. *Prior to issuance of a demolition, grading or building permit.* The project applicant shall retain a structural engineer or other appropriate professional to determine threshold levels of vibration and cracking that could damage buildings adjacent to the project site and design means and methods of construction that shall be utilized to not exceed the thresholds.

d. Existing Noise Environment. The project components are located in a dense urban area with a variety of land uses surrounding the site. State Route 24 (SR-24) and the BART tracks are located to the west of the project site. A residential neighborhood, which includes a mix of densities, is located further west. A church and commercial uses are located to the east across Telegraph Avenue from the project site. To the north of the project site, across 40th Street, are residential and commercial uses. Commercial uses are located to the south of the project site. The following section describes the existing noise environment and identifies primary noise sources in the project vicinity.

The closest sensitive receptors would be the residential land uses located adjacent to the project site on West MacArthur Boulevard and on Telegraph Avenue. Additional residential buildings are located approximately 100 feet north of the site across 40th Street and 120 feet south of the site across West MacArthur Boulevard. Noise sensitive land uses on the east side of Telegraph Avenue include residential and church land uses. The construction and operation of the proposed project could affect these surrounding sensitive land uses.

(1) Existing Ambient Noise. Ambient noise sources in the vicinity of the project include the transportation noise from traffic on SR-24, I-580, 40th Street, West MacArthur Boulevard, and Telegraph Avenue. Occasional BART noise sources, parking lot activities noise sources, and natural noise sources such as wind and birds also contribute to the ambient noise environment.

Short-term ambient noise monitoring on the project site was conducted on July 11, 2007 between the hours of 11:00 a.m. and 1:00 p.m. at four separate locations in the project vicinity by LSA Associates, Inc. The purpose of this noise monitoring was to document the existing noise environment and capture the noise levels associated with operations and activities in the project vicinity. Table IV.E-9 lists the noise levels measured during the short-term 20-minute noise measurements. Maximum and minimum noise levels were recorded as well as the equivalent continuous noise level measure Leq. Each of the four 20-minute measurements taken on the proposed project site includes at least one BART train passing during each of the monitoring periods. Other sources of noise observed include noise from parking lot activities which include driving, people conversing, car doors shutting, vehicles starting, etc. Results of all monitoring are shown in Table IV.E-9. Results indicate that current noise levels in the project vicinity range from 61.1 to 66.8 dBA Leq. The meteorological conditions at the time of each noise measurement are shown in Table IV.E-10. Figure IV.E-1 shows the monitoring locations.

Table IV.E-9 Short-Term Ambient Noise Monitoring Results, dBA

Location Number	Location Description	Start Time	Leq [a]	Lmax[b]	Lmin [c]	Noise Sources
1	526 MacArthur Boulevard, 30' from north fence, 10' from east fence	11:00	61.1	73.8	58.0	Traffic on MacArthur Boulevard & SR-24, parking lot activities
2	Apgar Street, 12' from northwest corner of 3847 Telegraph Avenue, 35' from BART Parking lot entrance	11:25	65.1	77.1	60.7	Traffic on Telegraph Avenue & SR-24, BART, parking lot activities
3	BART parking lot between stalls 24 & 25	11:50	66.8	72.5	59.3	Traffic on SR-24, parking lot activities, BART
4	55' south of 40th Street on right edge of northeast BART parking entrance	12:15	65.6	74.0	60.6	Traffic on SR-24 & 40th Street, parking lot activity, BART

[a] Leq represents the average of the sound energy occurring over the 20-minute time period.
[b] Lmax is the highest instantaneous sound level measured during the 20-minute time period.
[c] Lmin is the lowest instantaneous sound level measured during the 20-minute time period.

Source: LSA Associates, Inc., July 2007.

(2) Existing Traffic Noise. The existing traffic noise levels for roadway segments in the project vicinity are listed in Table IV.E-11. This table was generated from roadway traffic volumes data, vehicle speeds, and roadway geometry, using the Federal Highways Administration (FHWA) highway traffic noise prediction model, FHWA RD-77-108. Existing noise levels along select roadway segments in the vicinity of the project (at 50 feet from the centerline of the outermost travel lane) range from 61.7 dBA to 80.4 dBA Ldn.

Table IV.E-10 Meteorological Conditions During Ambient Noise Monitoring

Location Number	Maximum Wind Speed (mph)	Average Wind Speed (mph)	Temp. (F)	Relative Humidity (%)
1	4.4	1.3	69.7	67
2	3.0	1.0	70.8	57
3	4.6	1.4	70.6	53
4	3.4	0.9	70.3	64

Source: LSA Associates, Inc., July 2007.

(3) Existing Rail Noise. The BART rail line is located west of the project site dividing the west- and east-bound lanes or SR-24. Figure 3 of the City's Noise Element of the General Plan[4] shows that the western portion of the project site within approximately 200 feet of the BART rail lines lies within the 60 dBA Ldn BART noise contour.

[4] City of Oakland, 2005. *City of Oakland General Plan, Noise Element.* June.

FIGURE IV.E-1

N

0 100 200

feet

Legend

Project Site

① Noise monitoring locations

MacArthur Transit Village Project EIR

Noise Monitoring Locations

SOURCE: GOOGLE MAPS, 2007.

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Table IV.E-11 Existing Traffic Noise Levels, dBA

Roadway Segment	ADT [a]	Center-line to 70 Ldn (feet)	Center-line to 65 Ldn (feet)	Center-line to 60 Ldn (feet)	Ldn (dBA) 50 feet from Centerline of Outermost Lane
M.L. King Jr. Way – 45th Street to 40th Street	8,100	< 50 [b]	< 50	88	61.8
Telegraph Avenue – 45th Street to 40th Street	20,100	< 50	62	126	63.7
40th Street - West Street to M.L. King Jr. Way	14,500	< 50	63	129	63.9
40th Street - M.L. King Jr. Way to BART Access	17,200	< 50	70	144	64.6
40th Street - BART Access to Telegraph Avenue	16,900	< 50	69	142	64.5
M.L. King Jr. Way – 40th Street to MacArthur Boulevard	7,900	< 50	< 50	86	61.7
Telegraph Avenue – 40th Street to 38th Street	17,500	< 50	57	115	63.1
Telegraph Avenue – 38th Street to MacArthur Boulevard	18,000	< 50	58	117	63.2
MacArthur Boulevard - West Street to M.L. King Jr. Way	12,000	< 50	60	115	62.7
MacArthur Boulevard - BART Access to Telegraph Avenue	12,700	< 50	62	120	62.9
SR-24 - I-580 to 42nd Street	150,700	365	781	1,681	79.4
I-580 - Telegraph Avenue to SR-24	213,300	460	984	2,117	80.4

Note: The shaded areas in the table indicate the roadway segments adjacent to the project site.

[a] ADT=Average Daily Traffic.

[b] Traffic noise within 50 feet of roadway centerline requires site specific analysis.

Source: LSA Associates, Inc., 2007.

Noise generated by BART train passbys was assessed in accordance with the U.S. Department of Transportation, Federal Transit Administration (FTA) recommended methodology obtained from chapter six of Transit Noise and Vibration Impact Assessment.

The calculated train noise level at 50 feet from the BART track centerline is approximately 69 dBA Ldn including warning horns. The closest noise sensitive land uses within the project site could be located approximately 225 feet from the track centerline. At this distance and assuming a direct line of sight, the predicted BART train noise levels would be 62.5 dBA Ldn with warning horns at the closest sensitive receptor.

(4) Existing Aircraft Noise. The San Francisco International Airport is located 15 miles southwest of the project site (across the Bay) and the Oakland International Airport is located approximately 6 miles south of the site. Due to the distance from these airports and orientation of flight paths, the project site is not located within the 65 dBA CNEL noise contours for either the San Francisco or Oakland International Airports.

2. Impacts and Mitigation Measures

This section evaluates potential noise and vibration impacts associated with the proposed project. It also identifies mitigation measures to address these impacts, as appropriate.

a. Criteria of Significance. The proposed project would result in a significant noise or vibration impact if it would:

- 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., Occupational Safety and Health Administration (OSHA)).
- Violate the City of Oakland Noise Ordinance (Oakland Planning Code Section 17.120.050) regarding operational noise.
- Violate the City of Oakland Noise Ordinance (Oakland Planning Code Section 17.120.050) regarding construction noise, except if an acoustical analysis is performed and all noise-related Standard Conditions of Approval imposed:

  During the hours of 7:00 p.m. to 7:00 a.m. on weekdays and 8:00 p.m. to 9:00 a.m. 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 (see Table IV.E-6).

- Violate the City of Oakland Noise Ordinance (Oakland Municipal Code Section 8.18.020) regarding nuisance of persistent construction-related noise.
- Create a vibration which is perceptible without instruments by the average person at or beyond any lot line containing vibration-causing activities not associated with motor vehicles, trains, and temporary construction or demolition work, except activities located within the (a) M-40 zone or (b) M-30 zone more than 400 feet from any legally occupied residential property (Oakland Planning Code Section 17.120.060).
- 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).
- Result in a 5 dBA permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- Conflict with State land use compatibility guidelines for all specified land uses for determination of acceptability of noise (Source: State of California, Governor's Office of Planning and Research, *General Plan Guidelines, 2003*).

- Be located within an airport land use plan and would expose people residing or working in the project area to excessive noise levels.
- Be located within the vicinity of a private airstrip, and would expose people residing or working in the project area to excessive noise levels.

b. Less-than-Significant Noise and Vibration Impacts. Less-than-significant noise impacts of the proposed project are discussed below.

(1) Stationary Noise Sources. Stationary noise is regulated under Chapter 17 of the City of Oakland Municipal Code as shown in Table IV.E-8. Stationary noise sources that may be associated with the project include mechanical ventilation and idling delivery trucks associated with the commercial portion of the project. The proposed project would not include manufacturing processes or mechanical ventilation equipment that would generate excess noise or vibration levels. Noise generated by mechanical machinery such as air conditioners and emergency generators would be similar to noise levels existing in the vicinity of the project site and would not create a significant increase in noise levels. Likewise, noise generated from the residential parking areas and BART parking garage would not be substantially higher than the current noise levels generated by similar uses in the project area. Therefore, noise from project related stationary noise sources would result in less-than-significant impacts on noise sensitive land uses in the project vicinity.

(2) Construction Related Noise and Vibration Sources. Two types of short-term noise impacts would occur during demolition, site remediation and project construction. The first is the increase in traffic flow on local streets, associated with the transport of workers, equipment, and materials to and from the project site. The pieces of heavy equipment for site remediation, grading and construction would be moved to the site and remain for the duration of each construction phase. The increase in traffic flow on the surrounding roads due to construction traffic is expected to be minimal. However, there would be short-term intermittent high noise levels associated with trucks arriving at and departing from the project site.

The second type of short-term noise impact is related to the noise generated by heavy equipment operating on the project site. Construction (including demolition of existing structures and site remediation) is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the site and, therefore, the noise levels surrounding the site as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction related noise ranges to be categorized by work phase. Table IV.E-12 lists typical construction equipment noise levels recommended for noise impact assessments, based on a distance of 50 feet between the equipment and a noise receptor.

As shown in Table IV.E-12, the maximum noise level generated by each hydraulic excavator on the proposed project site is anticipated to be 86 dBA Lmax at 50 feet from the earthmover. Each bulldozer would generate 88 dBA Lmax at 50 feet. The maximum noise level generated by water and pickup trucks is approximately 86 dBA Lmax at 50 feet from these vehicles. With each doubling of the number of sound sources of equal strength, the noise level increases by 3 dBA (e.g., two excavators operating at 86 dBA yield a total noise level of 89 dBA). Assuming that each piece of construction equipment operates simultaneously, the worst case combined noise level during this phase of construction would be 91 dBA Lmax at a distance of 50 feet from an active construction area. The nearest noise sensitive land use would be located within 50 feet of the project site at 3847 Telegraph Avenue.

Table IV.E-12 Typical Construction Equipment Maximum Noise Levels, Lmax

Type of Equipment	Range of Maximum Sound Levels (dBA at 50 feet)	Suggested Maximum Sound Levels for Analysis (dBA at 50 feet)
Pile Drivers	81 to 96	93
Rock Drills	83 to 99	96
Jackhammers	75 to 85	82
Pneumatic Tools	78 to 88	85
Pumps	68 to 80	77
Scrapers	83 to 91	87
Haul Trucks	83 to 94	88
Electric Saws	66 to 72	70
Portable Generators	71 to 87	80
Rollers	75 to 82	80
Dozers	85 to 90	88
Tractors	77 to 82	80
Front-End Loaders	86 to 90	88
Hydraulic Backhoe	81 to 90	86
Hydraulic Excavators	81 to 90	86
Graders	79 to 89	85
Air Compressors	76 to 89	85
Trucks	81 to 87	85

Source: Bolt, Beranek & Newman, 1987. Noise Control for Buildings and Manufacturing Plants.

Construction of the project is to occur over a seven-year period, beginning in 2009. During this period, a wide variety of construction remediation and demolition equipment would be used and materials would be transported to and from the site during each development phase. It is anticipated larger mechanical equipment such as tractors, scrapers and trucks would be used during the remediation and demolition phase. This phase would also include equipment to grind existing concrete for reuse on-site. Construction activities would include the use of smaller power tools, generators and other sources of noise. Depending on final foundation requirements, pile driving may also be necessary for project construction.

Construction-related noise associated with possible pile driving on the project site could impact noise sensitive receptors adjacent to these areas. As shown in Table IV.E-12, the maximum airborne noise level generated by a pile driver on the proposed project site is anticipated to be 93 dBA Lmax at 50 feet from the pile driver. The closest receptors include the existing residential land uses that adjoin the project site on MacArthur Boulevard and Telegraph Avenue. These receptors are located within 50 feet of potential pile driving areas. At this distance they would be exposed to maximum noise levels due to pile driving of up to 93 dBA Lmax.

The impacts from construction noise, including pile driving, would be reduced to less-than-significant levels with implementation of the City's Days/Hours of Construction Operation, and Noise Control Noise Complain Procedures, and Pile Driving and Other Extreme Noise Generators Standard Conditions of Approval (see COA's NOISE-1, NOISE-2, NOISE-3 and NOISE-5 on pages 290 to 292) for construction noise as described in Section IV.E-1.c(4).

To address impacts from pile driving and other extreme noise generating construction activities that may expose sensitive receptors to noise levels greater than 90 dBA Lmax, the City's Standard Conditions of Approval (see COA NOISE-1, NOISE-2, NOISE-3 and NOISE-5) mandate that a site specific noise reduction plan be developed and submitted for review and approval by the City to ensure that maximum feasible noise attenuation will be achieved. Implementation of these Standard Conditions of Approval would ensure that potential impacts resulting from construction-activity noise would be less than significant.

Construction activities associated with implementation of the project, including proposed pile driving activities, could temporarily expose persons in the vicinity of the proposed project construction areas to ground-borne vibration or ground-borne noise levels. Typical groundborne vibration levels measured at a distance of 50 feet from heavy construction equipment in full operation, such as bulldozers or other heavy tracked equipment, range up to approximately 94 VdB. This is above the damage threshold for historic or fragile buildings shown in Table IV.E-3. The City's Vibration Adjacent to Historic Structures Standard Conditions of Approval (see COA NOISE-5 on page 292) would ensure the impact remains less than significant.

Pile driving has the potential to generate both high airborne sound levels and ground-borne vibration levels. Pile driving activities have the potential to damage buildings within the project site and near the site. Maximum ground-borne vibration levels associated with potential pile driving within the site could range from 1.15 PPV for structures 30 feet away and 0.30 PPV for structures 75 feet away.[5] This level of vibration would not be considered significant. Noise from pile driving is discussed above.

(2) Groundborne Noise and Vibration Sources. Railroad activity can be a source of groundborne noise and vibration. However, vibration from BART train activity would not be perceptible at potential noise sensitive land uses on the project site due to the distance of the BART rail line from the project site and the difference in elevation between the rail line and the project site.

[5] Federal Transit Administration, U.S. Department of Transportation, 1995. *Transit Noise and Vibration Impact Assessment.*

(3) Traffic Noise Sources. Traffic generated by the proposed project would not be significant enough to result in any perceptible changes in noise. However, anticipated cumulative traffic and BART train noise sources could result in noise levels that would impact the proposed project.

Local traffic will generate long-term exterior noise exceeding Normally Acceptable Levels on the project site and could expose site users to unacceptable noise levels.

The existing and future traffic noise levels were calculated using the FHWA Highway Traffic Noise Prediction Model. These project scenarios were evaluated: Existing with Project, Cumulative 2015 Baseline[6] with Project, and Cumulative 2030 Baseline with Project.[7] Traffic data used in the model for City roadways were obtained from the traffic impact analysis prepared by Fehr & Peers (August, 2007). Traffic data used for SR-24 and I-580 were based on Caltrans' latest available traffic volume data and assume a 3 percent annual increase.[8] The resulting noise levels were weighted and summed over a 24-hour period in order to determine the Ldn values. Ldn contours are derived through a series of computerized iterations to isolate the 60, 65, and 70 dBA Ldn contours for traffic noise levels in the project area. The existing traffic noise levels on roadways segments in the project vicinity are shown in Table IV.E-11. Table IV.E-13 lists traffic noise levels for existing conditions *with* the project. Tables IV.E-14 and IV.E-15 list the traffic noise levels for Cumulative 2015 Baseline conditions *without* and *with* the project respectively. Tables IV.E-16 and IV.E-17 list the traffic noise levels for Cumulative 2030 Baseline conditions *without* and *with* the proposed project respectively.

Tables IV.E-13, IV.E-15, and IV.E-17 show that there would be a less-than-significant increase under with the project conditions compared to the baseline without the project conditions. Highway traffic noise levels would remain unchanged due to the very small percentage of project-generated traffic in relation to existing vehicle traffic on SR-24 and I-580. The largest increase in traffic-related noise on City roadway segments with implementation of the project would be on MacArthur Boulevard from the BART access driveway to Telegraph Avenue, which would be an increase of 0.5 dBA from baseline levels. This noise level increase is well below the 3 dBA increase considered to be perceptible by the human ear in an outdoor environment and clearly below the significance threshold of 5 dBA. No

[6] Baseline conditions include past, present, existing, pending and reasonably foreseeable future development.

[7] Ibid.

[8] Caltrans, 2005. *2004 Annual Average Daily Truck Traffic on the California State Highway System*. August.

Table IV.E-13 Existing with Project Traffic Noise Levels, dBA

Roadway Segment	ADT [a]	Center-line to 70 Ldn (feet)	Center-line to 65 Ldn (feet)	Center-line to 60 Ldn (feet)	Ldn (dBA) 50 Feet from Centerline of Outer-most Lane	Increase over Existing Conditions
M.L. King Jr. Way – 45th Street to 40th Street	8,400	< 50	< 50	90	61.9	0.1
Telegraph Avenue – 45th Street to 40th Street	20,900	< 50	63	129	63.9	0.2
40th Street – West Street to M.L. King Jr. Way	15,100	< 50	65	132	64.0	0.1
40th Street – M.L. King Jr. Way to BART Access	18,000	< 50	72	148	64.8	0.2
40th Street - BART Access to Telegraph Avenue	16,800	< 50	69	142	64.5	0.0
M.L. King Jr. Way – 40th Street to MacArthur Blvd.	8,400	< 50	< 50	90	61.9	0.2
Telegraph Avenue – 40th Street to 38th Street	18,900	< 50	60	121	63.4	0.3
Telegraph Avenue – 38th Street to MacArthur Blvd.	19,200	< 50	60	122	63.5	0.3
MacArthur Blvd. – West Street to M.L. King Jr. Way	12,400	< 50	61	118	62.8	0.1
MacArthur Blvd. – BART Access to Telegraph Ave.	14,300	< 50	65	129	63.4	0.5
SR-24 – I-580 to 42nd Street	150,700	365	781	1,681	79.4	0.0
I-580 – Telegraph Avenue to SR-24	213,300	460	984	2,117	80.4	0.0

Note: The shaded areas in the Tables IV.E-13 through IV.E-17 indicate the roadway segments adjacent to the project site.
[a] ADT=Average Daily Trips calculated from traffic volumes in the Fehr & Peers TIA. Model rounds ADT up to 100 trips.
Source: LSA Associates, Inc., 2007.

Table IV.E-14 Cumulative 2015 Baseline[a] Without Project Traffic Noise Levels, dBA

Roadway Segment	ADT	Center-line to 70 Ldn (feet)	Center-line to 65 Ldn (feet)	Center-line to 60 Ldn (feet)	Ldn (dBA) 50 Feet from Centerline of Outermost Lane
M.L. King Jr. Way – 45th Street to 40th Street	9,900	< 50	< 50	100	62.6
Telegraph Avenue – 45th Street to 40th Street	26,100	< 50	72	149	64.8
40th Street – West Street to M.L. King Jr. Way	17,000	< 50	70	143	64.5
40th Street – M.L. King Jr. Way to BART Access	19,700	< 50	76	157	65.2
40th Street – BART Access to Telegraph Avenue	19,500	< 50	75	156	65.1
M.L. King Jr. Way – 40th Street to MacArthur Blvd.	9,500	< 50	< 50	97	62.5
Telegraph Avenue – 40th Street to 38th Street	22,700	< 50	67	136	64.2
Telegraph Avenue – 38th Street to MacArthur Blvd.	23,100	< 50	67	137	64.3
MacArthur Blvd. – West Street to M.L. King Jr. Way	17,100	< 50	72	144	64.2
MacArthur Blvd. – BART Access to Telegraph Ave.	17,700	< 50	73	147	64.3
SR-24 – I-580 to 42nd Street	190,900	427	914	1,968	80.4
I-580 – Telegraph Avenue to SR-24	270,200	537	1,152	2,478	81.4

[a] Baseline conditions included past, present, existing, pending and reasonably foreseeable future development.
Source: LSA Associates, Inc., 2007.

Table IV.E-15 Cumulative 2015 Baseline[a] Plus Project Traffic Noise Levels, dBA

Roadway Segment	ADT	Center-line to 70 Ldn (feet)	Center-line to 65 Ldn (feet)	Center-line to 60 Ldn (feet)	Ldn (dBA) 50 Feet from Centerline of Outer-most Lane	Increase over Future 2015 w/o Project Conditions
M.L. King Jr. Way – 45th Street to 40th Street	10,200	< 50	< 50	102	62.8	0.2
Telegraph Avenue – 45th Street to 40th Street	26,900	< 50	73	152	65.0	0.2
40th Street – West Street to M.L. King Jr. Way	17,700	< 50	71	146	64.7	0.2
40th Street – M.L. King Jr. Way to BART Access	20,500	< 50	78	161	65.4	0.2
40th Street – BART Access to Telegraph Ave.	19,400	< 50	75	155	65.1	0.0
M.L. King Jr. Way – 40th St. to MacArthur Blvd.	10,100	< 50	< 50	101	62.7	0.2
Telegraph Avenue – 40th Street to 38th Street	24,200	< 50	69	141	64.5	0.3
Telegraph Ave. – 38th Street to MacArthur Blvd.	24,400	< 50	69	142	64.5	0.2
MacArthur Blvd. – West Street to M.L. King Jr. Way	17,600	< 50	73	147	64.3	0.1
MacArthur Blvd. – BART Access to Telegraph Ave.	19,500	< 50	78	157	64.8	0.5
SR-24 – I-580 to 42nd Street	190,900	427	914	1,968	80.4	0.0
I-580 – Telegraph Avenue to SR-24	270,200	537	1,152	2,478	81.4	0.0

[a] Baseline conditions included past, present, existing, pending and reasonably foreseeable future development.

Source: LSA Associates, Inc., 2007.

Table IV.E-16 Cumulative 2030 Baseline[a] Without Project Traffic Noise Levels, dBA

Roadway Segment	ADT	Center-line to 70 Ldn (feet)	Center-line to 65 Ldn (feet)	Center-line to 60 Ldn (feet)	Ldn (dBA) 50 feet from Centerline of Outermost Lane
M.L. King Jr. Way – 45th Street to 40th Street	12,300	< 50	56	115	63.6
Telegraph Avenue – 45th Street to 40th Street	29,600	< 50	78	161	65.4
40th Street – West Street to M.L. King Jr. Way	23,300	< 50	84	175	65.9
40th Street – M.L. King Jr. Way to BART Access	25,800	< 50	90	187	66.4
40th Street – BART Access to Telegraph Avenue	25,700	< 50	89	187	66.3
M.L. King Jr. Way – 40th Street to MacArthur Blvd.	11,400	< 50	53	109	63.2
Telegraph Avenue – 40th Street to 38th Street	27,700	< 50	75	154	65.1
Telegraph Avenue – 38th Street to MacArthur Blvd.	28,400	< 50	76	157	65.2
MacArthur Blvd. – West Street to M.L. King Jr. Way	25,400	< 50	90	186	65.9
MacArthur Blvd. – BART Access to Telegraph Ave.	25,900	< 50	91	189	66.0
SR-24 – I-580 to 42nd Street	297,400	572	1,228	2,644	82.4
I-580 – Telegraph Avenue to SR-24	420,900	720	1,547	3,330	83.4

[a] Baseline conditions included past, present, existing, pending and reasonably foreseeable future development.

Source: LSA Associates, Inc., 2007.

Table IV.E-17 Cumulative 2030 Baseline[a] Plus Project Traffic Noise Levels, dBA

Roadway Segment	ADT	Center-line to 70 Ldn (feet)	Center-line to 65 Ldn (feet)	Center-line to 60 Ldn (feet)	Ldn (dBA) 50 feet from Centerline of Outer-most Lane	Increase over Future 2030 No Project Conditions
M.L. King Jr. Way – 45th Street to 40th Street	12,600	< 50	56	117	63.7	0.1
Telegraph Avenue – 45th Street to 40th Street	30,400	< 50	79	164	65.5	0.1
40th Street – West Street to M.L. King Jr. Way	24,000	< 50	86	179	66.0	0.1
40th Street – M.L. King Jr. Way to BART Access	26,700	< 50	91	192	66.5	0.1
40th Street – BART Access to Telegraph Ave.	25,600	< 50	89	186	66.3	0.0
M.L. King Jr. Way – 40th St. to MacArthur Blvd.	12,000	< 50	55	113	63.5	0.3
Telegraph Ave. – 40th Street to 38th Street	29,200	< 50	77	160	65.3	0.2
Telegraph Ave. – 38th St. to MacArthur Blvd.	29,700	< 50	78	162	65.4	0.2
MacArthur Blvd. – West St. to M.L. King Jr. Way	25,900	< 50	91	189	66.0	0.1
MacArthur Blvd. – BART Access to Telegraph Ave.	27,700	< 50	95	197	66.3	0.3
SR-24 – I-580 to 42nd Street	297,400	572	1,228	2,644	82.4	0.0
I-580 – Telegraph Avenue to SR-24	420,900	720	1,547	3,330	83.4	0.0

[a] Baseline conditions included past, present, existing, pending and reasonably foreseeable future development.

Source: LSA Associates, Inc., 2007.

significant traffic noise impacts would occur for off-site land uses. As a result, no mitigation is required to address off-site traffic related noise impacts.

Highway traffic noise sources are the dominant noise source on the project site. Based on Figure 2 of the Noise Element of the City's General Plan, the project site would lie within the projected 70 dBA Ldn roadway noise contour lines of SR-24/I-580 for the year 2025. Modeled traffic noise levels on SR-24 would range up to 74.6 dBA Ldn under Cumulative 2030 Baseline with Project conditions at the nearest potential sensitive receptors on the project site. Noise from traffic along adjacent City streets would also significantly impact potential sensitive land uses on the project site. Noise levels from traffic on MacArthur Boulevard and 40th Street would reach up to 66.3 dBA Ldn at 50 feet from the outermost travel lane of each roadway under Cumulative 2030 Baseline with Project conditions.

These noise levels exceed the "normally acceptable" level established by the City's land use compatibility chart. In accordance with the General Plan Noise Element, in areas with noise levels from 60 dBA to 75 dBA Ldn, construction of medium- to high-density residential buildings would require acoustic analysis to determine the insulation needed to maintain an interior noise level of 45 dBA Ldn.

Based on the Standard Conditions of Approval that are considered part of the project for purposes of this analysis, noise reduction measures in the form of sound-rated assemblies will be incorporated into project building design. Final recommendations for sound-rated assemblies will depend on the specific building designs and layout of buildings on the site and shall be determined during the design phase based upon the recommendations of a qualified acoustical engineer. Based on current site plans, sound-rated assemblies and forced air systems could be used to achieve City Standards.

Based on the EPA's Protective Noise Levels,[9] with a combination of walls, doors, and windows, standard construction for northern California residential buildings would provide more than 25 dBA in exterior to interior noise reduction with windows closed and 15 dBA or more with windows open. With windows open, sensitive receptors on the project site nearest to SR-24 would not meet the interior noise standard (i.e., 74.6 dBA – 15 dBA = 59.6 dBA). Similarly, sensitive receptors on the project site within 50 feet of the outermost travel lane of West MacArthur Boulevard and 40th Street would also not meet the interior noise standard (i.e., 66.3 dBA – 15 dBA = 51.3 dBA). As a result, an alternate form of ventilation, such as air conditioning systems, would be required to ensure that windows could remain closed for a prolonged period of time.

However, even with windows closed using standard northern California residential construction, rooms directly exposed to and located within 240 feet of the centerline of SR-24 would not meet the interior noise standard of 45 dBA Ldn (i.e., 74.6 dBA – 25 dBA = 49.6 dBA). Therefore, in addition to an alternate form of ventilation, building facades directly exposed to this roadway segment must be constructed to have an overall minimum sound transmission class (STC) rating that would reduce traffic noise impacts to meet the interior noise standard of 45 dBA Ldn. The actual ratings must be determined as part of the project specific environmental noise study required by the City. Therefore, the actual required STC ratings might be slightly higher or lower depending on the amount of exposure of each building façade to the noise source. Quality control must be exercised in construction to ensure all air-gaps and penetrations of the building shell are controlled and sealed.

Exterior active use areas would also be exposed to traffic noise levels. There are no noise standards that specifically regulate private open space use areas, but the following is recommended to help ensure noise within outdoor use areas is minimized. A building located between a noise source and receptor would provide a minimum of 15 dBA reduction. Therefore, to minimize impacts to outdoor active use areas, such uses should be sheltered by buildings from direct exposure to SR-24, 40th Street, and West MacArthur Boulevard (see Recommendation NOISE-1 below). Outdoor active use areas including playgrounds, patios, and decks should be sheltered by buildings or by locating such uses a minimum distance of 87 to 372 feet from these roadways to reduce noise impacts. More

[9] EPA 550/9-79-100, November 1978.

specifically, to reduce traffic noise, exterior active use areas should be located a minimum of 87 feet from the centerline of 40th Street, a minimum of 94 feet from the centerline of West MacArthur Boulevard, and a minimum of 372 feet from the centerline of SR-24.

As noted under the existing noise environment discussion (Section IV.E.1.d), an LSA noise technician conducted ambient noise monitoring on the project site to capture noise levels associated with existing operations and activities in the project vicinity. Maximum and minimum noise levels were recorded as well as the equivalent continuous noise level measure Leq. Each of the short-term measurements recorded the approach and departure of at least one BART train. As observed and noted at the time of the recordings, each of the highest single event maximum noise levels resulted from vehicular activity. In particular, for the short-term measurement at site location number 3, nearest to BART and SR-24, the maximum single event noise level sources were buses on the BART access road. Although BART activity was audible (and recorded as part of each measurement) on the project site, BART activity did not produce any single event noise levels higher than existing vehicular noise levels surrounding the site.

Additional analysis was performed to determine the 24-hour weighted effects of BART train activity on future noise sensitive receptors on the project site.

The existing BART rail line and the MacArthur BART boarding platforms are located approximately 225 feet from potential on-site noise sensitive land uses. For purposes of this analysis it is assumed, based on the current train schedule that a maximum of 430 BART trains would pass through the MacArthur BART train station per day. The daily noise level generated by these transit activities was estimated in accordance with the U.S. Department of Transportation, Federal Transit Administration (FTA) recommended methodology obtained from chapter six of *Transit Noise and Vibration Impact Assessment*.[10] The estimation of transit noise levels was based on a combined total of approximately 404 daytime (7:00 a.m. – 10:00 p.m.) and 26 nighttime (10:00 p.m. – 7:00 a.m.) trains during a typical weekday with warning horns sounding as trains approach the station. The calculation assumed an average of 10 cars per train for daytime and five cars per train for nighttime trains and an estimated average speed of 30 miles per hour when approaching and leaving the MacArthur BART station. The calculated train noise level with these assumptions and measured at 50 feet from the BART track centerline is approximately 69 dBA Ldn including warning horns.

Average hourly daytime noise levels from BART trains near the project site can reach 71 dBA Leq(h) at 50 feet (with warning horns). Average hourly nighttime noise levels can reach 69 dBA Leq(h) at 50 feet (with warning horns). The closest noise sensitive land uses within the project site could be located approximately 225 feet from the track centerline. At this

[10] Federal Transit Administration, 2006. *Transit Noise and Vibration Impact Assessment*. May.

distance and assuming a direct line of sight, the predicted train noise levels would be 62.5 dBA Ldn at the façade of these sensitive receptors. This noise level would be reduced to below 60 dBA Ldn at a distance of 400 feet from the track centerline. This data corresponds to the Railroad/BART Noise Contours figure in the Noise Element of the Oakland General Plan[11] which shows that the western portion of the project site would be within the 60 dBA Ldn BART noise contour.

As noted under the discussion of traffic noise impacts (Section IV.E.2.b(3)), noise levels from traffic on SR-24 would range up to 74.6 dBA Ldn under year 2030 baseline with project conditions at the façade of the nearest sensitive receptors on the project site. This is more than 10 dBA greater than that of the calculated BART train activity noise levels of 62.5 dBA Ldn at these receptors. The principles of sound show that the addition of a noise source 10 dBA lower than another noise source would not increase the ambient noise. Therefore, noise from vehicular activity on SR-24 would remain the dominant noise source affecting the project site.

Traffic and BART-related noise impacts would be reduced to a less-than-significant level with implementation of the City's Interior Noise Standard Conditions of Approval (see COA NOISE-4 on page 292). Final site-specific design features must be determined as part of the project specific environmental noise study required by the City. Therefore, the final required design features may change slightly from the following recommendations based on the results of this project-specific analysis.

COA NOISE-4: Interior Noise. *Prior to issuance of a building permit.* 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) shall be incorporated into project building design, based upon recommendations of a qualified acoustical engineer. Final recommendations for sound-rated assemblies will depend on the specific building designs and layout of buildings on the site and shall be determined during the design phase; however, the following sound-rated assembly recommendations, based on the conceptual project layout and design (described in Chapter III, Project Description) should be included in the final study and will be included in the Standard Condition of Approval:

An alternate form of ventilation, such as air conditioning systems, shall be included in the design for all units located within 659 feet of the centerline of SR-24, or within 153 feet of the centerline of 40th Street, or within 166 feet of the centerline of MacArthur Boulevard to ensure that windows can remain closed to meet the interior noise standard and Uniform Building Code Requirements.

All residential building façades directly exposed to and within 240 feet of the centerline of SR-24 must be constructed to meet the interior DNL 45 dB requirement; this likely could be achieved

[11] City of Oakland, 2005. *City of Oakland General Plan, Noise Element, Figure 3: Railroad/BART Noise Contours (Year 2000).* June.

with an overall STC-30 rating with windows having a minimum STC-34 rating. This could be achieved with a typical 1-inch insulated glazing assembly, possibly with one light being laminated (or other appropriate example assembly). Quality control must be exercised in construction to ensure all air-gaps and penetrations of the building shell are controlled and sealed.

The following measure is also recommended to help minimize the effect of noise in outdoor use areas (the measure is not a required mitigation measure as there is no standard for private outdoor use area):

Recommendation NOISE-1: All exterior active use areas, including playgrounds, patios, and decks, shall either be shielded by buildings to block any direct line of sight to 40th Street, MacArthur Boulevard, or SR-24; or be located a minimum of 87 feet from the centerline of 40th Street, a minimum of 94 feet from the centerline of MacArthur Boulevard, and a minimum of 372 feet from the centerline of SR-24.

c. Significant Noise and Vibration Impacts. The proposed project would not result in any significant noise or vibration-related impacts.

d. Cumulative Noise and Vibration Impacts. The geographic area considered for the noise cumulative analysis includes the area in close proximity to the project site including North Oakland, parts of West Oakland and Downtown/Oakland Central, south of I-580 to Grand Avenue between San Pablo Avenue on the west and Harrison Street on the east. This area is generally depicted on Figure I-1 on page 2. The cumulative analysis considers shorter-term construction related noise and longer-term operational and traffic related noise, based on the land use projections detailed in Appendix C.

Longer-term noise from cumulative development (including past, present, existing, approved, pending, and reasonably forseeable future development) in the area would primarily occur from motor vehicle traffic. Cumulative traffic noise levels in the project area were estimated using traffic data provided by Fehr and Peers and are presented in Table IV.E-17. As shown in the table, the combination of project and cumulative traffic would not increase traffic noise levels by greater than 5 dBA along the analyzed roadway segments. Therefore, this increase would not be perceptible over the total noise levels that were monitored along these segments. Traffic noise forms one component of the total noise environment. An increase in traffic noise of 5 dBA would not necessarily translate to an increase of 5 dBA in the total ambient noise environment. When the resultant noise levels from project combined with cumulative traffic (past, present, existing, approved, pending and reasonably foreseeable future development) along these segments are logarithmically added to the existing monitored noise levels, the increase would be less than 5 dBA and hence, less than significant.

Noise impacts under cumulative conditions must consider other projects in the vicinity that could contribute a significant cumulative impact on sensitive receptors. Other planned major construction projects in the MacArthur BART project vicinity include the Kaiser Permanente project located at the intersection of MacArthur Boulevard and Broadway. This planned project is located approximately 0.4 miles (2,100 feet) east of the project site. Existing land uses between the two projects primarily consist of residential land uses with commercial and recreational land uses interspersed.

Two types of short-term noise impacts would occur during demolition and construction phases for both projects. The first is the increase in traffic flow on local streets associated with the transport of workers, equipment, and materials to and from the project sites. Although both projects may result in increases in traffic volumes on the same roadway segments (such as along MacArthur Boulevard), these increases would be expected to be minimal and would result in a less-than-significant impact on sensitive receptors in the vicinity.

The second type of short-term noise impact is related to the noise generated by heavy equipment operating on the project site. Demolition and site preparation phases are typically the loudest phases of construction due to the types of equipment used. The worst case combined noise level during this phase of construction would be approximately 91 dBA Lmax at a distance of 50 feet from an active construction area. The nearest noise sensitive land uses to both project sites would be located approximately 1,050 feet from each site (those residential land uses located half-way between the Telegraph Avenue and MacArthur Boulevard intersection and the intersection of Broadway and MacArthur Boulevard). At this distance and assuming a direct line of sight to both sites, the combined noise levels would be less than 65 dBA Lmax due to distance attenuation alone. Therefore, due to the distance between both project sites and intervening structures, noise from construction equipment operating on both sites would not be audible above the ambient noise levels at sensitive receptors located between the two sites. In addition, the impacts from construction noise at both sites, including pile driving, would be reduced to less-than-significant levels with implementation of the City's Standard and Uniformly Applied Conditions of Approval for construction noise as described in Section IV.E-1.b(3). Compliance with the conditions of approval applicable to construction hours of operation, noise control, noise complaint procedures, and pile driving and other extreme noise generators, would ensure that both projects comply with the City's Noise Ordinance. As the City's Standard and Uniformly Applied Conditions of Approval are included as part of the project, this cumulative impact would be considered less-than-significant.

F. HYDROLOGY AND WATER QUALITY

This section describes the existing hydrological setting for the project site, including runoff, drainage, and water quality, based on available information included with the application, review of a preliminary geotechnical evaluation, environmental investigation reports, other published materials, and a site reconnaissance. Based on the information reviewed, this section identifies impacts that may result from project development, and provides mitigation measures to reduce potential impacts to a less-than-significant level, if feasible.

1. Setting

The existing conditions at and near the site related to hydrology and storm drainage are described below.

a. Climate. The climate of the Oakland area is characterized as dry-summer subtropical (often referred to as Mediterranean), with cool wet winters and relatively warmer dry summers. The annualized average high temperature is 67.0º Fahrenheit (F); the average low is 52.0º F. The mean annual rainfall in the vicinity of the project site, for the period between 1970 and 2006, is approximately 23.5 inches, the majority of which occurs from November through April. During the period of record, annual rainfall has varied from 10.0 inches (1976) to 41.1 inches (1998), with a one-day high of 4.7 inches of precipitation on January 4, 1982.[1] Analysis of long-term precipitation records indicates that wetter and drier cycles lasting several years are common in the region. Severe, damaging rainstorms occur at a frequency of about once every three years.[2]

(1) Runoff and Drainage. The project site is relatively flat, ranging in elevation from about 65 to 78 feet above mean sea level (relative to the National Geodetic Vertical Datum [NGVD]). There are no U.S. Geological Survey (USGS) “blue line” creeks or streams crossing the project site.[3] Based on mapping of regional historic drainage conditions, no historical watercourses cross the site; the nearest named creek is the Broadway Branch of Glen Echo Creek, which is approximately 0.4 miles to the southeast of the site. Broadway Creek has been placed in underground culverts parallel to Broadway, passing under Mosswood Park before joining with Glen Echo Creek, leading to Lake Merritt. Glen Echo Creek is approximately 0.6 miles to the south and Temescal Creek approximately 0.5 miles to the

[1] Western Regional Climate Center, 2007, *General Climate Summary, Oakland Museum, Ca.* Website: www.wrcc.dri.edu July 9.

[2] Brown, William M. III, 1988, *Historical Setting of the Storm: Perspectives on Population, Development, and Damaging Rainstorms in the San Francisco Bay Region,* in Landslides, Floods, and Marine Effects of the Storm of January 3-5, 1982, in the San Francisco Bay Region, California, Stephen D. Ellen and Gerald F. Wieczorek, Eds., U.S. Geological Survey Professional Paper 1434.

[3] United States Geological Survey, 1959 (photo revised in 1980), Oakland West, Topographic Quadrangle.

northwest, both of which have been largely culverted. An underground storm main is aligned below Telegraph Avenue leading to a junction near the Highway 580 and State Route 24 interchange, and from there northwest till emptying into San Francisco Bay.[4] The irregularly shaped, 8.2-acre project site consists of an approximately 5-acre BART parking lot, and commercial and residential uses along Telegraph Avenue and West MacArthur Boulevard. Based on observation made during a July 2007 site reconnaissance, impervious surfaces cover approximately 90 percent of the site with minimal ornamental landscaping around the perimeter of the BART parking lot and relatively small areas of landscaping on the adjacent parcels. Runoff on the impervious portions of the site is directed by sheetflow primarily towards curbside storm drains. The storm drains lead to city-maintained storm mains, located in adjacent streets and feeding the main along Telegraph Avenue.[5]

b. Flooding. In 1968, Congress created the National Flood Insurance Program (NFIP) in response to the rising cost of taxpayer-funded disaster relief for flood victims and the increasing amount of damage caused by floods. The NFIP makes federally-backed flood insurance available to communities that agree to adopt and enforce floodplain management ordinances to reduce future flood damage. The Federal Emergency Management Agency (FEMA) manages the NFIP. FEMA is the agency responsible for conducting floodplain studies and publishing Flood Insurance Rate Maps (FIRMs) that delineate flood hazard areas. The City of Oakland is a participating community in the NFIP, and therefore all new development must comply with the minimum requirements of the NFIP.[6] Based on FEMA mapping, the project site is not located in the 100 or 500-year flood zone.[7]

The project site is not located within a mapped dam failure inundation hazard zone, and therefore would not be expected to be susceptible to flooding hazards associated with catastrophic dam failure.[8]

c. Water Quality. The quality of surface water and groundwater in the vicinity of the project site is affected by past and current land uses at the site and within the watershed, and the composition of geologic materials in the vicinity. The State Water Resources Control Board and Regional Water Quality Control Boards regulate water quality. The project site is under the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (Water

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[4] Sowers, Janet M., 1993 (revised 1995 & 2000). *Creek and Watershed Map of Berkeley & Oakland,* Oakland Museum of California.

[5] Sowers, Janet M., 1993 (revised 1995 & 2000), op. cit.

[6] City of Oakland, 2004. *General Plan, Chapter 6, Safety Element.* November.

[7] Federal Emergency Management Agency (FEMA), 1982, *FIRM # 0650480015B OAKLAND, CTY/ALAMEDA CO*, September 30.

[8] Association of Bay Area Governments, 1995, *Dam Failure Inundation Hazard Map for North Oakland*, accessed 07/09/07 at: gis.abag.ca.gov/website/dam_inundation/viewer.htm.

Board), which is responsible for implementation of state and federal water quality protection policies in the Bay Area. The Water Board implements the Water Quality Control Plan (Basin Plan),[9] a regulatory and policy document for managing water quality issues in the region. The Basin Plan establishes beneficial water uses for waterways and water bodies within the region, including the San Francisco Bay and groundwater.

(1) Stormwater Quality. The National Pollutant Discharge Elimination System (NPDES) program (established through the Clean Water Act) regulates runoff water quality; the NPDES program objective is to control and reduce pollutant discharges to water bodies. The Water Board administers the NPDES program. The Water Board has conveyed responsibility for implementation of stormwater regulations in the vicinity of the project site to the Alameda Countywide Clean Water Program (ACCWP). The ACCWP maintains compliance with the NPDES permit and promotes stormwater pollution prevention. State and federal statutes and regulations mandate compliance with the NPDES Permit.

Participating agencies (including the City of Oakland) must comply with the provisions of the countywide NPDES permit by ensuring that new development and redevelopment mitigate water quality impacts to stormwater runoff both during construction and operation periods of projects. Recent changes to the permit held by the ACCWP are detailed in Water Board Order R2-2003-0021 (NPDES Permit No. CAS0029831). Projects that propose to create (or in the process of redevelopment, add or replace) more than 10,000 square feet of impervious surfaces are subject to these regulations. The proposed project would create more than 10,000 square feet of new impervious surface, and therefore would be required to meet all the terms of the permit, including (but not limited to) the following requirements of provision C.3:

- **Numeric Sizing Criteria for Pollutant Removal Treatment Systems.** The project must include source controls, design measures, and treatment controls to minimize stormwater pollutant discharges. Treatment controls must be sized to treat a specific amount – about 85 percent – of average annual runoff (in the Bay Area this is equivalent to about the 1-inch storm).
- **Operation and Maintenance of Treatment Measures.** Treatment controls often do not work unless adequately maintained. The permit requires an operations and maintenance (O&M) program, which includes: (1) identifying the properties with treatment controls; (2) developing agreements with private entities to maintain the controls (e.g., incorporation into CC&Rs or homeowners association duties); and (3) periodic inspection, maintenance (as needed), and reporting.
- **Limitation on Increase of Peak Stormwater Runoff Discharge Rates.** Urbanization creates impervious surfaces that reduce the landscape's natural ability to absorb water

[9] San Francisco Bay Regional Water Quality Control Board, 1995 (revised 2004). *Water Quality Control Plan*, November 17.

and release it slowly to creeks. These impervious surfaces increase peak flows in creeks and can cause erosion. This potential impact to creek systems is termed "hydrograph modification" or "hydromodification." Depending on location, some projects must evaluate the potential for this to occur and provide mitigation as necessary. The potential for hydromodification is discussed further below.

Projects disturbing more than 1 acre of land during construction are required to file a Notice of Intent (NOI) with the Water Board for coverage under the State NPDES General Construction Permit for discharges of stormwater associated with construction activity. Sites less than 1 acre and not part of a larger project are not required to file the NOI under the General Construction Permit. However, projects less than an acre are still required to prevent erosion and sediment loss and other potential sources of water pollution resulting from construction by incorporating construction controls using Best Management Practices (BMPs).[10] The ACCWP Stormwater Quality Protection Plan (Plan) requires that all new construction implement Construction Site Field Controls; the Plan also requires that BMPs be designed and implemented to reduce potential impacts to surface water quality during the construction of the project.[11]

(2) City of Oakland Public Works. The City of Oakland Public Works Agency, Environmental Services Division, offers the following recommendations[12] to manage site stormwater. These recommendations are specifically designed to enhance and ensure the protection of water quality by reducing or eliminating the sources that contribute to the degradation of water quality. In addition, methods for treatment and managing runoff that prevent erosion, minimize transport of sediment, and encourage onsite infiltration are included. The City of Oakland encourages the use of these recommendations as plan elements within a proposed project to fulfill requirements as mandated by countywide ACCWP NPDES permit and City of Oakland Conditions of Approval requirements.

- Pre-design the project with specific programming criteria and standards that must be met in the management of stormwater.
- Use design elements and site utilization that will minimize alterations and ecological impacts to the watersheds and/or water features.
- Designers should refer to the Bay Area Stormwater Management Agencies Association's *Start at the Source*, a design guidance manual for stormwater quality protection. It is

[10] Alameda Countywide Clean Water Program, 2000 (revised 2002). *Developers, Contractors and Builders,* accessed at www.cleanwaterprogram.org on October 31, 2006.

[11] Alameda Countywide Clean Water Program 2003. *Stormwater Quality Management Plan 2001-2008*. February 19. Accessed at http://www.cleanwaterprogram.org on October 31, 2006.

[12] City of Oakland Public Works Agency, 2008, *Strategy 1.5: Manage Site Water*, Environmental Services Division. Accessed on 01/09/2008 at: http://www.oaklandpw.com/Page368.aspx.

recommended to use biologically based stormwater management features such as swales; sediment control ponds, pools, and wetlands along drainage courses; and infiltration basins to retain and treat stormwater on-site.

- Minimize hardscapes and use permeable surface materials to retain stormwater on-site.
- Design pavements and locate them in such a manner as to reduce stormwater velocity across pavements and to facilitate water infiltration into the soil.
- Capture rainwater from impervious areas of the building for groundwater recharge or reuse in the building.
- Design drainage to keep water away from the building.
- Design roof drainage to direct water to dry-wells, cisterns, or into landscape infiltration/detention areas.
- While preparing the Stormwater Pollution Prevention Plan for the project, identify appropriate stormwater pollution prevention measures and BMPs to reduce pollutants in stormwater discharges from the site both during construction and after construction is completed.
- Specify systems that retain and treat stormwater on the site. For erosion and sediment control BMPs and their design, refer to the *California Stormwater Best Management Practice Handbook for Construction Activity*.
- Prevent soil erosion before, during, and after construction by controlling stormwater runoff and wind erosion. Consider silt fencing, sediment traps, construction phasing, stabilization of slopes, and maintaining and enhancing vegetation and groundcover.
- Do not grade in the winter.
- Protect hillsides using adequate erosion control measures such as hydro seeding, erosion control blankets, and/or sedimentation ponds to collect runoff.
- Monitor all erosion control measures before, during, and after a storm.
- Educate the occupants, and train the operations and maintenance staff on the stormwater management strategies and systems.
- Provide an operating manual for stormwater management.

(3) Groundwater Quality. The Basin Plan identifies groundwater underlying the project site as having the following beneficial uses: municipal and domestic water supply, industrial water supply, and agricultural water supply. Based on existing regional studies, numerous water supply wells were once located in the vicinity of the project site. A 1910 map shows several wells in the vicinity of the project site.[13] The proposed project is within

[13] Figuers, S., 1998, *Groundwater Study and Water Supply History of the East Bay Plain, Alameda, and Contra Costa Counties*, June 15.

an area that is now serviced by the East Bay Municipal Utility District (EBMUD) for its water source. There was no information available that indicated that there are any existing private or public wells still in use within the project area.[14]

A preliminary geotechnical investigation prepared for the project notes that based on site-specific test, previous investigations in the vicinity, and site topography, groundwater is expected at a depth of approximately one to seven feet below the ground surface (bgs).[15] The potential for the presence of contamination in the underlying groundwater associated with historic industrial activity is discussed in Section IV.I, Hazards and Hazardous Materials, of this DEIR.

d. Regulatory Setting. The following describes the City of Oakland regulatory setting as it relates to hydrology.

(1) Oakland General Plan Objectives and Policies. The following and policies pertaining to hydrology and water quality are from the Oakland General Plan Safety Element or Open Space, Conservation, and Recreation (OSCAR) Element:

- Policy FL-1: Enforce and update local ordinances, and comply with regional orders, that would reduce the risk of storm-induced flooding.
- Policy FL-2: Continue or strengthen city programs that seek to minimize the storm-induced flooding hazard.
- Policy FL-3: Seek the cooperation and assistance of other government agencies in managing the risk of storm-induced flooding.
- Policy FL-4: Minimize further the relatively low risks from non-storm-related forms of flooding.

The OSCAR includes the following Hydrology objective and policies:

- Policy CO-5.1: Encourage groundwater recharge by protecting large open space areas, maintaining setbacks along creeks and other recharge features, limiting impervious surfaces where appropriate, and retaining natural drainage patterns within newly developing areas
- Policy CO5-2: Improvements to Groundwater Quality. Support efforts to improve groundwater quality, including the use of non-toxic herbicides and fertilizers, the enforcement of anti-litter laws, the clean-up of sites contaminated by toxics, and on-going monitoring by the Alameda County Flood Control and Water Conservation District.

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[14] Department of Water Resources, 2007, Well Search Results, http://wdl.water.ca.gov/gw/hyd/nearbysearch_CF.cfm accessed July 13.

[15] Geomatrix, Inc., 2004, *Preliminary Geotechnical Evaluation, Proposed MacArthur BART Transit Village, Oakland, California,* Prepared for Aegis Realty Partners, Oakland, Ca., 18 November, Project No. 9923.000.

(2) City of Oakland Municipal and Planning Codes. Some applicable chapters and amendments of the City of Oakland Municipal and Planning codes regarding Hydrology and Water Quality include:

- Chapter 13.16.010, City of Oakland Creek Protection Storm Water Management and Discharge Control Ordinance. The Oakland Municipal Code prohibits activities that will result in the discharge of pollutants to Oakland's waterways (including the storm water system) or the damaging of creeks, creek functions, or habitat. The ordinance requires the use of standard Best Management Practices to prevent pollution or erosion to creeks and/or storm drains. Additionally, a creek protection permit is required for any construction work on creek side properties.
- 13.16.020 Purpose and intent. The purpose of this chapter is to ensure the future health, safety, and general welfare of city citizens by:

  A. Eliminating non-storm-water discharges to the municipal separate storm sewer;

  B. Controlling the discharge to municipal separate storm sewers from spills, dumping or disposal of materials other than storm water;

  C. Reducing pollutants in storm water discharges to the maximum extent practicable;

  D. Safeguarding and preserving creeks and riparian corridors in a natural state;

  E. Preserving and enhancing creekside vegetation and wildlife;

  F. Preventing activities that would contribute significantly to flooding, erosion or sedimentation, or that would destroy riparian areas or would inhibit their restoration;

  G. Enhancing recreational and beneficial uses of creeks;

  H. Controlling erosion and sedimentation;

  I. Protecting drainage facilities; and

  J. Protecting the public health and safety, and public and private property.

  The intent of this chapter is to protect and enhance the water quality of our watercourses, water bodies, and wetlands in a manner pursuant to and consistent with the federal Clean Water Act. (Ord. 12024 § 1 (part), 1997)
- Chapter 15.04, Oakland Amendments to the California Model Building Codes. This chapter of the Oakland Municipal Code shall be known as the "Oakland Amendments of the 2001 edition of the California Building Standards Code, Part 2 (California Building Code), Part 4 (California Mechanical Code), and Part 5 (California Plumbing Code), and the 2004 edition of the California Building Standards Code, Part 3 (California Electrical Code)." These amendments expand on or supersede the requirements of the California Model Building Code and will be applicable to the proposed project. Buildings and structures regulated by this Code shall be so arranged, assembled, installed, maintained and of sufficient size and so protected as to reduce and minimize all egress, fire, safety, and health hazards.

Amendments to the City of Oakland Municipal and Planning Codes extend or supersede existing codes to further ensure the future health, safety, and general welfare of the public. The applicable amendments that pertain to this project include, but are not limited to:

- 15.04.780 CBC Appendix Chapter 33 deleted and replaced. Delete CBC Appendix Chapter 33 and insert Ordinance 10446 C.M.S., Erosion and Sedimentation, with revisions as follows: Section 3304 – Grading, Excavation and Fills.
- Chapter 15.04.780, Section 3304 – Grading, Excavation and Fills. The Grading Ordinance requires a permit for projects that exceed certain criteria. Subsection 3304.2 defines the terms under which a grading permit will be required. A partial list of criteria under which a permit would be require includes:
  - The volume of excavation or fill will exceed 50 cubic yards provided the vertical distance between the top and bottom of excavation or fill will exceed 5 feet at any location
  - An excavation or fill exceeding 5 cubic yards within 15 horizontal feet of any property line if the bottom of such excavation is below a line descending at a rate of slope of two to one from the existing ground surface at such property line
  - The volume of excavation or fill will exceed 500 cubic yards on a parcel or contiguous parcels
  - Grading, clearing or grubbing, or land disturbance activity that involves an area of one (1) acre or more.

  The project as proposed includes 10 parcels totaling of approximately 8.4 acres. The majority of the site is occupied by a sub-grade parking lot, but also includes several buildings to be demolished. Construction of five new buildings is proposed along with development of internal streets and other improvements. The buildings would be up to 65 feet in height with a single sublevel of parking garages.

(3) City of Oakland Uniformly Applied Development Standards. The City's Standard Conditions of Approval relevant to this impact topic are listed below for reference. The conditions of approval will be adopted as requirements of the proposed project if the project is approved by the City to help ensure no significant impacts (for the applicable topic) occur, as a result they are not listed as mitigation measures.

COA HYDRO-1 (same as COA GEO-1): Erosion and Sedimentation Control Plan. *Prior to any grading activities.*

a) The project applicant shall obtain a grading permit if required by the Oakland Grading Regulations pursuant to Section 15.04.780 of the Oakland Municipal Code. The grading permit application shall include an erosion and sedimentation control plan. The erosion and sedimentation control plan shall include all necessary measures to be taken to prevent excessive stormwater runoff or carrying by stormwater runoff of solid materials on to lands of adjacent property owners, public streets, or to creeks as a result of conditions created by grading operations. The plan shall include, but not be limited to, such measures as short-term erosion control planting, waterproof slope covering, check dams, interceptor ditches, benches, storm drains, dissipation structures, diversion dikes, retarding berms and barriers, devices to trap, store and filter out sediment, and stormwater retention basins. Off-site work by the project applicant may be necessary. The project applicant shall obtain permission or easements necessary for off-site work. There shall be a clear notation that the plan is subject to changes as changing conditions occur. Calculations of anticipated stormwater runoff and sediment volumes shall be included, if required by the Director of Development or designee.

The plan shall specify that, after construction is complete, the project applicant shall ensure that the storm drain system shall be inspected and that the project applicant shall clear the system of any debris or sediment.

Ongoing throughout grading and construction activities.

b) The project applicant shall implement the approved erosion and sedimentation plan. No grading shall occur during the wet weather season (October 15 through April 15) unless specifically authorized in writing by the Building Services Division.

COA HYDRO-2: Stormwater Pollution Prevention Plan (SWPPP). *Prior to and ongoing throughout demolition, grading, and/or construction activities.* The project applicant must obtain coverage under the General Construction Activity Storm Water Permit (General Construction Permit) issued by the State Water Resources Control Board (SWRCB). The project applicant must file a notice of intent (NOI) with the SWRCB. The project applicant will be required to prepare a stormwater pollution prevention plan (SWPPP). At a minimum, the SWPPP shall include a description of construction materials, practices, and equipment storage and maintenance; a list of pollutants likely to contact stormwater; site-specific erosion and sedimentation control practices; a list of provisions to eliminate or reduce discharge of materials to stormwater; Best Management Practices (BMPs), and an inspection and monitoring program. Prior to the issuance of any construction-related permits, the project applicant shall submit a copy of the SWPPP and evidence of approval of the SWPPP by the SWRCB to the Building Services Division. Implementation of the SWPPP shall start with the commencement of construction and continue though the completion of the project. After construction is completed, the project applicant shall submit a notice of termination to the SWRCB.

COA HYDRO-3: Post-Construction Stormwater Pollution Management Plan. *Prior to issuance of building permit (or other construction-related permit.* The applicant shall comply with the requirements of Provision C.3 of the National Pollutant Discharge Elimination System (NPDES) permit issued to the Alameda Countywide Clean Water Program. The applicant shall submit with the application for a building permit (or other construction-related permit) a completed Stormwater Supplemental Form for the Building Services Division. The project drawings submitted for the building permit (or other construction-related permit) shall contain a stormwater pollution management plan, for review and approval by the City, to limit the discharge of pollutants in stormwater after construction of the project to the maximum extent practicable.

a) The post-construction stormwater pollution management plan shall include and identify the following:
   - All proposed impervious surface on the site;
   - Anticipated directional flows of on-site stormwater runoff; and
   - Site design measures to reduce the amount of impervious surface area and directly connected impervious surfaces; and
   - Source control measures to limit the potential for stormwater pollution; and
   - Stormwater treatment measures to remove pollutants from stormwater runoff.

b) The following additional information shall be submitted with the post-construction stormwater pollution management plan:

- Detailed hydraulic sizing calculations for each stormwater treatment measure proposed; and
- Pollutant removal information demonstrating that any proposed manufactured/ mechanical (i.e., non-landscape-based) stormwater treatment measure, when not used in combination with a landscape-based treatment measure, is capable or removing the range of pollutants typically removed by landscape-based treatment measures.

All proposed stormwater treatment measures shall incorporate appropriate planting materials for stormwater treatment (for landscape-based treatment measures) and shall be designed with considerations for vector/mosquito control. Proposed planting materials for all proposed landscape-based stormwater treatment measures shall be included on the landscape and irrigation plan for the project. The applicant is not required to include on-site stormwater treatment measures in the post-construction stormwater pollution management plan if he or she secures approval from Planning and Zoning of a proposal that demonstrates compliance with the requirements of the City's Alternative Compliance Program.[16]

Prior to final permit inspection. The applicant shall implement the approved stormwater pollution management plan.

COA HYDRO-4: Maintenance Agreement for Stormwater Treatment Measures. *Prior to final zoning inspection.* For projects incorporating stormwater treatment measures, the applicant shall enter into the "Standard City of Oakland Stormwater Treatment Measures Maintenance Agreement," in accordance with Provision C.3.e of the NPDES permit, which provides, in part, for the following:

- The applicant accepting responsibility for the adequate installation/construction, operation, maintenance, inspection, and reporting of any on-site stormwater treatment measures being incorporated into the project until the responsibility is legally transferred to another entity; and
- Legal access to the on-site stormwater treatment measures for representatives of the City, the local vector control district, and staff of the Regional Water Quality Control Board, San Francisco Region, for the purpose of verifying the implementation, operation, and maintenance of the on-site stormwater treatment measures and to take corrective action if necessary. The agreement shall be recorded at the County Recorder's Office at the applicant's expense.

[16] Alternative Compliance Programs: Under the terms of the Municipal Stormwater permit granted by the Water Board, participating agencies may establish a program under which a project proponent may request alternative stormwater compliance. A proponent must show the impracticability of on-site treatment and commit to treating off-site an equivalent surface area, pollutant load or quantity of stormwater runoff; or, provide other equivalent water quality benefit, such as stream restoration or other activities that limit or mitigate impacts.

2. Impacts and Mitigation Measures

This section analyzes the impacts related to hydrology and water quality that could result from implementation of the proposed project. This subsection presents criteria of significance, which establish the thresholds for determining whether a project impact is significant. The latter part of this subsection presents less-than-significant impacts, the potential significant hydrology and storm drainage impacts associated with the proposed project, and mitigation measures to reduce the impacts to a less-than-significant level.

a. Criteria of Significance. The project would have a significant impact on the environment if it would:

- Violate any water quality standards or waste discharge requirements.
- 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 proposed uses for which permits have been granted).
- Result in substantial erosion or siltation on- or off-site that would affect the quality of receiving waters.
- Result in substantial flooding on- or off-site.
- Create or contribute substantial runoff which would exceed the capacity of existing or planned stormwater drainage systems.
- Create or contribute substantial runoff which would be an additional source of polluted runoff.
- Otherwise substantially degrade water quality.
- 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.
- Place within a 100-year flood hazard area structures which would impede or redirect flood flows.
- Expose people or structures to a substantial risk of loss, injury or death involving flooding.
- Result in inundation by seiche, tsunami, or mudflow.
- 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.

- 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.

b. Less-than-Significant Impacts. The following is a discussion of less-than-significant hydrology and water quality impacts associated with the proposed project.

(1) Erosion. The project site is largely covered with impervious surfaces (pavement and buildings). Currently, most of the rainfall at the site encounters the impervious surfaces, travels by sheetflow to collectors set into the paved areas, adjacent buildings and to curb drains at the periphery of the site, and from there into the City-maintained storm drain system. During the demolition, clearing, grading and construction of the proposed project, activities such as excavation, soil stockpiling, soil disturbance and construction operations may result in circumstances exposing soil to rainfall, running water due to dewatering operations, and/or soil wetting for the purpose of dust control. These conditions would result in mobilization of soil and sediment, and the resulting erosion could be carried to stormwater drains or off-site to public streets and sidewalks, or adjacent properties.

The City of Oakland Municipal Code Chapter 13.16 and Section 15.04.780 require that a project applicant prepare a grading plan for the proposed project if during project construction the volume of the excavated fill material would exceed 50 cubic yards and involve depths of excavation that exceed five feet, the project applicant must prepare a grading plan, erosion and sedimentation control plan, and drainage plan.

1. The required plan shall include drainage, erosion, and sediment control measures and incorporate construction Best Management Practices (BMPs) to prevent pollutants from entering the storm sewer to the maximum extent practicable.
2. The grading plan shall discuss existing, temporary, and final drainage facilities. Erosion and sediment control must combine interim and permanent measures to minimize erosion, storm water runoff, and sedimentation. Such measures, at a minimum, shall include provision of filter materials at the catch basin to prevent debris or dirt from flowing into the storm drain system. According to the City Public Works Agency, such filter materials shall be applied to batch basins within private areas. As proposed by the project, filter protection at catch basins and inlets will include filter fabric covering the

grates, straw bales or wattles circling the inlet, or some combination of these and/or other measures.

3. The plan shall specify that, after construction is complete, the project applicant shall ensure that the storm drain system shall be inspected and that the project applicant shall clear the system of any debris or sediment.

Compliance with City's Erosion and Sedimentation Control Plan Standard Condition of Approval (see COA HYDRO-1 on page 318) and this Grading Permit requirement would ensure less-than-significant erosion impacts.

(2) Water Quality Standards. Activities proposed by the project would include two phases that could result in impacts to water quality, construction and operation. These two phases are described below.

Construction Period. The proposed project would require demolition, remediation, excavation, grading and construction, all of which require temporary disturbance of surface soils. During the construction period, grading and excavation activities would result in exposure of soil to runoff, and the discharge of dewatered groundwater from excavations, potentially causing erosion and entrainment of sediment in the runoff. Soil stockpiles and excavated areas on the project site would be exposed to runoff and, if not managed properly, the runoff could cause erosion and increased sedimentation and pollutants in stormwater. The potential for chemical releases is present at most construction sites given the types of materials used, including fuels, oils, paints, and solvents. Once released, these substances could be transported to San Francisco Bay in stormwater runoff, dewatering effluent, wash water, and dust control water, and could potentially reduce water quality. Deposition of sediments from the project could impact aquatic habitat and other beneficial uses of receiving waters.

Compliance with the City's Stormwater Pollution Prevention Plan Standard Condition of Approval (see COA HYDRO-2 on page 319), Grading Permit requirements and the NPDES General Construction Activity permit administered by the State Water Resources Control Board and the City of Oakland Municipal Code section 13.16.100[17] would be required. These programs and ordinances require that the City and/or its designated contractors mitigate potential construction-period water quality impacts for applicable projects. The City and/or its designated contractors would be required to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP incorporates construction period Best Management Practices (BMPs) and Post-Construction Storm Water Management methods including Site Planning Controls, Non-Storm Water Management, and Maintenance, Inspection and Repair of structural controls in perpetuity. Compliance with existing

[17] City Of Oakland Creek Protection, Storm Water Management and Discharge Control Ordinance.

regulations would result in this potentially significant impact being reduced to less than significant.

Operation Period. The proposed project would result in the construction of new buildings and streets. Sources of urban pollutants, including spills and leaks associated with automobiles, would accompany this new development. These sources may contribute petroleum hydrocarbons, heavy metals, and sediment to the pollutant load in runoff discharged to receiving waters. Runoff from landscaped areas may contain residual pesticides and nutrients. Runoff eventually enters San Francisco Bay, a water body listed as impaired by the Water Board. The Water Board has designated San Francisco Bay as water quality impaired for several pesticides (chlordane, DDT, diazinon, and dieldrin), dioxin compounds, exotic species, furan compounds, mercury, PCBs, and selenium,[18] and the Water Board has determined that the assimilative capacity of the San Francisco Bay for these pollutants has already been exceeded.

Most contaminants that have been identified as causing the water quality impairment of the Bay are unlikely to be used at the proposed project site. Each of the pesticides (chlordane, DDT, diazinon, and dieldrin) has been banned for non-agricultural use and is therefore not available for legal use at the component sites. The source of the dioxin and furan compounds has been identified as atmospheric deposition. The proposed project would not alter the rate of atmospheric deposition, and therefore not change the current loading rate of these compounds. The proposed project would not introduce exotic species to the Bay or increase the impact of existing exotic species. Mercury would not be used at the site and this project would not be expected to generate discharges of this contaminant. The selenium impairment has been caused by industrial point sources, natural sources, and exotic species; increases in selenium loading would not be expected based on the proposed land uses.

The existing NPDES program requires that any project creating 10,000 square feet of new impervious surface or more treat runoff prior to discharge using BMPs. The amount of runoff that is typically required to be treated is about 80 to 85 percent of the total average annual runoff from the site (depending on whether a volume-based or flow-based method is used). In general, passive, low-maintenance BMPs (e.g., grassy swales, porous pavements, and stormwater planters) are preferred. Under the existing programs, the City would ensure that the project design includes features and operational BMPs to reduce potential impacts to surface water quality associated with operation of the project to the maximum extent practicable. Compliance with the terms of the City's Post-Construction Stormwater Pollution Management Plan Standard Condition of Approval and Maintenance Agreement for Stormwater Treatment Measures Condition of Approval (see COAs HYDRO-3 and HYDRO-4

[18] RWQCB, 2003, op. cit.

on pages 319 to 320) associated with regulatory agency-approved plans, as detailed above, would ensure that this impact would be less than significant.

(3) City of Oakland Creek Protection, Storm Water Management and Discharge Control Ordinance. The City of Oakland's Stormwater Ordinance was updated in 1997 to provide new and stronger provisions to safeguard and manage creeks. It is now called the "Creek Protection, Stormwater Management and Discharge Control Ordinance," and includes permitting guidelines for development and construction projects taking place on a creekside property. The nearest creek or riparian corridor to the project site is the Broadway Branch of Glen Echo Creek, which is approximately 0.4 miles to the southeast of the site. The project site is not a Creekside Property as defined by the ordinance.

Nevertheless, projects exempt from the Creek Protection Permit requirement are subject to comply with the remaining portions of the ordinance and must incorporate site design/landscape characteristics which maximize infiltration (where appropriate), provide retention or detention, slow runoff, and minimize impervious land coverage (i.e., use hydrologic source controls) to the maximum extent practicable. This would be ensured by compliance with the terms of the City's Creek Protection, Stormwater Management and Discharge Control Ordinance.[19]

(4) Hydromodification. On March 14, 2007, the Water Board issued Order No. R2-2007-0025 (NPDES Permit No. CAS0029831), an amendment revising Order No. R2-2003-0021. This order adopts the revised hydrograph modification management provisions and includes by reference the ACCWP countywide Hydrograph Modification Management Plan (HMMP) of May 15, 2005.[20] The HMMP standard is intended to ensure that new projects in Alameda County, including within the City of Oakland, do not increase erosion. A new development or redevelopment project in which the combined amounts of impervious surface created and replaced totals 1 acre or more is required to comply with the Water Board Order's hydromodification standard and the ACCWP HMMP unless it falls into one of several exempt categories.

Examples of exempt projects include single-family homes; transit village redevelopments; and sidewalks, bicycle lanes, trails, bridge accessories, guardrails, and landscape features associated with streets, roads, highways, or freeways. Exemptions are also provided for projects in areas near the Bay that are tidally influenced or subject to sediment deposition, and projects served by hardened stormwater conduits. The proposed project site is not within an area mapped as being susceptible to hydromodification and is serviced by

[19] Oakland Municipal Code, 2008, Chapter 13.16 C Creek Protection, Stormwater Management and Discharge Control Ordinance. Accessed 1/11/2008 at: http://bpc.iserver.net/codes/oakland/.

[20] The Alameda County Public Works Agency, 2005. *Hydrograph Modification Management Plan.* ACCWP, 15 May.

hardened stormwater conveyance; hence, the proposed project is exempt from the HMMP requirements.

(5) Depletion of Groundwater Resources. The proposed project may remove groundwater during the construction phase as part of the dewatering activities for foundation construction. The site-specific geotechnical report recommends the installation of a foundation system consisting of either: (1) mat foundations; (2) driven concrete piers; or (3) rammed aggregate piers (Geopiers). Subsurface mat foundations may result in construction period dewatering being necessary; however, once installation and water proofing are completed, dewatering activity would no longer be necessary.[21] In addition, the site is served by local water utility services, and local groundwater would not be used as a water supply source. Therefore, removal of groundwater resources associated with the proposed project would be transitory and not expected to significantly impact the local or regional use or availability of groundwater.

(6) Flood-Related Hazards. According to the most recent FEMA mapping for the project site, the proposed project is not located within the 100- or 500-year flood hazard zone, and therefore, no placement of housing or other structures in a flood hazard zone would occur at the site. Additionally, the project site is not located within a mapped dam failure inundation zone.

(7) Alteration of the Course of a Stream or River. Drainage patterns at the site would be locally modified and the amount of impervious cover is expected to change; however, no waterways cross the project site and the project would not alter the course of an established stream or river. This is a less than significant impact.

(8) Coastal Hazards, Including Seiche. The location of the project site, at an elevation of greater than 65 feet NGVD, would be expected to provide adequate protection from tsunamis, extreme high tides, seiche, and sea level rise, all of which tend to present hazards for sites at elevations lower than ten feet NGVD. [22,23,24,25,26] This is therefore a less-than-significant impact.

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[21] Geomatrix, 2004, op. cit.

[22] Houston, J. R., Garcia, A. W., 1975, Type 16 Flood Insurance Study: Tsunami Predictions for Monterey and San Francisco Bays and Puget Sound, Technical Report H-75-17, November.

[23] Ritter, J., Dupre, W., 1972. Maps Showing Areas of Potential Inundation of Tsunamis in the San Francisco Bay Region, California, Department of the Interior, U.S. Geological Survey, Misc. Field Studies, MF480.

[24] United States Army Corps of Engineers, 1984. San Francisco Bay Tidal Stage vs. Frequency Study, October.

[25] U.S. EPA, 1995. The Probability of Sea Level Rise, EPA 230-R-95-008, October.

c. **Significant Impacts**. The City's Standard Conditions of Approval require that regulations and specifications set forth under the applicable NPDES, City of Oakland Creek Ordinance, and City of Oakland Grading Permit requirements to be implemented for the proposed project. Based on the information and analysis in this section and adherence to these requirements, the project will not result in any significant impacts related to hydrology or water quality from the proposed project.

d. **Cumulative Hydrology and Water Quality Impacts.** The geographic area considered for the hydrology and water quality cumulative analysis consists of the area within the City of Oakland whose storm sewers discharge to the San Francisco Bay.

Stormwater runoff entering the storm sewers within the project's geographic area discharge to the San Francisco Bay. The stormwater contains urban-type pollutants from past, present and existing projects in the sewered area, which have contributed to impairment of the quality of the San Francisco Bay. Applicable stormwater regulations have become progressively more rigorous since the adoption of the Federal Clean Water Act in 1977, with the derivative requirements imposed and enforced by the State Water Resources Control Board and Regional Water Boards through the NPDES permitting process. Stormwater runoff from past, present and existing development is treated in accordance with NPDES requirements. These requirements have resulted in polices and regulations, incrementally strengthened by a series of amendments and adopted by Water Board Orders, mandating greater levels of protection to water quality for past, present, existing and current projects. Recently approved, currently pending and future projects, including the proposed project, would continue to discharge stormwater during construction and operation of these projects. However, these future projects, replacing existing land uses, would be subject to current and any subsequent NPDES permitting requirements, which are periodically updated and amended to further reduce pollutant loading in the stormwater runoff. Therefore, no significant adverse impacts are expected from cumulative conditions because stormwater runoff quality would be expected to cumulatively improve.

[26] A seiche is a standing wave in an enclosed or partly enclosed body of water. Earthquakes may induce seiche in lakes, bays, and rivers. More commonly, wind-driven currents or tides cause seiche. The highest seiche recorded in San Francisco Bay is approximately 4 inches, and resulted from the 1906 San Francisco Earthquake.

G. GEOLOGY, SOILS AND SEISMICITY

This section describes the project site's geologic environment based on a site reconnaissance, published and unpublished regional geologic reports and maps, and a site-specific technical report. This section also assesses potential significant impacts from seismically-induced fault rupture, strong ground shaking, liquefaction, slope failure, lateral slope deformation, differential settlement, and unstable or expansive soils.

1. Setting

The following setting section describes the geologic and seismic conditions of the project site and describes applicable City policies.

a. Geologic Conditions. The geology, topography and soils of the project and vicinity are described below.

(1) Geology. The proposed project is located within the Coast Ranges Geomorphic Province, a relatively young geologically and seismically-active region on the western margin of the North American plate. The regional structure of the Coast Ranges consists of northwest trending folds and faults created by the tectonic processes of colliding plate boundaries and subsequent transitional shear along the San Andreas Fault Zone (SAFZ). As a result, the Coast Ranges comprise a series of discontinuous north-west trending mountain ranges and ridges composed primarily of sedimentary bedrock with layers of recent alluvium filling the intervening valleys.[1] The layer of near-surface deposits at the project site is mapped as Late Pleistocene alluvium. These poorly sorted stream deposits are between 10,000 and 70,000 years old, weakly consolidated, slightly weathered, with a maximum thickness of at least 150 feet, and a wedge shaped profile, thinning towards the East Bay Hills.[2] Overlaying this is a surface layer of Holocene alluvium.[3]

The site-specific preliminary geotechnical evaluation included reviewing subsurface boring information from available previous studies located near the project site as well as six cone penetration test (CPT) conducted within the project site. The nearest of the off-site borings, approximately located at the base of the State Route 24 embankment slope at the 40th Street undercrossing, was drilled to a depth of about 52 feet below ground surface (bgs). This boring encountered soft to stiff clays to approximately 20 feet bgs, a 5-foot layer of loose to very loose clayey sand/sandy silt with gravel, and below this, very dense to dense silty sandy gravel and hard sandy gravelly clay to the termination of drilling. The on-site CPT

[1] California Geographic Survey (CGS), 2002, California *Geomorphic Provinces, Note 36.*

[2] Helley, E. J., Lajoie, K. R., 1979 (reprinted 1991), *Flatlands deposits of the San Francisco Bay Region* (with maps), USGS Professional Paper 943, jointly by DOI, HUD, USGS.

[3] USGS, 2006, Geologic Map of Alameda County, CA, USGS Scientific Investigations Map 2918.

borings were conducted to a depth of approximately 50 feet. The CPT data indicated that the site was generally underlain by interbedded soft to stiff silty to sandy clays and medium dense to very dense sandy silt to silt. Thin lenses of sand were encountered in four of the borings at a depth of 24 to 32 feet. The results of the CPT were noted to be similar to the results of the earlier off-site investigations.[4]

(2) Topography. The project site is 8.2 acres. In general, the area of the project is relatively flat and slopes gently to the south, with 40th Street having an elevation of approximately 78 feet above mean sea level (msl) and West MacArthur Boulevard at approximately 70 feet msl. Within the project site, the existing BART parking lot is nearly flat, with an elevation difference across the lot of 1-foot or less. The parking lot is set below the level of the adjacent streets, with an elevation of approximately 65 feet msl (except for a section of road that connects the lot with West MacArthur Boulevard). At 40th Street the lot is approximately 13 feet below the street grade at the south side of the lot. In places, slopes or retaining walls of 3 to 4 feet edge the parking lot, with adjacent properties at the elevation of the surrounding streets.

(3) Soils. Surface soils of the project site are mapped by the Natural Resource Conservation Service (NRCS) as Urban land – Danville complex, a mix of about 60 percent Urban land and 30 percent Danville with the remainder being Botella loam, Clear Lake clay and Tierra loam.[5] The Urban Land category is a description for man-made materials and land, usually already developed and covered by paving and structures, and consisting of heterogeneous fills of (generally) unknown origin. Danville soil is a deep soil with slow permeability, high shrink-swell potential and low strength. The NRCS does not assign capability classification values for describing engineering constraints for the Urban land – Danville Complex type soils.

b. Seismic Conditions. Regional and site-specific seismicity are described in the following section.

(1) Regional Seismicity. The entire San Francisco Bay Area is located within the San Andreas Fault Zone (SAFZ), a complex of active faults forming the boundary between the North American and Pacific lithospheric plates. Movement of the plates relative to one another result in the accumulation of strain along the faults, which is released during earthquakes. Numerous moderate to strong historic earthquakes have been generated in northern California by the SAFZ. The level of active seismicity results in classification of the

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[4] Geomatrix, Inc., 2004, *Preliminary Geotechnical Evaluation, Proposed MacArthur BART Transit Village, Oakland, California,* Prepared for Aegis Realty Partners, Oakland, Ca., 18 November, Project No. 9923.000.

[5] Natural Resources Conservation Services (NRCS), 2007, Soil *Survey Of Alameda County, California, Western Part.* Source of Map: Natural Resources Conservation Service Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov.

area as seismic risk Zone 4 (the highest risk category) in the California Building Code. The SAFZ includes numerous faults found by the California Geological Survey under the Alquist-Priolo Earthquake Fault Zoning Act (A-PEFZA) to be "active" (i.e., to have evidence of fault rupture in the past 11,000 years). Regional active faults are shown on Figure IV.G-1.

The U.S. Geological Survey's Working Group on California Earthquake Probabilities estimates that there is a 62 percent probability that one or more Moment Magnitude (M_w) 6.7 [6] or greater earthquakes will occur in the San Francisco Bay Area between 2002 and 2031. The probability of a M_w 6.7 magnitude or greater earthquake occurring along individual faults was estimated to be 21 percent along the San Andreas Fault, 27 percent along the Hayward Fault, 11 percent along the Calaveras Fault, 4 percent along the Concord-Green Valley Fault, 10 percent along the San Gregorio Fault, 3 percent on the Greenville Fault, and 3 percent for the Mt. Diablo Thrust Fault. In addition, there is a cumulative 14 percent chance of a background (other earthquake source, either mapped or undiscovered) event occurring. When predictions are expanded to 100 years it was estimated that about three M_w6.7 or greater events could occur during that time. Thus the probability of at least one M_w6.7 or greater magnitude earthquake rises to the near certainty of about 96 percent when calculated for a 100-year span.[7]

(2) Site-Specific Seismicity. The project is not within an Alquist-Priolo Earthquake Fault Zone; the project site is about 2.4 miles southwest of the Hayward A-PEFZA fault zone.[8] The Hayward fault is a right lateral strike-slip fault with a northwest-southeast axis,[9] and, as noted above, has a 27 percent chance of an M_w6.7 earthquake occurring between 2002 and 2031.

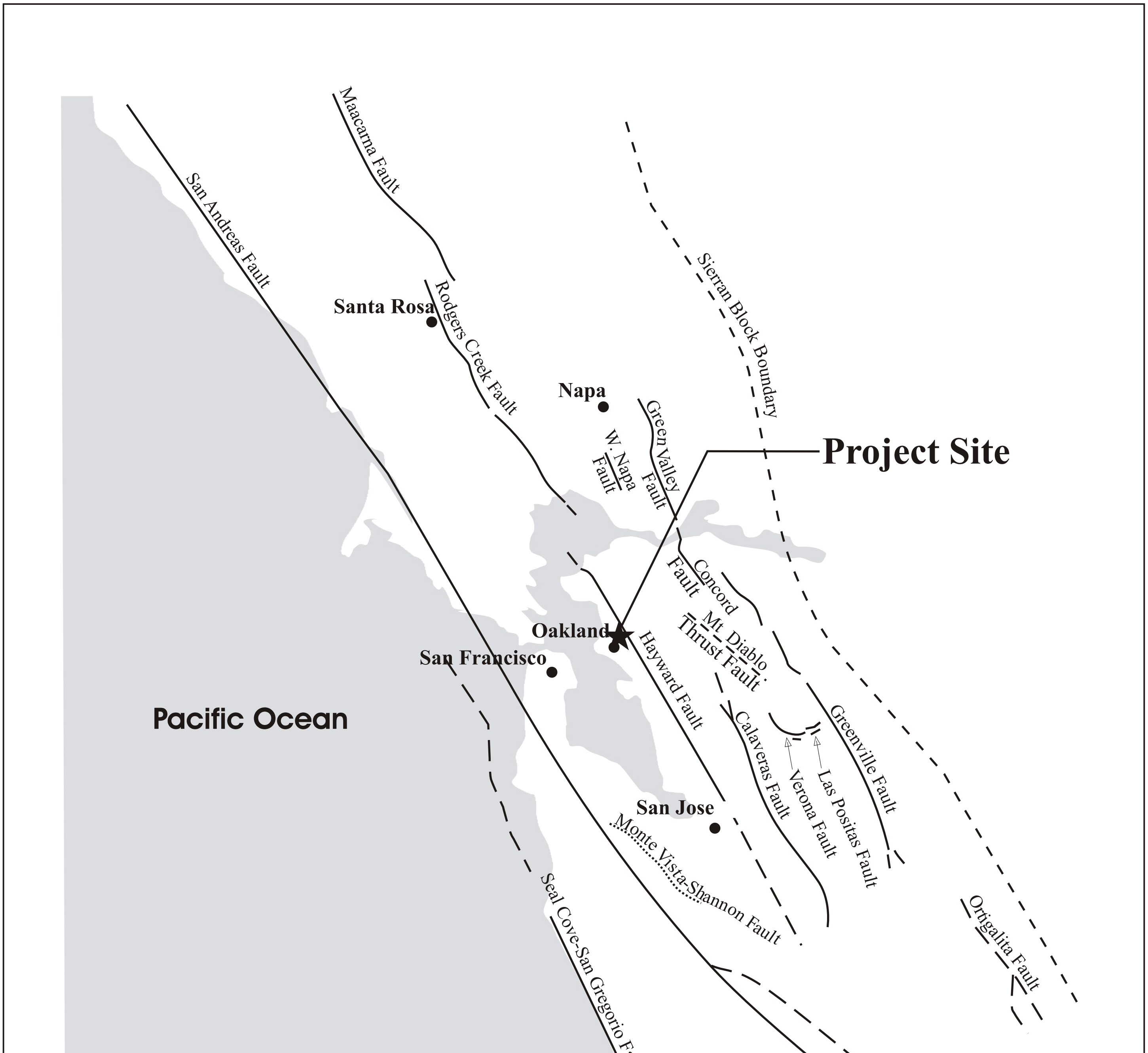
The project site is located within a California Department of Conservation Seismic Hazard Zone for liquefaction as defined by the Seismic Hazards Mapping Act. The site is not

[6] Moment magnitude (M_w) is now commonly used to characterize seismic events as opposed to Richter Magnitude. Moment magnitude is determined from the physical size (area) of the rupture of the fault plane, the amount of horizontal and/or vertical displacement along the fault plane, and the resistance to rupture of the rock type along the fault.

[7] USGS, 2003, *Earthquake Probabilities in the San Francisco Bay Region: 2002 to 2031 – A Summary of Findings*, Open File Report 03-214.

[8] California Division of Mines and Geology (CDMG), 1982, *State of California Special Studies Zones, Oakland West Quadrangle Map.*

[9] Right-lateral: if the trace of the fault were viewed while standing on one side during an event, it would appear that the ground on the other side of the fault moved to the right. Strike-slip: the sides are moving laterally relative to each other with little or no vertical movement.



Legend

Active Fault-
Fault has evidence of surface displacement within the past 11,000 years (dashed where inferred)

Potentially Active Fault-
Fault has evidence of surface displacement in the past 1.6 million years, but not within the past 11,000 years

Seismic Source Without Surface Rupture

SOURCE: BASELINE ENVIRONMENTAL., 2007

FIGURE IV.G-1

MacArthur Transit Village Project EIR
Regional Faults

mapped as being at risk for seismically induced landslide.[10] Hazard mapping by the Association of Bay Area Governments (ABAG) indicates the project site is in an area rated of moderate susceptibility and moderate hazard (susceptibility combined with likelihood) for liquefaction.[11]

c. Seismic and Geologic Hazards. Topics related to seismic and geologic hazards are described below.

(1) Surface Rupture. Surface rupture occurs when the ground surface is broken due to fault movement during an earthquake. The location of surface rupture generally can be assumed to be along an active or potentially active major fault trace. No portion of the project site is located within an Alquist-Priolo Earthquake Fault Zone and no active faults have been mapped at the project site. Therefore, potential for fault rupture at the project site is negligible.

(2) Ground Shaking. Ground shaking is a general term referring to all aspects of motion of the earth's surface resulting from an earthquake, and is normally the major cause of damage in seismic events. The extent of ground shaking is controlled by the magnitude and intensity of the earthquake, distance from the epicenter, and local geologic conditions. The Modified Mercalli Intensity Scale (MMI) is the most commonly used scale for measurement of the subjective effects of earthquake intensity (Table IV.G-1). A related concept, peak ground acceleration, is measured as a fraction or percentage of gravity (*g*).[12]

The closest active fault to the project site is the Hayward fault zone. The north and south Hayward faults together are considered capable of generating about an M_w 6.9 earthquake. An earthquake of this magnitude would generate violent to very strong seismic shaking (MMI VIII) at the project site.[13] This would constitute a potentially significant hazard.

Peak Acceleration. Estimates of the peak ground acceleration have been made for the Bay Area based on probabilistic models that account for multiple seismic sources. Under these models, consideration of the probability of expected seismic events is incorporated into the determination of the level of ground shaking at a particular location. The expected

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[10] California Geological Survey (CGS), 2003, *State of California Seismic Hazard Zones, Oakland West Quadrangle.*

[11] ABAG Earthquake Program, 2004a. *Liquefaction Hazard and Susceptibility Maps*, http://quake.abag.ca.gov/.

[12] The acceleration due to gravity, denoted *g* (also gee) is a unit of acceleration defined as approximately 32 ft/s^2, which is the acceleration due to gravity on the Earth's surface at sea level.

[13] ABAG Earthquake Program, 2004b. *Earthquake Shaking Scenario Map,* http://www.abag.ca.gov.

Table IV.G-1 Modified Mercalli Scale

Category	Description
I	Not felt except by a very few under especially favorable circumstances.
II	Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing.
III	Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibration like passing of truck. Duration estimated.
IV	During the day felt indoors by many, outdoors by few. At night some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Felt by nearly everyone, many awakened. Some dishes, windows, etc., broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop.
VI	Felt by all, many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight.
VII	Everybody runs outdoors. Damage negligible in building of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving motor cars.
VIII	Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motor cars disturbed.
IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.
X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from river banks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.
XI	Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.
XII	Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted.

Source: California Geological Survey, 2002, *How Earthquakes and Their Effects are Measured*: Note 32.

peak horizontal acceleration (with a 10 percent chance of being exceeded in the next 50 years) generated by any of the seismic sources potentially affecting the project area, including the project site, is estimated by the California Geological Survey as 0.681.[14] This level of ground acceleration at the project site is a potentially significant hazard.

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[14] California Geological Survey (CGS), 2005, *Probabilistic Seismic Hazards Mapping Ground Motion Page,* accessed 7/06/07, www.consrv.ca.gov/cgs/rghm/pshamap/pshamain.html.

(3) Liquefaction and Lateral Spreading. Liquefaction is the temporary transformation of loose, saturated granular sediments from a solid state to a liquefied state as a result of seismic ground shaking. In the process, the soil undergoes transient loss of strength, which commonly causes ground displacement or ground failure to occur. Since saturated soils are a necessary condition for liquefaction, soil layers in areas where the groundwater table is near the surface have higher liquefaction potential than those in which the water table is located at greater depths.

As mentioned above, the project is rated as a moderate liquefaction hazard area by ABAG and mapped by the state as being in a liquefaction hazard area. According to site-specific preliminary geotechnical evaluation, the depth to groundwater in the vicinity of the project site is about one to seven feet bgs; in addition, the preliminary geotechnical evaluation notes that though the areas of sandy soil that may be prone to liquefaction are discontinuous, the site is underlain by weak soils, and liquefaction may occur in limited areas during a seismic event which could lead to settlement of shallow foundations, such as spread footings.[15]

Lateral spreading is a form of horizontal displacement of soil toward an open channel or other "free" face, such as an excavation boundary. Lateral spreading can result from either the slump of low- cohesion unconsolidated material or, more commonly, by liquefaction of either the soil layer or a subsurface layer underlying soil material on a slope.[16] The lateral spreading hazard will tend to mirror the liquefaction hazard for a site, but needs an open channel or "free" face to expand into; this can include temporary excavations resulting from the construction process. Regional mapping provided by ABAG indicates the risk of liquefaction for the general area of the project to be moderate, therefore the risk of lateral spreading is considered to be moderate during construction/ excavation unless site-specific investigations would determine otherwise.[17] The site-specific preliminary geotechnical evaluation indicates that there are lenses of sandy and silty material below the level of local groundwater. These could be prone to liquefaction, and as such, may provide potential for lateral spreading into excavations, particularly utility trenches or deep foundation excavations.[18]

(4) Expansive Soils. Expansion and contraction of volume can occur when expansive soils undergo alternating cycles of wetting (swelling) and drying (shrinking). During these

[15] Geomatrix, Inc., 2004, op. cit.

[16] Rauch, Alan F., 1997, EPOLLS: An Empirical Method for Predicting Surface Displacements due to Liquefaction-Induced Lateral Spreading in Earthquakes, Ph. D. Dissertation, Virginia Tech, Blacksburg, VA.

[17] ABAG, 2004a, op. cit.

[18] Geomatrix, Inc., 2004, op. cit.

cycles, the volume of the soil changes markedly. As a consequence of such volume changes, structural damage to building and infrastructure may occur if the potentially expansive soils were not considered in project design and during construction.

The site is mapped as Urban land – Danville complex. Danville soils are rated as moderate to highly expansive.[19] Urban land (man-made fill) can be composed of varying amounts of natural soil materials, construction debris, dredging materials, municipal solid waste and other fill.[20] The NRCS does not assign engineering properties to soils of the Urban Land classification, as they are variable in content and characteristics.

(5) Slope Stability. Slope failure can occur as either rapid movement of large masses of soil ("landslide") or slow, continuous movement ("creep"). The primary factors influencing the stability of a slope are: (1) the nature of the underlying soil or bedrock; (2) the geometry of the slope (height and steepness); (3) rainfall; and (4) the presence of previous landslide deposits. Regional mapping shows that the project area is mapped as Category 1, "areas of zero to 5 percent slope that are not underlain by landslide deposits."[21]

(6) Settlement and Differential Settlement. Differential settlement or subsidence could occur if buildings or other improvements were built on low-strength foundation materials (including imported non-engineered fill) or if improvements straddle the boundary between different types of subsurface materials (e.g., a boundary between native material and fill). Although differential settlement generally occurs slowly enough that its effects are not dangerous to inhabitants, it can cause significant building damage over time. Portions of the project site that may contain loose or uncontrolled (non-engineered) fill may be susceptible to differential settlement.

The preliminary geotechnical evaluation notes the project site is blanketed by approximately 20 feet of relative weak compressible soils with zones of sandy soils, as well as the potential for urban fill to be present, and that building settlement is a potential issue at the site.[22]

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[19] NRCS, 2007, op. cit.

[20] Scheyer, J.M., and K.W. Hipple. 2005. Urban Soil Primer. United States Department of Agriculture, Natural Resources Conservation Service, National Soil Survey Center, Lincoln, Nebraska (http://soils.usda.gov/use).

[21] Nilson, Tor H., and Wright, Robert H., 1979. *Relative Slope Stability and Land-use Planning In The San Francisco Bay Region, California,* USGS Professional Paper 944, USGS & HUD, Washington D.C.

[22] Geomatrix, Inc., 2004, op. cit.

d. City of Oakland General Plan Policies. The following policies from the Safety Element[23] and the Open Space, Conservation, and Recreation (OSCAR) Element[24] of the City of Oakland General Plan specifically address soils, geology and/or seismic hazards and are applicable to the proposed project.

- Policy GE-1: Develop and continue to enforce and carry out regulations and programs to reduce seismic hazards and hazards from seismically triggered phenomena.
- Policy GE-2: Continue to enforce ordinances and implement programs that seek specifically to reduce the landslide and erosion hazards.
- Policy GE-3: Continue, enhance or develop regulations and programs designed to minimize seismically related structural hazards from new and existing buildings.
- Policy GE-4: Work to reduce potential damage from earthquakes to "lifeline" utility and transportation systems.
- Policy CO-1.1: Soil loss in new development. Regulate development in a manner which protects soil from degradation and misuse or other activities which significantly reduce its ability to support plant and animal life. Design all construction to ensure that soil is well secured so that unnecessary erosion, siltation of streams, and sedimentation of water bodies does not occur.
- Policy CO-1.2: Soil contamination hazards. Minimize hazards associated with soil contamination through the appropriate storage and disposal of toxic substances, monitoring of dredging activities, and clean up of contaminates sites. In this regard, require soil testing for development of any site (or dedication of any parkland or community garden) where contamination is suspected due to prior activities on the site.
- Policy CO-2.2: Unstable geologic features. Retain geologic features known to be unstable, including serpentine rock, areas of known landsliding, and fault lines, as open space. Where feasible, allow such lands to be used for low-intensity recreational activities.
- Policy CO-2.3: Development on filled soils. Require development on filled soils to make special provisions to safeguard against subsidence and seismic hazards.

e. City of Oakland Municipal Code. The City of Oakland Municipal Code implements ordinances designed to protect against seismic and geologic hazards, reduce soil erosion and protect water quality. These ordinances, detailed below and in the following discussions of the City of Oakland Standard Conditions of Approval, are designed to reduce erosion during grading and construction activities (grading ordinance); ensure that building plans, engineering and design are prepared by qualified individuals, fully compliant with latest

[23] City of Oakland, Adopted November 2004, *General Plan Safety Element,* accessed 7/6/07 at: www.oaklandnet.com/government/SE/Chapter3.pdf.

[24] City of Oakland, Adopted June1996, *Open Space, Conservation, and Recreation Element,* accessed 7/6/07 at: www.oaklandnet.com/government/ceda/revised/planningzoning/StrategicPlanningSection/openspace.html.

requirements and approved by appropriate agencies (amendments to the building code) and that necessary geologic conditions analysis of hazards, and appropriate mitigations are designed and implemented in compliance with state and local requirements (geologic reports). Applicable chapters regarding geology include:

- **Chapter 15.04, Oakland Amendments to the California Model Building Codes.** This chapter of the Oakland Municipal Code shall be known as the "Oakland Amendments of the 2001 edition of the California Building Standards Code, Part 2 (California Building Code), Part 4 (California Mechanical Code), and Part 5 (California Plumbing Code), and the 2004 edition of the California Building Standards Code, Part 3 (California Electrical Code)." These amendments expand on or supersede the requirements of the California Model Building Code and will be applicable to the proposed project. Buildings and structures regulated by this Code shall be so arranged, assembled, installed, maintained and of sufficient size and so protected as to reduce and minimize all egress, fire, safety, and health hazards. Amendments to the City of Oakland Municipal and Planning Codes extend or supersede existing codes to further ensure the future health, safety, and general welfare of the public.

- **Chapter 15.04.780, Section 3304 – Grading, Excavation and Fills.** The Grading Ordinance requires a permit for projects that exceed certain criteria. Subsection 3304.2 defines the terms under which a grading permit will be required. A partial list of criteria under which a permit would be required includes:

    - The volume of excavation or fill will exceed 50 cubic yards provided the vertical distance between the top and bottom of excavation or fill will exceed 5 feet at any location.

    - An excavation or fill exceeding 5 cubic yards within 15 horizontal feet of any property line if the bottom of such excavation is below a line descending at a rate of slope of two to one from the existing ground surface at such property line.

    - The volume of excavation or fill will exceed 500 cubic yards on a parcel or contiguous parcels.

    - Grading, clearing or grubbing, or land disturbance activity that involves an area of one (1) acre or more.

- The project, as proposed, includes ten parcels totaling approximately 8.4 acres. The majority of the site is occupied by a sub-grade parking lot, but also includes several buildings to be demolished. Construction of five new buildings is proposed along with development of internal streets and other improvements. The buildings would be up to 85 feet in height with a single sublevel of parking garages. Therefore, a grading permit would be required for the proposed project.

f. City of Oakland's Standard Conditions of Approval. The City of Oakland's Standard Conditions of Approval (COAs) would apply to the proposed project. The Conditions of

Approval will be adopted as requirements of the proposed project if the project is approved by the City to help ensure no significant impacts (for the applicable topic) occur, as a result they are not listed as mitigation measures.

COA GEO-1 (same as COA HYDRO-1): Erosion and Sedimentation Control Plan. *Prior to any grading activities.*

a) The project applicant shall obtain a grading permit if required by the Oakland Grading Regulations pursuant to Section 15.04.780 of the Oakland Municipal Code. The grading permit application shall include an erosion and sedimentation control plan. The erosion and sedimentation control plan shall include all necessary measures to be taken to prevent excessive stormwater runoff or carrying by stormwater runoff of solid materials on to lands of adjacent property owners, public streets, or to creeks as a result of conditions created by grading operations. The plan shall include, but not be limited to, such measures as short-term erosion control planting, waterproof slope covering, check dams, interceptor ditches, benches, storm drains, dissipation structures, diversion dikes, retarding berms and barriers, devices to trap, store and filter out sediment, and stormwater retention basins. Off-site work by the project applicant may be necessary. The project applicant shall obtain permission or easements necessary for off-site work. There shall be a clear notation that the plan is subject to changes as changing conditions occur. Calculations of anticipated stormwater runoff and sediment volumes shall be included, if required by the Director of Development or designee. The plan shall specify that, after construction is complete, the project applicant shall ensure that the storm drain system shall be inspected and that the project applicant shall clear the system of any debris or sediment.

Ongoing throughout grading and construction activities.

b) The project applicant shall implement the approved erosion and sedimentation plan. No grading shall occur during the wet weather season (October 15 through April 15) unless specifically authorized in writing by the Building Services Division.

COA GEO-2: Soils Report. *Required as part of the submittal of a Tentative Tract or Tentative Parcel Map.* A preliminary soils report for each construction site within the project area shall be required as part if this project. The soils reports shall be based, at least in part, on information obtained from on-site testing. Specifically the minimum contents of the report should include:

A. Logs of borings and/or profiles of test pits and trenches:

- a) The minimum number of borings acceptable, when not used in combination with test pits or trenches, shall be two (2), when in the opinion of the Soils Engineer such borings shall be sufficient to establish a soils profile suitable for the design of all the footings, foundations, and retaining structures.
- b) The depth of each boring shall be sufficient to provide adequate design criteria for all proposed structures.
- c) All boring logs shall be included in the soils report.

B. Test pits and trenches:

- a) Test pits and trenches shall be of sufficient length and depth to establish a suitable soils profile for the design of all proposed structures.
- b) Soils profiles of all test pits and trenches shall be included in the soils report.

C. *A plat shall be included which shows the relationship of all the borings, test pits, and trenches to the exterior boundary of the site. The plat shall also show the location of all proposed site improvements. All proposed improvements shall be labeled.*

D. *Copies of all data generated by the field and/or laboratory testing to determine allowable soil bearing pressures, sheer strength, active and passive pressures, maximum allowable slopes where applicable and any other information which may be required for the proper design of foundations, retaining walls, and other structures to be erected subsequent to or concurrent with work done under the grading permit.*

E. *Soils Report.* A written report shall be submitted which shall but is not limited to the following:

   a) Site description

   b) Local and site geology.

   c) Review of previous field and laboratory investigations for the site.

   d) Review of information on or in the vicinity of the site on file at the Information Counter, City of Oakland, Office of Planning and Building.

   e) Site stability shall be addressed with particular attention to existing conditions and proposed corrective attention to existing conditions and proposed corrective actions at locations where land stability problems exist.

   f) Conclusions and recommendations for foundations and retaining structures, resistance to lateral loading, slopes, and specifications, for fills, and pavement design as required.

   g) Conclusions and recommendations for temporary and permanent erosion control and drainage. If not provided in a separate report they shall be appended to the required soils report.

   h) All other items which a Soils Engineer deems necessary.

   i) The signature and registration number of the Civil Engineer preparing the report.

F. *The Director of Planning and Building may reject a report that she/he believes is not sufficient. The Director of Planning and Building may refuse to accept a soils report if the certification date of the responsible soils engineer on said document is more than three years old. In this instance, the Director may be require that the old soils report be recertified, that an addendum to the soils report be submitted, or that a new soils report be provided.*

COA GEO-3: Geotechnical Report. *Required as part of the submittal of a tentative Tract Map or tentative Parcel Map.*

a) A site-specific, design level, Landslide or Liquefaction geotechnical investigation for each construction site within the project area shall be required as part if this project. Specifically:

   Each investigation shall include an analysis of expected ground motions at the site from identified faults. The analyses shall be accordance with applicable City ordinances and polices, and consistent with the most recent version of the California Building Code, which requires structural design that can accommodate ground accelerations expected from identified faults.

   The investigations shall determine final design parameters for the walls, foundations, foundation slabs, surrounding related improvements, and infrastructure (utilities, roadways, parking lots, and sidewalks).

   The investigations shall be reviewed and approved by a registered geotechnical engineer. All recommendations by the project engineer, geotechnical engineer, shall be included in the final design, as approved by the City of Oakland.

The geotechnical report shall include a map prepared by a land surveyor or civil engineer that shows all field work and location of the "No Build" zone. The map shall include a statement that the locations and limitations of the geologic features are accurate representations of said features as they exist on the ground, were placed on this map by the surveyor, the civil engineer or under their supervision, and are accurate to the best of their knowledge.

Recommendations that are applicable to foundation design, earthwork, and site preparation that were prepared prior to or during the projects design phase, shall be incorporated in the project.

A peer review is required for the Geotechnical Report. Personnel reviewing the geologic report shall approve the report, reject it, or withhold approval pending the submission by the applicant or subdivider of further geologic and engineering studies to more adequately define active fault traces.

Final seismic considerations for the site shall be submitted to and approved by the City of Oakland Building Services Division prior to commencement of the project.

b) Tentative Tract or Parcel Map approvals shall require, but not be limited to approval of the Geotechnical Report.

2. Impacts and Mitigation Measures

This section analyzes the impacts related to geology, soils and seismicity that could result from the proposed project. This section begins with criteria of significance, which establishes the thresholds for determining whether a project impact is significant. The latter part of t his section presents the potential geologic, soils and seismicity impacts associated with the proposed project. Mitigation Measures are provided, as appropriate.

a. Criteria of Significance. The proposed project would have a significant impact on the environment if it would:

- 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 §2690 et. seq.);
    - Strong seismic ground shaking;
    - Seismic-related ground failure, including liquefaction, lateral spreading, subsidence, collapse; or
    - Landslides.
- Result in substantial soil erosion or loss of topsoil, creating substantial risks to life, property, or creeks/waterways;

- 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;
- Be located above a well, pit, swamp, mound, tank vault, or unmarked sewer line, creating substantial risks to life or property;
- Be located above landfills for which there is no approved closure and post-closure plan, or unknown fill soils, creating substantial risks to life or property ; or
- 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.

b. Less-than-Significant Impacts. The following section describes the less-than-significant geology, soils, and seismicity impacts.

(1) Fault Rupture and Landslides. The proposed project would not be expected to expose people or structures to substantial risk of loss, injury or death from rupture of a known earthquake fault as delineated by the State Geologist, as the site is not located within an active or potentially active fault zone as defined by the Alquist-Priolo Earthquake Fault Zoning Act. The proposed project would not be subject to substantial risk from landslides, as the site is relatively flat, and is not underlain by, or adjacent to, an area subject to slope hazards.

(2) Seismic Ground Shaking, Ground Failure, and Liquefaction. All structures in the Bay Area could potentially be affected by ground shaking in the event of an earthquake along any of the regional active faults. The amount of ground shaking depends on the magnitude of the earthquake, the distance from the epicenter, and the type of earth materials in between. Very strong (MMI VIII) ground shaking is expected at the project site during expected earthquakes on the Hayward and other regional faults. This level of seismic shaking could potentially cause structural damage in buildings at the site. Some masonry and frame structures would likely be destroyed, window glass broken, underground pipes broken, and conspicuous cracks may appear in the ground, curbs and pavement. Nonstructural effects during and following the event may include difficulty or inability to stand, general panic, unsecured furniture and appliances being overturned, panels walls thrown down, contents of cupboards and closets spilling, and temporary loss of utilities service. The level of active seismicity and potential damage results in classification of the area as seismic risk Zone 4 (the highest risk category) in the California Building Code.

The possible presence of fill and the required mitigations for project design must be included as part of the discussion of settlement and differential settlement in the required soils investigation and design-level geotechnical investigation, in accordance with the requirements of the City's Soils Report and Geotechnical Report Standard Conditions of Approval (see COAs GEO-2 and GEO-3, respectively on pages 339 to 340). Under the proposed project, surface soils at the site may be removed as part of the foundation excavation for the proposed multi-story structures. Outside the perimeter of the major area of excavation, the native soils underlying portions of the project site may exhibit high shrink/swell characteristics.[25] These materials could experience expansion and contraction in response to the amount of moisture present. Structural damage, warping, and cracking of pavements and other infrastructure, and rupture of utility lines may occur; however, these conditions and recommended geotechnical precautionary measures must be incorporated into the design-level geotechnical investigation in accordance with the requirements of the City's Geotechnical Report Standard Conditions of Approval (see COA GEO-3 on page 339) requiring that the investigation determine final design parameters for the walls, foundations, foundation slabs, surrounding related improvements, and infrastructure (utilities, roadways, parking lots, and sidewalks).

Regional mapping by ABAG and the State of California indicates moderate susceptibility to liquefaction within the project site. In addition, the preliminary geotechnical evaluation notes that the site subsurface has lenses of sandy soil that may be subject to liquefaction. Adverse effects of liquefaction can take many forms including flow failures, lateral spreads, ground oscillation, loss of bearing strength, settlement, and increased lateral pressure on retaining walls.[26] These conditions must be addressed and adequate geotechnical solutions incorporated in the site-specific design-level geotechnical investigation as required under the City's Geotechnical Report Standard Condition (see COA GEO-3 on page 340) requiring that the investigation include a site-specific, design level, landslide or liquefaction geotechnical investigation for each construction site. Final seismic considerations for the site shall be submitted to and approved by the City of Oakland Building Services Division prior to commencement of the project.

Compliance with the City of Oakland Standard and Uniformly Applied Conditions of Approval as described above reduces the potential hazards associated with seismic activity to a less-than-significant level. Seismic hazards cannot be completely eliminated even with site-specific geotechnical investigation and advanced building practices (as required above); however, the level of exposure to seismic hazards is not anticipated to be so great as to pose people or structures to substantial risk of loss, injury, or death as a result it is not considered significant.

(3) Underground Voids, Pits, Wells, Tanks, Sewer Lines, or Buried Landfills. Review of the California Department of Toxic Substances Control Envirostor Website does not indicate any landfill sites under closure proceedings, or ongoing remediation projects involving tanks within the project site or vicinity. As part of the soils investigation and

[25] NRCS, 2006, op. cit.

[26] Earthquake Engineering Research Institute (EERI), 1994, *Earthquake Basics: Liquefaction – What is it and what to do about it.*

design-level geotechnical investigation and plans required for the grading permit, as required by the City of Oakland under the terms of the Standard Conditions of Approval, plan checks, and utility service searches will verify the location or absence of these features. The proposed project is located within the City of Oakland and would use city services for potable water delivery and wastewater disposal; septic systems are not proposed. Potential impacts related to these issues are therefore less than significant.

(4) Erosion or Loss of Topsoil, and Mineral Deposits. Potential impacts associated with erosion and loss of topsoil is discussed in Section IV.F, Hydrology and Water Quality, of this DEIR. The implementation of the proposed project would not result in the loss of a known mineral resource; the project site is classified MRZ-1, "Areas where available geologic information indicates that little likelihood exists for the presence of significant mineral resources."[27,28] The proposed project would not hinder energy reserve development, as the project site is not located over a known gas, oil or geothermal field.[29]

c. Significant Impacts. The City's Standard Conditions of Approval require that all mitigation measures, design criteria, and specifications set forth in the design-level geotechnical investigation are required by to be implemented for the proposed project. Adherence to these guidelines will result in no significant impacts related to geology, soils or seismicity from the proposed project.

d. Cumulative Geology, Soils and Seismicity Impacts. Potential cumulative geology and seismic impacts do not extend far beyond a project's boundaries, since such geological impacts are typically confined to discrete spatial locations and do not combine to create an extensive cumulative impact. The exception to this generalization would occur where a large geologic feature (e.g., fault zone, massive landslide) might affect an extensive area, or where the development effects from the project could affect the geology of an off-site location. These circumstances are not present on the project site, and do not apply to the proposed project.

During the early part of the 1900s, nonprofit organizations developed model building codes used throughout the United States. Although these regional code developments were effective and responsive to regulatory needs, the time came for a single set of codes. The International Code Council (ICC) was established as a nonprofit organization dedicated to developing a single set of comprehensive and coordinated national model construction

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[27] California Department of Conservation (CDC), 1987, *Mineral Land Classification: Aggregate Materials in the San Francisco-Monterey Bay Area,* Division of Mines and Geology (DMG) Special Report 146 Part II.

[28] CDC, 1996, *Update of Mineral Land Classification, Plate 1.* DMG Open-File Report 96-03.

[29] CDC, 2000, *Energy Map of California, Third Edition,* Division of Oil, Gas or Geothermal Resources.

codes, now known as the Uniform Building Code (UBC). Within California, additional state requirements were added to the UBC to form the California Model Building Codes (CBC). Localities, such as the City of Oakland, may adopt additional amendments to the CBC through local ordinance. The trend in building codes has been increased rigor in the design and implementation requirements for geotechnical and seismic safety. These requirements, as specified by state and local regulation with the adoption of the CBC and amendments, have progressively become more rigorous in requirements mandating a greater reduction of risk to life, health, and safety, and minimized seismic risk. Many existing buildings (i.e., past projects) in the surrounding area have been built in accordance with building code requirements for geotechnical and seismic safety in effect at the time of building construction. Present and future projects within the project's geographic area are subject to these enhanced requirements and result in reduced geologic and seismic hazards. As present and future projects replace aging infrastructure and older structures with new, more rigorously regulated projects, the potential for cumulative seismic risks is incrementally reduced over time.

The Standard Conditions of Approval discussed above, including appropriate grading requirements, and compliance with the Uniform Building Code as locally amended would reduce the potential for cumulative geologic and seismic effects from the proposed project site and surrounding area. Therefore, implementation of the project together with the impact of past, present, existing, pending and reasonably foreseeable future development would not result in any significant cumulative geologic and seismic impacts. Moreover, given that the project will remove older structures and replace them with new structures that must comply with current and future building code requirements for geologic and seismic safety, the project would not make any considerable contribution to any potential cumulative impact, because it will improve geologic and seismic safety on the project site.

H. PUBLIC HEALTH AND HAZARDS

This section provides an overview of the potential presence of hazardous materials[1] and other hazards on and near the project site and assesses potential impacts to public health and safety that could result from the development of the project.

1. Setting

The following section describes hazardous materials issues at the project site as well as the regulatory agency framework and local policies that address those hazards.

a. Sources of Hazardous Materials Contamination at the Project Site. Potential hazardous materials issues at the project site were evaluated in a Phase I Environmental Site Assessment, conducted in 2002.[2] The scope of the Phase I included a site reconnaissance to visually check for hazardous materials use and contamination, review of historical land use information and available reports, review of regulatory agency databases regarding hazardous materials releases, and interviews with available individuals regarding current and historical land uses at the site.

A review of historical land use information indicated that the project site was sparsely developed with residential properties in 1902, the date of the first available records.[3] By 1912, additional commercial and residential development had taken place at and near the project site. Between 1969 and 1977, a number of buildings at the project site were demolished to accommodate State Route 24, the BART tracks, and the MacArthur BART station and parking lot. Since that time, no significant changes in land use were noted at the project site.

The Phase I identified four potential sources of hazardous material contamination at the site:

(1) Vehicle Fueling and Repair Facilities. Three gasoline stations have been located at and adjacent to the project site: 3801 Telegraph Avenue, 3875 Telegraph Avenue, and

[1] The California Health and Safety Code defines a hazardous material as "...any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety, or to the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, radioactive materials, and any material which a handler or administering agency has a reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment." (Health and Safety Code Section 25501).

[2] Subsurface Consultants, Inc. (SCI), 2002, Phase I Environmental Site Assessment, MacArthur BART Transit Village Project, Oakland, California, July 17.

[3] Ibid.

500 40th Street. In addition, a vehicle repair shop was previously located at 521-523 40th Street (currently the northern portion of the MacArthur BART parking lot), and an auto detailing shop is currently located at 3901 Telegraph Avenue. Additional automobile repair shops were noted near the project site on Telegraph Avenue, West MacArthur Boulevard, and Martin Luther King Jr. Way.[4] Gasoline stations rely on underground storage tanks (USTs) to store gasoline, diesel, and waste oil. Over time, these USTs can leak and contaminate soil and groundwater. Vehicle repair and car wash businesses often use, store, and dispose of significant quantities of waste oil and other vehicle fluids, degreasers, and related chemicals. These petroleum compounds and related volatile organic compounds (VOCs) can contaminate soil and groundwater if these hazardous materials are not properly managed.

(2) Dry Cleaners. A dry-cleaning business was historically located on the project site, at 3915 Telegraph Avenue, and adjacent to the project site, at 524 40th Street.[5] Dry cleaners use, store, and dispose of significant quantities of tetrachloroethylene (PCE), an industrial solvent. PCE and its breakdown products, such as trichloroethylene (TCE) and vinyl chloride, can contaminate soil and groundwater if the solvents are not properly stored and disposed of.

(3) Underground Fuel Oil Tanks. Although no records reviewed for the Phase I site assessment identified the presence of USTs at the project site, the Phase I concluded that previously unknown USTs used for heating oil could be present at the project site.[6] Heating oil has been used for heat and hot water in residential and commercial buildings in the past, and could have been used at and near the project site. If the heating oil USTs were not removed, they could be present and a source of contamination to soils and groundwater.

(4) Hazardous Materials Demolition Issues. Those buildings at the project site constructed prior to the 1980s and located along Telegraph Avenue and West MacArthur Boulevard may have lead and asbestos present in some form.[7] Prior to 1978, lead compounds were commonly used in interior and exterior paints. Prior to the 1980s, building materials often contained asbestos fibers, which were used to provide strength and fire resistance. Demolition of the project site buildings has the potential to release lead particles, asbestos fibers, and/or other hazardous materials to the air, where they may be inhaled by construction workers and the general public. In addition, other common items such as fluorescent lighting, thermostats, and electrical transformers can contain hazardous materials which may pose a health risk if not handled and disposed of properly.

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[4] Ibid.

[5] Ibid.

[6] Ibid.

[7] Ibid.

Fluorescent lighting tubes and ballasts and computer displays are regulated as "universal wastes" by the State of California.[8] Universal waste regulations allow common, low-hazard wastes to be managed under less stringent requirements than other hazardous wastes. Pacific Gas and Electric (PG&E), the owner of the electrical transformers at the site, would be responsible for proper removal and disposal of the transformers, if required. Proper handling and disposal of other hazardous materials would be the responsibility of the owner of the project site, who would be considered the generator of the hazardous wastes that result from removal of these items.

b. Extent of Hazardous Materials Contamination at the Project Site. The nature and extent of subsurface contamination was evaluated in a Phase II Environmental site assessment, conducted in 2005.[9] In February 2005, soil and groundwater samples were collected from 32 locations at the project site. In June 2005, soil gas samples were collected from 15 locations at the project site. Additional soil and groundwater sampling and a geophysical survey on the eastern section of the MacArthur BART parking lot were also performed in June 2005, near the areas of highest petroleum contamination identified during the February 2005 sampling.

The soil and groundwater samples were selectively analyzed for total petroleum hydrocarbons (TPH) in the gasoline, diesel, and motor oil ranges; VOCs, including benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl tertiary butyl ether (MTBE), VOCs associated with gasoline releases; polynuclear aromatic hydrocarbons (PAHs), a range of heavy hydrocarbons such as those found in coal tar; and heavy metals. The soil gas samples were analyzed for VOCs.

To evaluate potential health effects for residential land uses, concentrations in soils, groundwater, and soil gas were compared to Environmental Screening Levels (ESLs) and Preliminary Remediation Goals (PRGs). Data for groundwater samples were also compared to Maximum Contaminant Levels (MCLs) for drinking water standards. ESLs, developed by the San Francisco Bay Water Board (SFBWB), are conservative screening levels developed for use in identifying potential environmental concerns at a site. Exceedance of ESLs does not necessarily mean that materials at the site may pose a health risk, but may indicate that additional investigation and/or remediation of a site may be warranted.[10] PRGs are human

[8] Title 22, California Code of Regulations, Section 66273. Electrical switches containing mercury are proposed to be added to the universal waste list in 2006.

[9] Ninyo & Moore, 2005, Limited Phase II Environmental Site Assessment, MacArthur BART Transit Station, Oakland, California, July 20.

[10] San Francisco Bay Water Board (SFBWB), 2005. Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater, Interim Final. February

health-risk based levels developed by US EPA Region IX that are often selected as long-term targets during the evaluation and selection of remedial alternatives.[11]

The Phase II assessment identified petroleum hydrocarbons and related compounds, VOCs associated with dry cleaning solvents, and metals that were above these screening levels. The magnitude and extent of those concentrations are detailed below.

(1) Petroleum Hydrocarbons and Related Compounds. Twenty-two of 25 groundwater samples contained TPH above the ESL of 0.1 mg/L, with the highest concentration of TPH as gasoline (280 mg/L) near the former gas station site at 3875 Telegraph Avenue, and the highest concentrations of TPH as diesel (530 mg/L) and as motor oil (39 mg/L) just north of 3875 Telegraph Avenue, near the current auto detailing shop at 3901 Telegraph Avenue. Nine of 64 soil samples contained TPH above ESLs, with the highest concentrations west and north of the 3875 Telegraph Avenue site.[12]

BTEX were identified above applicable ESLs in fifteen of 31 groundwater samples. The highest concentrations were identified immediately west of 3875 Telegraph Avenue: 47 mg/L for benzene, 48 mg/L for toluene, and 6.5 mg/L for ethylbenzene, and 25 mg/L for xylenes (above the ESLs of 0.001, 0.04, 0.03, and 0.02 mg/L respectively). In soil, only one sample, from a boring immediately west of the 3875 Telegraph Avenue site, contained BTEX above applicable residential ESLs.[13]

Naphthalene, a PAH associated with coal tar, was identified above the residential ESL in seven of 25 samples, all located near the 3875 Telegraph Avenue building. Naphthalene was not identified at concentrations above laboratory reporting limits in any of the soil samples.[14]

The highest concentrations of petroleum hydrocarbons and related compounds in soils and groundwater were located in the east-central area of the project site near 3875 Telegraph Avenue. Additional areas with soil and/or groundwater concentrations above ESLs were located in the northeastern corner of the project site, near the detailing shop at 3901 Telegraph Avenue and a former gasoline station at 500 40th Street, and in the southeastern corner, near a former gasoline station at 3801 Telegraph Avenue.

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[11] United States Environmental Protection Agency Region IX, 2004. Preliminary Remediation Goals, updated October.

[12] Ninyo & Moore, 2005, *op cit.*.

[13] Ibid.

[14] Ibid.

Soil gas samples were collected from fifteen locations at the site and analyzed for VOCs, to determine if soil gases may be a potential risk to future workers and residents at the site. Benzene was detected above the residential ESL for soil gases at three of fifteen locations. No other VOCs were identified above applicable ESLs.[15]

The Phase I investigation indicated that USTs had been removed from the 3875 Telegraph Avenue site in the 1980s, although no evidence of soil or groundwater sampling at the time of UST removal was noted in available records.[16] The elevated soil and groundwater concentrations identified in this area during the February 2005 sampling suggested that an additional UST could be present, which might be a source for the contamination. Accordingly, in June 2005 a geophysical survey, using ground-penetrating radar and electromagnetic induction equipment, was performed near 3875 Telegraph Avenue to determine if an underground storage tank may be present. No indications of USTs were identified during the survey.[17]

The 3875 Telegraph site is currently being investigated under the oversight of Alameda County Department of Environmental Health (ACDEH). In August 2007, a work plan for additional investigation was submitted to ACDEH for review.[18] The additional investigation proposes the collection of soil, soil gas, and groundwater samples to further delineate the horizontal and vertical extent of the contamination identified during the 2005 Phase II investigation. Based on the findings of the additional investigation, ACDEH may require additional investigation and/or remedial action at the 3875 Telegraph site.

(2) VOCs Associated with Dry Cleaning Solvents. Three of 25 groundwater samples contained PCE, and/or the breakdown products TCE and 1,2-dichloroethene (1,2-DCE), at concentrations above applicable ESLs.[19] The locations of the samples exceeding ESLs were in the northwestern portion of the project site, near the former dry cleaners identified in the Phase I investigation. None of the soil or soil gas samples contained these solvents above applicable ESLs, suggesting that potential health risks from these compounds would be limited to direct contact and/or ingestion of the affected groundwater.

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[15] Ibid.

[16] SCI, 2002, *op cit.*.

[17] Ninyo & Moore, 2005, *op cit.*.

[18] WEST Inc., 2007, Preliminary Site Assessment/Soil, Soil Gas And Groundwater Investigation Work Plan, Former Regal Station #120, LOP Case No. RO0002875, 3875 Telegraph Avenue, Oakland, California, August 14.

[19] Ibid.

(3) Metals. Total arsenic was identified above the residential ESL of 5.5 mg/kg in 19 of 45 soil samples, with a maximum concentration of 25 mg/kg. Since soil samples containing arsenic above the ESL were located in all areas of the project site, and no potential sources of arsenic releases were identified in the Phase I report, the Phase II suggested that some or all of the arsenic in soils may be a result of naturally-occurring arsenic in site soils.[20] No other metals were identified in soils above ESLs.

Arsenic was identified above the groundwater ESL of 0.055 mg/L in eight of thirteen groundwater samples, with a maximum concentration of 0.028 mg/L, but all concentrations were below the drinking water MCL of 0.05 mg/L at the time of the Phase II investigation.[21] Copper, lead, mercury, nickel, and vanadium were also identified above applicable groundwater ESLs in at least one groundwater sample, although none of the concentrations exceeded applicable MCLs.

c. Regulatory Context. The following section provides the federal, State, and local regulatory framework for hazardous materials and waste, building materials (e.g., lead, asbestos), and worker health and safety.

The use, storage, and disposal of hazardous materials, including management of contaminated soils and groundwater, is regulated by numerous local, State, and federal laws and regulations. The U.S. Environmental Protection Agency (U.S. EPA) is the federal agency that administers hazardous materials and hazardous waste regulations. State agencies include the California EPA (Cal/EPA), which includes the California Department of Toxic Substances Control (DTSC), the State Water Resources Control Board (State Water Board), the California Air Resources Board (CARB), and other agencies. The San Francisco Bay Regional Water Quality Control Board (Water Board), the Bay Area Air Quality Management District (BAAQMD), ACDEH, and Oakland Fire Services Agency (OFSA) have jurisdiction on a regional or local level.

A description of each agency jurisdiction and involvement in the management of hazardous materials and wastes is provided below.

(1) Federal. The U.S. EPA is the federal agency responsible for enforcement and implementation of federal laws and regulations pertaining to hazardous materials and hazardous waste. The federal regulations are primarily codified in Title 40 of the Code of Federal Regulations (40 CFR). The legislation includes the Resource Conservation and Recovery Act of 1976 (RCRA), the Superfund Amendments and Reauthorization Acts of 1986 (SARA), and the Comprehensive Environmental Response, Compensation, and Liability Act of

[20] Ibid.

[21] In January 2006, a more stringent federal MCL of 0.01 mg/L for arsenic was established. Two of the thirteen groundwater samples exceeded this updated MCL.

1980 (CERCLA). The U.S. EPA provides oversight for site investigation and remediation projects, and has developed land disposal restrictions and treatment standards for the disposal of certain hazardous wastes.

(2) State. Three State agencies, described below, regulate hazardous materials and waste applicable to the proposed project.

Department of Toxic Substances Control. In California, DTSC is authorized by U.S. EPA to enforce and implement federal hazardous materials laws and regulations. California regulations pertaining to hazardous materials are equal to or exceed the federal regulation requirements. Most State hazardous materials regulations are contained in Title 22 of the California Code of Regulations (CCR). DTSC generally acts as the lead agency for soil and groundwater cleanup projects that affect public health, and establishes cleanup levels for subsurface contamination that are equal to, or more restrictive than, federal levels. DTSC has also developed land disposal restrictions and treatment standards for hazardous waste disposal in California.

State Water Resources Control Board. The State Water Board enforces regulations on how to implement underground storage tank (UST) programs. It also allocates monies to eligible parties who request reimbursement of funds to clean up soil and groundwater pollution from UST leaks. The State Water Board also enforces the Porter-Cologne Water Quality Act through its nine regional boards, including the San Francisco Bay Regional Water Board, described below.

California Air Resources Board. This agency is responsible for coordination and oversight of State and local air pollution control programs in California, including implementation of the California Clean Air Act of 1988. CARB has developed State air quality standards, and is responsible for monitoring air quality in conjunction with the local air districts.

(3) Regional and Local Agencies. The following regional and local agencies have regulatory authority over the proposed project's management of hazardous materials and waste on the site.

San Francisco Bay Water Board. The project site is located within the jurisdiction of SFBWB. SFBWB provides for protection of State waters in accordance with the Porter-Cologne Water Quality Act of 1969. SFBWB can act as lead agency to provide oversight for sites where the quality of groundwater or surface waters is threatened, and has the authority to require investigations and remedial actions.

Bay Area Air Quality Management District. The BAAQMD has primary responsibility for control of air pollution from sources other than motor vehicles and consumer products (which is the responsibility of U.S. EPA and CARB). BAAQMD is responsible for preparing attainment plans for non-attainment criteria pollutants, control of stationary sources, and the issuing of permits for activities including asbestos demolition/renovation activities (District Regulation 11, Rule 2).

Alameda County Department of Environmental Health and Oakland Fire Services Agency. ACDEH and OFSA are the primary agencies responsible for local enforcement of State and federal laws pertaining to hazardous materials management and for oversight of hazardous materials investigations and remediation in Alameda County.

In Oakland, OFSA has been granted responsibility for implementation and enforcement of many hazardous materials regulations at the project site under the Certified Unified Program Agency (CUPA) Program (California Health and Safety Code Chapter 6.11). The CUPA programs include coordination of the local hazardous waste generator program, underground and aboveground storage tank management, and investigation of leaking underground storage tank sites. OFSA also implements the City of Oakland Hazardous Materials Assessment and Reporting Program, pursuant to City Ordinance No. 12323, which requires notification of hazardous materials storage, use and handling, and an assessment as to whether this storage, use and handling would cause a public health hazard to nearby sensitive receptors including schools, hospitals or other sensitive receptors.

The Oakland Office of Emergency Services (part of OFSA), provides emergency response to fire emergencies and hazardous materials incidents within the City of Oakland, and conducts vegetation management inspections for wildfire reduction. Oakland has entered into agreements with adjoining jurisdictions for cooperative response to fires.[22]

Urban Land Redevelopment (ULR) Program. The ULR program is a collaborative effort by the City of Oakland and the principal agencies charged with enforcing environmental regulations (DTSC, Water Board, and ACDEH) to facilitate the cleanup and redevelopment of contaminated properties in Oakland. The program is coordinated by the City and is specific to Oakland sites. The ULR Program clarifies environmental investigation requirements, and establishes Oakland-specific, risk-based corrective action (RBCA) standards for qualifying sites. RBCA standards are criteria that, when met, adequately address risk posed by contamination to human health. The RBCA standards were first submitted in 1999, and are planned for revision this year.[23]

(4) Worker Health and Safety. Worker health and safety is regulated at the federal level by the U.S. Department of Labor, Occupational Safety and Health Administration

[22] City of Oakland, General Plan, Safety Element, Fire Hazards (Chapter 4), November 2004.

[23] Mark Gomez, City of Oakland Public Works Agency, Environmental Services Division, personal communication with J. Pettijohn of Baseline, January 2007.

(OSHA). The Federal Occupational Safety and Health Act of 1970 authorizes states (including California) to establish their own safety and health programs with OSHA approval; implementation of worker health and safety in California is regulated by the California Department of Industrial Relations (DIR). The DIR includes the Division of Occupational Safety and Health (DOSH), which acts to protect workers from safety hazards through its California OSHA (Cal/OSHA) program and provides consultative assistance to employers. California standards for workers dealing with hazardous materials are contained in CCR Title 8 and include practices for all industries (General Industrial Safety Orders), specific practices for construction, and other industries.

(5) City of Oakland Policies. Relevant policies and conditions from the City's General Plan, Municipal Code and Standard Conditions of Approval are described below.

City of Oakland General Plan. The November 2004 Safety Element of the Oakland General Plan[24] contains the following policies regarding hazards and hazardous materials and emergency response that may apply to this project. Relevant policies from other General Plan elements are also described.

- Policy HM-1: Minimize the potential risks to human and environmental health and safety associated with past and present use, handling, storage and disposal of hazardous materials.
- Policy HM-2: Reduce the public's exposure to toxic air contaminants through appropriate land use and transportation strategies.
- Policy HM-3: Seek to prevent industrial and transportation accidents involving hazardous materials and enhance the city's capabilities to response to such incidents.
- Policy PS-1: Maintain and enhance the city's capacity to prepare for, mitigate, respond to, and recover from disasters and emergencies.

The following policy statements from the Open Space, Conservation and Recreation (OSCAR) Element of the General Plan[25] regarding hazards and hazardous materials may apply to the proposed project:

- Policy CO-1.2: Soil contamination and hazards. Minimize hazards associated with soil contamination through the appropriate storage and disposal of toxic substances, monitoring of dredging activities, and clean up of contaminated sites. In this regard, require soil testing for development of any site (or dedication of any parkland or community garden) where contamination is suspected due to prior activities on the site.
- Policy REC-4.2: Encourage maintenance practices which conserve energy and water, promote recycling, and minimize harmful side effects on the environment. Ensure that any application of chemical pesticides and herbicides is managed to avoid pollution of ground and surface waters.

[24] City of Oakland, General Plan, Safety Element, Hazardous Materials (Chapter 5), November 2004.

[25] City of Oakland, General Plan, Safety Element, Appendix A, November 2004.

City of Oakland Municipal Code. The City of Oakland Municipal Code includes regulations for the handling of hazardous materials in the City. Title 8, Chapter 8.12 of the Oakland Municipal Code adopts California Health and Safety Code laws (Health and Safety Code Section 25500 et seq.) related to hazardous materials. City Ordinance No. 12323 regarding hazardous materials reporting is previously described requires notification of hazardous materials storage, use and handling, and an assessment as to whether this storage, use and handling would cause a public health hazard to nearby sensitive receptors including schools, hospitals or other sensitive receptors.

City of Oakland's Standard Conditions of Approval. The City's Standard Conditions of Approval relevant to this impact topic are listed below for reference. The conditions of approval will be adopted as requirements of the proposed project if the project is approved by the City to help ensure no significant impacts (for the applicable topic) occur, as a result they are not listed as mitigation measures.

COA HAZ-1: Hazards Best Management Practices. *Prior to issuance of a demolition, grading, or building permit.* The project applicant and construction contractor shall ensure that construction best management practices are implemented as part of construction to minimize the potential negative effects to groundwater and soils. These shall include the following:

a) Follow manufacture's recommendations on use, storage, and disposal of chemical products used in construction;
b) Avoid overtopping construction equipment fuel gas tanks;
c) During routine maintenance of construction equipment, properly contain and remove grease and oils;
d) Properly dispose of discarded containers of fuels and other chemicals.
e) Ensure that construction would not have a significant impact on the environment or pose a substantial health risk to construction workers and the occupants of the proposed development. Soil sampling and chemical analyses of samples shall be performed to determine the extent of potential contamination beneath all UST's, elevator shafts, clarifiers, and subsurface hydraulic lifts when on-site demolition, or construction activities would potentially affect a particular development or building.
f) If soil, groundwater or other environmental medium with suspected contamination is encountered unexpectedly during construction activities (e.g., identified by odor or visual staining, or if any underground storage tanks, abandoned drums or other hazardous materials or wastes are encountered), the applicant shall cease work in the vicinity of the suspect material, the area shall be secured as necessary, and the applicant shall take all appropriate measures to protect human health and the environment. Appropriate measures shall include notification of regulatory agency(ies) and implementation of the actions described in the Standard Conditions of Approval (see COA HAZ-3 and HAZ-5 on page 357) as necessary, to identify the nature and extent of contamination. Work shall not resume in the area(s) affected until the measures have been implemented under the oversight of the City or regulatory agency, as appropriate.

COA HAZ-2: Asbestos Removal in Structures. *Prior to issuance of a demolition permit.* If asbestos is found to be present in building materials to be removed, demolition and disposal is required to be conducted in accordance with procedures specified by Regulation 11, Rule 2 (Asbestos Demolition, Renovation and Manufacturing) of Bay Area Air Quality Management District (BAAQMD) regulations, as may be amended.

COA HAZ-3: Phase I and/or Phase II Reports. *Prior to issuance of a demolition, grading, or building permit.* Prior to issuance of demolition, grading, or building permits the project applicant shall submit to the Fire Prevention Bureau, Hazardous Materials Unit, a Phase I environmental site assessment report, and a Phase II report if warranted by the Phase I report for the project site. The reports shall make recommendations for remedial action, if appropriate, and should be signed by a Registered Environmental Assessor, Professional Geologist, or Professional Engineer.

COA HAZ-4: Lead-Based Paint/Coatings, Asbestos, or PCB Occurrence Assessment. *Prior to issuance of a demolition, grading, or building permit.* The project applicant shall submit a comprehensive assessment report, signed by a qualified environmental professional, documenting the presence or lack thereof of asbestos-containing materials (ACM), lead-based paint, and any other building materials or stored materials classified as hazardous waste by State or federal law.

COA HAZ-5: Environmental Site Assessment Reports Remediation. *Prior to issuance of a demolition, grading, or building permit.* If the environmental site assessment reports recommend remedial action, the project applicant shall:

a) Consult with the appropriate local, State, and federal environmental regulatory agencies to ensure sufficient minimization of risk to human health and environmental resources, both during and after construction, posed by soil contamination, groundwater contamination, or other surface hazards including, but not limited to, underground storage tanks, fuel distribution lines, waste pits and sumps.
b) Obtain and submit written evidence of approval for any remedial action if required by a local, State, or federal environmental regulatory agency.
c) Submit a copy of all applicable documentation required by local, State, and federal environmental regulatory agencies, including but not limited to: permit applications, Phase I and II environmental site assessments, human health and ecological risk assessments, remedial action plans, risk management plans, soil management plans, and groundwater management plans.

COA HAZ-6: Lead-Based Paint Remediation. *Prior to issuance of a demolition, grading, or building permit.* If lead-based paint is present, the project applicant shall submit specifications signed by a certified Lead Supervisor, Project Monitor, or Project Designer for the stabilization and/or removal of the identified lead paint in accordance with all applicable laws and regulations, including but not necessarily limited to: Cal/OSHA's Construction Lead Standard, 8 CCR1532.1 and DHS regulation 17 CCR Sections 35001 through 36100, as may be amended.

COA HAZ-7: Asbestos Remediation. *Prior to issuance of a demolition, grading, or building permit.* If asbestos-containing materials (ACM) are present, 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.

COA HAZ-8: Other Materials Classified as Hazardous Waste. *Prior to issuance of a demolition, grading, or building permit.* If other building materials or stored materials classified as hazardous waste by State or federal law is present, the project applicant shall submit written confirmation that all State and federal laws and regulations shall be followed when profiling, handling, treating, transporting and/or disposing of such materials.

COA HAZ-9: Health and Safety Plan per Assessment. *Prior to issuance of a demolition, grading, or building permit.* If the required lead-based paint/coatings, asbestos, or PCB assessment finds presence of such materials, the project applicant shall create and implement a health and safety plan to protect workers from risks associated with hazardous materials during demolition, renovation of affected structures, and transport and disposal.

COA HAZ-10: Fire Safety Phasing Plan. *Prior to issuance of a demolition, grading, or building permit and concurrent with any p-job submittal permit.* The project applicant shall submit a separate fire safety phasing plan to the Planning and Zoning Division and Fire Services Division for their review and approval. The fire safety plan shall include all of the fire safety features incorporated into the project and the schedule for implementation of the features. Fire Services Division may require changes to the plan or may reject the plan if it does not adequately address fire hazards associated with the project as a whole or the individual phase.

COA HAZ-11: Fire Safety. *Prior to and ongoing throughout demolition, grading, and/or construction..* The project applicant and construction contractor will ensure that during project construction, all construction vehicles and equipment will be fitted with spark arrestors to minimize accidental ignition of dry construction debris and surrounding dry vegetation.

2. Impacts and Mitigation Measures

This section outlines potential impacts related to public health and safety and recommends mitigation measures. Criteria of significance for public health and hazards are listed first. Less-than-significant impacts are then discussed, followed by potentially significant impacts.

a. Criteria of Significance. A significant hazardous material or public health and safety impact would occur if the project would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- 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.

- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- 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.
- 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.
- 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.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- 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.

b. Less-than-Significant Impacts. Less-than-significant impacts related to public health and hazards are discussed below.

(1) Routine Use, Storage, and Disposal of Hazardous Materials. Implementation of the proposed project would result in the development of residences, commercial and parking space. It is not anticipated that large quantities of hazardous materials would be permanently stored or used within the project site following development. Similarly, the project would not emit hazardous emissions or handle hazardous materials. Small quantities of common hazardous materials (e.g., paint, maintenance supplies) would be routinely used within the project site for maintenance and cleaning. However, these materials would not be used in sufficient volume to create a substantial risk of fire or explosion, or otherwise pose a substantial risk to human or environmental health. Therefore, implementation of the proposed project would not create a permanent significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials.

(2) Hazardous Materials in Building Materials. Due to the age of the buildings at the project site, lead, asbestos, and other hazardous materials are likely present. During demolition, these hazardous materials could be dispersed and adversely affect construction workers and nearby members of the general public. A lead-based paint, asbestos-containing material, and PCB survey would be performed at the structure by a qualified environmental professional in accordance with the City's Lead-Based Paint/Coatings, Asbestos, or PCB Occurrence Assessment Standard Condition of Approval (see COA HAZ-4 on page 357). Based on the findings of the survey, all identified lead-based paint, asbestos and/or PCB hazards will be abated by a certified contractor in accordance with local, State, and federal requirements, including the requirements of the Bay Area Air Quality Management District for asbestos (Regulation 11, Rule 2). The findings of the survey will be documented by a qualified environmental professional, a plan for remediation of the hazardous building materials, and documentation of the remediation will be prepared by the City in accordance with the City's Other Materials Classified as Hazardous Waste; Asbestos Remediation; Lead-Based Paint Remediation and Asbestos Removal in Structures Standard Conditions of Approval (see COAs HAZ-2, HAZ- 6, HAZ-7 and HAZ-8 on pages 357 and 358). Implementation of these conditions of approval and compliance with existing local, State, and federal requirements would reduce the potential impacts from hazardous materials in building materials to a less-than-significant level.

(3) Hazardous Materials in Soils and Groundwater from Historic Hazardous Materials. Development of the project site could expose construction workers, the general public, and future workers and residents to hazardous materials in soil, groundwater, and soil gases.

After the 2005 Phase II investigation for the project site was completed, the 3875 Telegraph Avenue property was listed on the State Leaking Underground Storage Tank database, one of the databases referenced in Government Code Section 65962.5.[26] ACDEH is the lead regulatory agency in charge of oversight of investigation and remediation of this release.

Releases of petroleum hydrocarbons and related compounds at this location could potentially pose a health risk to construction workers, who will come into direct contact with contaminated soils and groundwater during construction, and/or to future workers and residents at the site, who could come into contact with contaminated materials during maintenance activities, and who may be affected by contaminants in soil gases migrating from contaminated soils and groundwater into indoor air.

In addition to petroleum-related contaminants near 3875 Telegraph Avenue, the 2005 Phase II investigation identified heavy metals and solvents in soils and groundwater above screening thresholds. The Phase II investigation recommended that a site-specific Human Health Risk Assessment (HHRA) be performed to develop specific remedies for the site.

Specific measures that would be required for the project will rely on the findings of a site-specific HHRA and the requirements of regulatory oversight agencies. Depending on HHRA findings and regulatory requirements, health effects for construction workers may be mitigated through implementation of health and safety measures during construction. Health effects for future residents and workers may be addressed either through remedial activities, such as excavation of contaminated soils and treatment of contaminated

[26] State Water Resources Control Board, 2007, Geotracker Database, accessed July 26.

groundwater, or may be addressed through institutional controls and engineering controls (IC/EC). For example, potential health risks from groundwater ingestion may be eliminated through a deed restriction prohibiting deep excavations and groundwater use. Potential health risks from direct contact with site soils may be eliminated through installation and maintenance of building foundations, parking lots, and other barriers to contaminated soils. Potential health risks from soil gases may be addressed by use of vapor barriers on site buildings or active ventilation of ground floor interiors.

Construction at the project site will require the use and transport of hazardous materials. These materials will include fuels, oils, and other chemicals used during construction activities. Improper use and transportation of hazardous materials could result in accidental releases or spills, potentially posing health risks to workers, the public, and environment.

Construction contractors will be required to implement construction best management practices to prevent misuse of hazardous materials in accordance with the construction RMP required by COA HAZ-1, above. All use, storage, transport, and disposal of hazardous materials during construction activities will be subject to existing local, State, and federal hazardous materials regulations.

Implementation of the City's Standard Condition, COA HAZ-5, as modified to include site specific recommendations from the completed studies would reduce this potential impact to less than significant.

COA HAZ-5: Environmental Site Assessment Reports Remediation. *Prior to issuance of a demolition, grading, or building permit.* If the environmental site assessment reports recommend remedial action, the project applicant shall:

a) Consult with the appropriate local, State, and federal environmental regulatory agencies to ensure sufficient minimization of risk to human health and environmental resources, both during and after construction, posed by soil contamination, groundwater contamination, or other surface hazards including, but not limited to, underground storage tanks, fuel distribution lines, waste pits and sumps.
b) Obtain and submit written evidence of approval for any remedial action if required by a local, State, or federal environmental regulatory agency.
c) Submit a copy of all applicable documentation required by local, State, and federal environmental regulatory agencies, including but not limited to: permit applications, Phase I and II environmental site assessments, human health and ecological risk assessments, remedial action plans, risk management plans, soil management plans, and groundwater management plans.
d) Prior to issuing any permits for construction at the project site, a Construction-Phase Risk Management Plan (RMP) shall be prepared for the project. The RMP shall include any health and safety measures determined necessary in the HHRA to protect the health of construction workers and nearby public during construction activities. These measures may potentially include dust control, air monitoring, and/or the use of personal protective equipment during

construction activities. Action levels for contaminants of concern shall be established, with detailed descriptions of corrective actions to be taken in the event that the action levels are reached during monitoring. The RMP shall also include safety and emergency response measures included in the City's Standard Conditions HAZ-1 and HAZ-2. The RMP shall be reviewed and approved by the City of Oakland or designated regulatory oversight agency.

e) Implementation of COA HAZ-5 would require a Remediation Action Plan (RAP). Required remedial actions shall include measures to ensure that any potential added health risks to future site users as a result of hazardous materials are reduced to a cumulative human health risk of less than 1 × 10-6 (one in one million) for carcinogens and a cumulative hazard index of 1.0 for non-carcinogens, or other site-specific goals established by regulatory oversight agencies. The potential risks to human health in excess of these goals may be reduced either by remediation of the contaminated soils or groundwater (e.g., excavation and off-site disposal of soils and treatment of groundwater) and/or implementation of institutional controls and engineering controls (IC/EC). IC/EC may include the use of hardscape (buildings and pavements), importation of clean soil in landscaped areas to eliminate exposure pathways, and deed restrictions. Specific remedies would depend on the findings of the site-specific HHRA and the requirements of the regulatory agencies.

(4) School Sites. Several schools are located in the project vicinity. Campuses for St. Martin De Porres Catholic School, at 675 41st Street, and Park Day School, at 370 43rd Street, are located approximately ¼-mile from the project site. However, as the proposed project would not emit hazardous emissions of significant risk or handle significant quantities of hazardous materials, substances, or waste, there would be no significant impact to existing or proposed school facilities.

(5) Airport/Airfield Hazards. No airports or private air strips are located in the project vicinity, and the project site is not located within an airport land use plan.

(6) Emergency Response/Emergency Evacuation. The City of Oakland has adopted the Standard Emergency Management System (SEMS), a framework for standardizing emergency response procedures in California. The Oakland Office of Emergency Services' SEMS emergency plan describes how City agencies would respond to declared emergencies in the City. The Plan must be routinely updated in accordance with Action PS-1.2 of the City General Plan. Designated evacuation routes in the project vicinity include Telegraph Avenue, MacArthur Boulevard, and Martin Luther King Jr. Way.[27] Development of the project would not impede vehicular or pedestrian traffic on these evacuation routes. Regular updating of the City of Oakland's SEMS emergency plan, as required by the General Plan, would also ensure that the project would not impair implementation or physically impair the City's emergency response and evacuation plans.

[27] City of Oakland General Plan Safety Element, 2004. Figure 2.1, Public Safety.

(7) Wildland Fire Hazards. The project site is not in or adjacent to an area mapped as containing a wildland fire hazard[28] and is not located within the City of Oakland Wildfire Prevention Assessment District area of wildfire hazard areas.[29]

(8) Electromagnetic Fields. Electromagnetic fields (EMF) are generated by man-made sources, including electrical transmission and distribution lines, building wiring, and electrical appliances, as well as from natural phenomena such as lightning or static electricity. There is a low, but measurable "background" level of EMF in the environment that is not related to any particular man-made source. There has been significant public concern about the potential health effects associated with EMF from manmade sources, although scientific studies attempting to identify these health effects have been inconclusive.

The California EMF Program, developed by the California Public Utilities Commission (PUC), California Department of Health Services (DHS), and the Public Health Institute, completed a risk evaluation of EMF in June 2002. Three DHS scientists evaluated existing EMF study data, in coordination with DHS toxicologists, physicians, and epidemiologists. Due to the lack of clear association between EMF and health risks in the available data, the California EMF Program did not identify any specific policy measures to address potential risks of EMF, and DHS is making no policy recommendations at this time.[30]

In the project vicinity, the adjoining BART tracks and station represent an additional source of EMF. However, modeling performed for BART projects indicates that EMF generated from BART activities attenuates quickly with distance. Measurements at the Lake Merritt and Pleasanton/Dublin stations indicate that EMF is at "background" levels at distances greater than 15 meters (49.2 feet) from the BART tracks.[31] As the proposed project is located outside the area where increased EMF fields from BART operations can be measured, future workers and residents at the project site would not be exposed to increased levels of EMF due to the adjoining BART facilities.

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[28] California Department of Forestry and Fire Protection (CDF), 2000, Alameda County Natural Hazards Disclosure (Fire), Map ID NHD-01, January 6.

[29] City of Oakland Fire Department, Fire Prevention Bureau, 2006, Annual Vegetation Management Plan for the Wildfire Prevention Assessment District – 2006, April 6.

[30] California EMF Program, 2002, An Evaluation of the Possible Risks From Electric and Magnetic Fields (EMFs) From Power Lines, Internal Wiring, Electrical Occupations, and Appliances, Final Report, June.

[31] Santa Clara Valley Transportation Authority, 2004. *Final Environmental Impact Report, Silicon Valley Rapid Transit Corridor, Chapter 4.7-Electromagnetic Fields,* November.

c. Significant Public Health and Hazards Impacts. The proposed project would not result in significant public health and hazard impacts.

d. Cumulative Public Health and Hazards Impacts. The geographic area considered for potential public health or hazards cumulative impacts consists of an area within ¼-mile of the project site, and the area along transportation routes used during demolition and construction activities associated with projects within this radius. Hazards and hazardous materials impacts are generally site-specific and/or have limited mobility, and would not be expected to have cumulatively considerable effects beyond this distance.

Development activities in this area could increase the exposure of persons to hazardous materials, including contaminated soil, soil gas, groundwater, hazardous construction materials, and lead and asbestos. However, the use, storage, and disposal of hazardous materials has been increasingly regulated by local, State, and federal law and regulations. The historical trend within the regulatory community has been to strengthen the standards regarding the use, handling, and transport of hazardous materials, therefore minimizing the risk to public health, safety, and welfare. Many past projects have been, all present projects are, and all future projects, including the proposed project, will be subject to these more rigorous controls for site remediation and development. The current and future handling of hazardous materials within the geographic area will be subject to these escalating regulations and the City's Standard Conditions of Approval and as a result the cumulative hazardous materials risks will not be significant. Moreover, it is unlikely that any potential hazardous materials exposure from the construction activities would combine with other surrounding activities that may involve hazardous material exposure because there is no evidence that other construction activities will be occurring in the immediate area surrounding the site at the time of project construction that could potentially combine with the project. Additionally, compliance with the strict regulatory requirements associated with handling of hazardous materials would reduce the potential for any cumulatively considerable contribution from the project to any potential cumulative impact. Therefore, implementation of the proposed project together with the impact of past, present, existing, current and reasonably foreseeable future development would not result in any significant cumulative public health or hazards impacts.

I. PUBLIC SERVICES

This section analyzes the proposed project's potential impacts to public services, including police services, fire and emergency services, public schools, libraries, and parks and recreation. Potential impacts to public services that could result from the proposed project are identified, and mitigation measures are recommended, as appropriate.

1. Setting

Existing services are described below. Relevant regulations and service requirements are also discussed.

a. Services. This section describes current service locations, capacities, and expansion possibilities for police services, fire services, parks, schools, and libraries that would serve the project site.

(1) Police Services. Police services are provided by the Oakland Police Department (OPD). OPD staffs the Primary Public Safety Answering Point, dispatches patrol officers to both emergency and non-emergency calls for service, conducts preliminary and follow-up criminal investigations, has primary traffic enforcement jurisdiction on all public roadways within the City (except for freeways), maintains preventative patrols, supports community policing efforts, as well as various other duties. Police headquarters are located at 250 Frank H. Ogawa Plaza.

The OPD has an authorized staffing level of 803 sworn positions, with current staffing of approximately 730 officers.[1] All of these are paid full-time positions. OPD is currently in an accelerated hiring mode to meet the goals of Measure Y, which expanded community policing resources. OPD has an authorized volunteer reserve unit of 75, with a current volunteer staff of 15.[2] The 9-1-1 Call Center has an authorized staffing level of 72, with a current dispatch staff of 60. OPD anticipates that this number will decrease over the coming year due to upcoming retirements.[3]

Oakland is comprised of six police service areas that are divided into 57 police beats. The project site is within Beat 8X. There are six officers assigned to patrol watches for each of the three daily shifts. These include three regular and three relief officers. One Problem

[1] Leong-Hall, Harriet, 2007. Administrative Services Manager II, Oakland Police Department. Written communication with LSA Associates Inc. June 29.

[2] Poirier, Michael, 2007. Chief of Staff, Office of the Chief of Police, Oakland Police Department. Written communication with LSA Associates Inc. June 29.

[3] Johnson, Michael, 2007. Lieutenant, Oakland Police Department. Written communication with LSA Associates Inc. July 2.

Solving Officer (PSO) is also assigned to the area. The primary law enforcement concerns within this beat are robberies, burglaries, assaults, and drug trafficking.[4]

During most shifts, officers are continuously responding to calls and have little or no time to work pro-actively with residents and business persons within their beats. Officers conduct preventative patrols as time permits. Calls for service are defined and dispatched based on their urgency. Priority A calls are the most serious and are dispatched within one to two minutes after the call is received. Priority B calls represent the greatest volume of calls and consist of offenses such as domestic disputes and stolen vehicles. Priority C and D calls are non-emergency. Due to staffing constraints, some lower priority calls may be handled by non-sworn civilians.

The average Citywide response time for Priority A, B, and C calls in May 2007 was approximately 6, 54, and 114 minutes, respectively. Average response times to the project site during this same time period were approximately 6 minutes for Priority A calls and 73 minutes for Priority B calls.[5] Due to the staffing constraints, the 9-1-1 Call Center is not currently able to meet the State goal of answering 9-1-1 calls for service within the recommended 10 second timeframe.[6]

The portion of the site currently owned by BART is patrolled by the BART Police Department. The BART Police Department is budgeted for 206 sworn officers. Patrols of BART stations, facilities, and rights-of-way are conducted 24/7. Uniformed patrol officers in marked police cruisers ensure timely responses to emergencies, critical incidents, and other calls for police service. No station has officers assigned to it on a fixed post. MacArthur, like the 42 other BART stations, is patrolled by one officer who is responsible for covering one or two other stations.

(2) Fire Services. Fire protection services are provided by the Oakland Fire Department (OFD). The OFD serves the City of Oakland and has mutual response agreements with the cities of Berkeley, Piedmont, and Alameda, Alameda County and Contra Costa County Fire Departments, and the East Bay Regional Park District. In addition to fire suppression, fire prevention, and emergency medical services (EMS), the OFD provides services through the Office of Emergency Services (OES), Citizens of Oakland Respond to Emergencies (CORE), the Wildfire Prevention District, and Emergency Dispatch.

The OFD staff consists of 591 employees, of which 500 are uniformed personnel. Of those, 93 are trained paramedics and the remaining 407 are trained emergency medical

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[4] Meeks, James, 2007. Lieutenant, Oakland Police Department. Written communication with LSA Associates Inc. June 28.

[5] Johnson, Michael, 2007, op. cit.

[6] Ibid.

technicians (EMTs).[7] Daily shift staffing at the City's 25 fire stations consists of 136 personal. There are no volunteer positions. The OFD's fleet includes 25 type-1 engines, four type-3 engines, seven aerial ladders, eight brush patrols, a fireboat, a heavy-rescue vehicle, two foam units, six airport rescue rigs, and four hose tenders.[8]

Fire Station 8, located at 463 51st Street, is the closest station to the project site and is approximately 0.5 miles to the north. Equipment at this station includes one engine and one aerial ladder truck. The aerial ladder truck is capable of serving a seven story building, depending on the grade and proximity of the building to the apparatus. Fire Station 15 is the second closest station and is located at 455 27th Street, approximately 0.7 miles from the site.[9] OFD Station 5 is the third closest station, and is located at 934 34th Street in Emeryville, approximately 0.8 miles from the site.

The Oakland Fire Department has a standard response time goal of seven minutes from dispatch to time of arrival 90 percent of the time.[10] Service areas within 1.5 miles of a fire station are generally served within the service standard time. The majority of the City, including the project site, is located within 1.5 miles of one of Oakland's 25 fire stations.

The OFD provides emergency medical services through the EMS division and is frequently a first responder in an emergency. Approximately 80 percent of calls to the OFD for emergency services are medical emergencies.[11] At least one paramedic staffs each fire station engine and firefighters are certified as emergency medical technicians. Private companies provide ambulance services under contract with Alameda County.

(3) Public Schools. The project site is served by the Oakland Unified School District (OUSD), which serves the City of Oakland. The OUSD operates 61 elementary schools, 22 middle schools, 16 high schools, 36 charter schools, and 11 alternative education schools. In addition, there are 49 private or parochial schools within the City.[12] Enrollment during the 2006-2007 school year was 39,694 public school students, with 7,228 charter school students, for a total of 46,922 students. By 2011, OUSD public school enrollment is expected to decline to 32,005, while the projected charter enrollment is expected to

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[7] Edwards, James D., 2007. Deputy Chief, Fire Prevention Bureau/Communications, Oakland Fire Department. Written communication with LSA Associates, Inc. February 28.

[8] Oakland, City of, 2004. General Plan, Safety Element. November.

[9] Edwards, James D., 2007, op. cit.

[10] Ibid.

[11] Oakland, City of, 2006. *Oakland Fire Department, Operations*. Website: www.oaklandnet.com/oakweb/fire/.

[12] Hawthorne, Laura, 2007. Executive Assistant to the Chief of Community Accountability, Oakland Unified School District. Written communication with LSA Associates, Inc. July 19.

increase to 9,638 students, for a total projected decrease in enrollment to 41,643 students.[13]

Neighborhood schools serving the project site are Santa Fe Elementary (915 54th Street), Westlake Middle (2629 Harrison Street), and Oakland Technical High School (4351 Broadway). The current and projected enrollment, as well as existing capacity at these schools, is listed in Table IV.I-1. As shown, each of these schools is currently operating well below design capacity, and this condition is expected to continue as enrollment declines through the 2011-2012 school year.

Table IV.I-1 Neighborhood Schools

School	Capacity	2006-2007 Enrollment	Projected 2011-2012 Enrollment
Santa Fe Elementary	400	338	263
Westlake Middle	900	672	630
Oakland Technical	2,050	1,678	1,283

Source: Oakland Unified School District, 2007.

The OUSD uses a student yield factor of 0.1 and 0.7 students per market rate and below market rate residential dwelling unit, respectively. The OUSD currently collects a facilities fee of $2.24 per square foot for residential development and $0.36 per square foot for commercial development.[14]

(4) Libraries. The City of Oakland has 18 public library branches. The Main Library is located approximately 2.2 miles from the project site at 125 14th Street. The main branch has 350,000 reference and circulating books, 22 computers with internet access, in addition to magazine, newspaper, sheet music, government publications, and map collections. The library provides many services including computer training, tax assistance, lawyer assistance, homework assistance, and storytime.[15]

Two branch libraries are located less than 1 mile from the project site. The Piedmont Avenue Branch, located at 160 41st Street, has a circulation of approximately 39,000 popular and well-reviewed juvenile and adult non-fiction and fiction books as well as DVDs, videos, audio books, compact discs, magazines and newspapers. The Temescal Branch, located at 5205 Telegraph Avenue, has a circulation of approximately 29,000 books, compact disks, videos, DVDs, audio books, audiocassettes, magazines, and newspapers. Circulating materials are largely of popular interest, with a strong emphasis on fiction and home repair, maintenance, decorating and gardening in the adult collection.

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[13] Vital, Kirsten, 2007. Chief of Community Accountability, Oakland Unified School District. Written communication with LSA Associates Inc. July 13.

[14] Ibid.

[15] Oakland Public Library, 2006. Main Library. http://www.oaklandlibrary.org/Seasonal/Sections/mainhrs.html. February 15.

The Library's Master Facilities Plan[16] identifies a need for relocation and expansion of the Piedmont Avenue Branch, with a desire to increase the circulation volume to 55,000-65,000. The Master Facilities Plan also identifies a need for renovations at the Temescal Branch, allowing a slight increase in circulation. However, the funding mechanism for these library improvements has not yet been identified.

(5) Parks and Recreation. The City of Oakland Office of Parks and Recreation (OPR) provides recreational and cultural programs for residents of the City. OPR manages over 3,000 acres of parkland within the city limits. Facilities include 24 recreation centers, 140 parks and playgrounds, 54 ball fields, seven outdoor swimming pools, 50 tennis courts, and two public golf courses.[17] Maintenance of these facilities is provided by the Oakland Public Works Agency.

The City of Oakland parks classification system emphasizes neighborhood, community and region-serving parks, but consists of seven additional park categories including: active mini-parks; passive mini-parks; linear parks; special use parks; resource conservation parks; athletic field parks (including school athletic fields); and school playgrounds.

Region-serving parks are 25 acres or larger, and include Lakeside, Joaquin Miller, and portions of Redwood-Roberts Parks. Community parks, such as Mosswood, serve a 1-mile radius in hill areas and a ½-mile radius in flatlands. Neighborhood Parks range in size from one to 10 acres, and serve a ½-mile radius in the hills and a ¼-mile radius in the flatlands. Miniparks, are generally less than 1-acre in size, and serve a 0.125-mile radius in the flatlands and a ¼-mile radius in the hills. The East Bay Regional Park District (EBRPD) acquires and develops regional parks, open spaces and trails throughout the East Bay, and also provides open space and recreation facilities within Oakland's city limits. EBRPD properties in Oakland include the 271-acre Leona Canyon Regional Open Space Preserve, the 1,220-acre Martin Luther King, Jr. Regional Shoreline Park, the 660-acre Robert Sibley Volcanic Regional Preserve, and the 100-acre Roberts Regional Recreational Area.

The City has a 10-acre per 1,000 residents park acreage goal and a 4-acre per 1,000 residents local-serving park acreage goal (includes parks with facilities that are not special purpose). There is an estimated 3,073 acres of total parkland in Oakland according to the Open Space, Conservation, and Recreation (OSCAR) Element, which provides approximately 8.26 acres of parkland per 1,000 residents and 1.33 acres of local serving park acreage per

[16] Oakland, City of, 2006. *Oakland Public Library Master Facilities Plan*. June 2006.

[17] Oakland, City of, 2005. Office of Parks and Recreation. Website: www.oaklandnet.com/parks/default.asp.

1,000 residents.[18] Because Oakland is predominantly developed, there are limited areas to develop parkland.

More specifically, the project site is located in the North Oakland Planning Area, and the City's OSCAR Element states that North Oakland has a goal to provide 1.18 acres of park area per 1,000 residents.[19] However, since the OSCAR Element was prepared, additional parks have been developed resulting in approximately 1.5 acres of additional park space in the North Oakland area. The North Oakland Planning Area is one of the most heavily urbanized parts of Oakland and generally lacks undeveloped natural areas. The OSCAR Element recognizes that new parks on vacant land are limited in North Oakland and that there is a potential new parks and open space in this Area via street closures and the redevelopment and re-use of institutional uses. The OSCAR Element also includes specific recommendations for new park and open space area in North Oakland. Recommendations relevant to the proposed project are included within this section.

Mosswood Park is the closest park to the project site and is located four blocks (0.3 miles) to the southeast. Mosswood Park consists primarily of open space and encompasses approximately 11 acres; facilities include a baseball diamond, tennis courts, basketball courts, and a recreation center. A dog park is also planned for the park and scheduled for completion by the end of 2007.

b. Relevant Policies. Relevant policies and conditions from the City's General Plan and Standard Conditions of Approval are described below.

(1) Oakland General Plan. The Land Use and Transportation Open Space, Conservation and Recreation and Safety Elements of the Oakland General Plan includes the following policies related to the provision of fire safety, parks and school services:

- <u>Policy N.12.1</u>: The development of public facilities and staffing of safety-related services, such as fire stations, should be sequenced and timed to provide a balance between land use and population growth, and public services at all times.
- <u>Policy N.12.2</u>: Adequate public school capacity should be available to meet the needs of Oakland's growing community. The City and the Oakland Unified School District (OUSD) should work together to establish a continuing procedure for coordinating residential and commercial development and exploring the imposition of mutually agreed upon reasonable and feasible strategies to provide for adequate school capacity. The City and OUSD should jointly consider where feasible and appropriate, funding mechanisms such as assessment districts, redevelopment

[18] Oakland, City of, 1996. *Open Space, Conservation, and Recreation (OSCAR) Element, General Plan*. June, page 4-9.

[19] Oakland, City of, 1996. Open Space, Conservation, and Recreation (OSCAR) Element of the General Plan. June.

Agency funding (AB 1290), use of surplus, City-owned land, bond issues, and adjacent or shared use of land or school facilities with recreation, libraries, child care and other public uses.

- Policy FI-1: Maintain and enhance the City's capacity for emergency response, fire prevention and fire fighting.
- Action FI-1.2: Strive to meet a goal of responding to fires and other emergencies within seven minutes of notification 90 percent of the time.

Relevant OSCAR Element Planning Strategies for the North Oakland Planning Area are as follows:

- Include provisions for a public plaza or mini-park in any redevelopment or urban design plan for the area around the MacArthur BART Station; and
- Promote improvements to the overall visual quality of the area through street tree planting, particularly in the neighborhoods west of Telegraph Avenue.

(2) City of Oakland's Planning Code. The City's Planning Code includes standards for open space for construction of new residential units. The S-15 Transit-Oriented Development Zone standards for open space (Code Section 17.100.170) are described below.

The S-15 Zone requires that 150 square feet of usable group open space and 30 square feet of private usable open space shall be provided per regular dwelling unit. Alternatively, a minimum of 75 square feet (or 50 percent of the required group space standard) of individual private open spaces per regular dwelling unit, could be provided per Section 17.126. 020.

(3) City of Oakland's Standard Conditions of Approval. The City's Standard Conditions of Approval relevant to this impact topic are listed below for reference. The conditions of approval will be adopted as requirements of the proposed project if the project is approved by the City to help ensure no significant impacts (for the applicable topic) occur, as a result they are not listed as mitigation measures.

COA SERV-1: Conformance with other Requirements. *Prior to issuance of a demolition, grading, P-job, or other construction related permit.*

a) The project applicant shall comply with all other applicable federal, state, regional and/or local codes, requirements, regulations, and guidelines, including but not limited to those imposed by the City's Building Services Division, the City's Fire Marshal, and the City's Public Works Agency.
b) The applicant shall submit approved building plans for project-specific needs related to fire protection to the Fire Services Division for review and approval, including, but not limited to automatic extinguishing systems, water supply improvements and hydrants, fire department access, and vegetation management for preventing fires and soil erosion.

COA SERV-2: Fire Safety Phasing Plan. *Prior to issuance of a demolition, grading, and/or construction and concurrent with any p-job submittal permit,* the project applicant shall submit a separate fire safety phasing plan to the Planning and Zoning Division and Fire Services Division for their review and approval. The fire safety plan shall include all of the fire safety features incorporated into the project and the schedule for implementation of the features. Fire Services Division may require changes to the plan or may reject the plan if it does not adequately address fire hazards associated with the project as a whole or the individual phase.

2. Impacts and Mitigation Measures

This section discusses potential impacts to public services and recreation that could result from development of the proposed project. The section begins with the criteria of significance, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with proposed project and identifies mitigation measures, as appropriate.

a. Criteria of Significance. The proposed project would have a significant impact on public services and recreation if it would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities or the 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:
  - police services;
  - fire and emergency services;
  - schools; or
  - other public facilities.
- 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.
- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

While important to the quality of life in the project area, impacts to schools from increased development do not necessarily result in physical environmental impacts. In *Goleta Union School District v. Regents of the University of California* (2d Dist. 1995) (37 Cal. App. 4th 1025, 1032, 1995), the Court of Appeal found that "Classroom overcrowding, per se, does not constitute a significant effect on the environment." A General Plan may have policies relating to public service levels in general or schools in particular. If a development project overwhelms the school district's capacity and quality of service, it could be inconsistent with the General Plan. The City of Oakland General Plan does not have a specific policy related to school service levels.

b. Less-than-Significant Public Services Impacts. Development of the proposed project would result in the following less-than-significant impacts to police, fire, school, library, and parks and recreational services.

(1) Police Services. Redevelopment of the project site would result in an increased demand for service for both the Oakland and BART police departments. The City and BART have not yet determined how the project site will be divided for jurisdictional purposes.

Based on a projected 2005 household size of 2.66 residents per household,[20] the proposed project would increase the City's population by approximately 1,845 residents,[21] thereby increasing the demand for police services. The addition of 1,845 persons to the City's population would represent less than 0.5 percent of the City's existing and projected population (estimated at 542,500 by 2035[22]); however, this increase would represent a larger percentage of the total increase in the overall citizen population within Beat 8X. The increased population would increase the number of calls for service within Beat 8X.

Overall, OPD currently has an adequate number of police officers to serve the City. For a city the size of Oakland, the national police service standard is one officer per 1,000 residents. Based on the current active count of 730 sworn officers, the City maintains an officer to resident ratio of approximately one officer per 563 residents.[23] BART also anticipates being able to adequately service the station portion of the project.[24]

As previously discussed, the OPD 9-1-1 Call Center is currently short-staffed. The increase in calls for service associated with the proposed project would contribute to the need for additional staff at the call center. Additional staff and associated equipment for the call center are funded by the City's General Fund and the OPD budget. In addition, as previously discussed, OPD is currently in the process of increasing the number of sworn staff to meet the goals of Measure Y. Any increase in staffing necessitated within the existing Beat 8X could likely be fulfilled by planned for increases in staffing. The increase in demand

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[20] Association of Bay Area Governments, 2006. *Projections 2007: Forecasts for the San Francisco Bay Area to the Year 2035*. December. Household size is based on a projected 2005 population of 410,600 and 154,580 households.

[21] This estimate includes the residential population generated by 675 residential units and 18 live/work units, although the live/work household size may be less.

[22] Ibid.

[23] Ibid.

[24] Gee, Gary, 2007. Chief, BART Police Department. Written communication with RRM Design Group. October 22.

associated with the proposed project would not require the construction of any new OPD facilities. Therefore, the proposed project would result in a less-than-significant impact to police services.

(2) Fire Services. The proposed project would create a small increase in demand for fire services within the City. As discussed above, the addition of 1,845 persons to the City's population would represent less than 0.5 percent of the City's existing and projected population (estimated at 542,500 by 2035[25]). While the increased population would slightly increase response times within the area due to additional calls for service, the increase would not cause the OFD to exceed the response time goal of seven minutes, 90 percent of the time. The first and second responders to the project site (Fire Stations 8 and 5, respectively) are within less than 1.5 miles of the site, which the OFD considers this an acceptable distance to maintain the standard response time.

The OFD requires a minimum fire flow of 1,500 gallons per minute (gpm). Pursuant to the City's Standard Conditions of Approval, the project applicant would be required to meet Oakland Fire Department standards related to fire hydrants, water fire flow, spacing of hydrants, sprinkler systems, and other fire code requirements. The residential and commercial components of the project would be required to meet Uniform Building Code (UBC) and Fire Code standards. The project design would be required to comply with Public Works Agency road standards and *Draft Access Road Standards*.

The proposed project would be subject to plan review by the OFD to ensure proper life safety standards and adequate emergency response access. The increase in demand for fire and EMS services could be met by existing staffing and facilities and the increased demand would not require the construction of any new facilities (i.e., new fire station) to provide adequate fire protection.[26] As such, the proposed project would have a less-than-significant impact on fire services.

(3) Schools. As discussed above, while important to the quality of life in the project area, impacts to schools from increased development do not necessarily result in physical environmental impacts. However, if a development project overwhelms the school district's capacity and quality of service, it could be inconsistent with the General Plan.

The proposed project would develop 675 high density multi-family housing units on the project site. Up to 562 units would be for-sale units and up to 113 units (20 percent of the market rate units) would be affordable housing rental units. In addition, 18 live/work units are also proposed. Given OUSD's student generation rates, the 562 market rate units would generate approximately 57 students and the 113 below market rate units would generate

[25] Ibid.

[26] Edwards, James D., 2007, op. cit.

80 students, for a total addition of 137 elementary, middle, and high school students. The OUSD does not provide student generation rates for live/work uses. It is anticipated that any students generated by live/work uses would be nominal.

As described within this section, the existing neighborhood schools within the project area are currently operating well below capacity and are anticipated to have available capacity for future students. Should these schools reach capacity at the time of project buildout, students would be diverted to other schools of their choice within the OUSD. The OUSD would be able to accommodate additional students generated by the proposed project and no new facilities would need to be constructed.[27] As such, the proposed project would have a less-than-significant impact on school services and facilities.

In addition, Senate Bill 50 (SB50) which provides a $9.3 billion bond measure for school construction and revises the existing limitation on developer fees for school facilities, was enacted as urgency legislation and became effective on November 4, 1998 as a result of approval by California voters of bond measure Proposition 1A. SB50 established a 1998 base amount of allowable developer fees (Level One fees) for residential construction (subject to adjustment) and prohibits school districts, cities, and counties from imposing school impact mitigation fees or other requirements in excess or in addition to those provided in the statute.

In order to address the additional demand placed on OUSD by the proposed project, the project applicant would pay the required development fee to OUSD. The project applicant would be required to pay a school impact/mitigation fee of $2.24 per square foot of residential development and $0.36 per square foot of commercial development.[28] Assuming that there is a maximum of 844,000 square feet of residential development and approximately 44,000 square feet of commercial development, the project applicant would be required to pay a maximum of $1,906,400 in school impact/mitigation fees. However, the final fee would be determined based upon the final square footage of the project.

(4) Libraries. It is anticipated that proposed project residents would primarily patronize the Piedmont Avenue and Temescal branch libraries due to the proximity of these facilities to the project site. The proposed project would cause an increase in the demand for library services due to the addition of 1,845 residents generated by the project. The Oakland library system has adequate capacity to serve the incremental increase in library use that would result from the implementation of the proposed project and would not require the unanticipated construction of new or remodeled library facilities.

[27] Vital, Kristen, 2007, op. cit.

[28] Ibid.

(5) Parks and Recreation. The proposed project would increase the permanent population at the site, thus increasing the demand for parks and recreation facilities. With a maximum of 675 new residential units and 18 live/work units, the proposed project would result in increases to the North Oakland Planning Area population by up to 1,845 residents. Using the City ratio of 4 acres of local-serving parkland per 1,000 residents ratio, the additional 1,845 project residents would yield an increase demand of 7.38 acres of parkland in North Oakland. The OSCAR Element recognizes that this area is densely urbanized and that area for new parkland is scarce. Though no new public parkland is included within the project area, the project does comply with the relevant OSCAR Element recommendations for North Oakland by incorporating a public plaza and attractive pedestrian environment on Village Drive (the proposed east/west street connecting Telegraph Avenue and Entry Drive) and new landscaping and other streetscape improvements along Telegraph Avenue.

Although the proposed project would increase the resident population and does not include new publicly-accessible park and recreation space (except for the proposed the public plaza on Village Drive) within the densely-populated North Oakland Planning Area, the project is not expected to result in substantial or accelerated physical deterioration of existing parks and open space. The project would further the OSCAR Element planning recommendations for North Oakland as discussed above.

The conceptual site plan for the proposed project (see Figures III-3 in Chapter 3, Project Description) includes approximately 60,000 square feet of group open space (about 90 square feet per unit). The group open space areas include the common area courtyards, common landscape areas, and the transit village plaza (west of Building A). The conceptual plans currently do not show any private open space areas. However, the project will include private balconies on approximately 50 percent of the units. Additional private balconies may be incorporated as the architectural design of the buildings evolves. As proposed, the project does not meet the public and private open space requirements of the S-15 zone which require projects to include 150 square feet of group open space (common courtyards, play areas, recreation rooms, etc) and 30 square feet of private open space (decks, balconies and private yards), for a total of 180 square feet of open space per unit.[29] The City may also consider an amendment to the S-15 text to reduce the open space requirements for this site as City staff believes that the current open space requirements are excessive for

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[29] The Open Space requirements allow private open space that is provided in excess of 30 square feet per unit to be counted toward the group open space requirement at a ratio of 2 to 1, but in no case can the group open space be less than 75 square feet per unit. Therefore, the open space requirement in the S-15 zone can be satisfied by either providing 150 square feet of group open space per unit plus 30 square feet of private open space per unit; or by providing a minimum of 75 square feet of group open space plus 30 to 67.5 square feet of private open space depending on how much group open space is provided. As an example, a project that provides 50 square feet of private open space would need to provide 110 square feet of group open space per unit, as the 20 square feet of the private open space, which exceed the minimum requirement of 30 square feet, would allow the 150-square feet of group open space to be reduced by 40 square feet.

this site due to its location adjacent to BART and the Highway 24 and that the requirements could compromise achieving other City policies related to Transit Oriented Development.

The Broadway MacArthur/San Pablo Redevelopment Plan EIR[30] determined that there was a potential for residential developments in the Redevelopment Plan area to result in a lack of open space and recreational opportunities for residents. For the MacArthur BART site, the EIR stated that existing parks and open space areas could be located too far away for convenient access.[31] Based on this information, the EIR found a potential for a significant impact (Impact E.4) and included a mitigation measure (Mitigation Measure E.4).[32] The analysis, findings, and mitigation related to this potential impact in the Redevelopment Plan EIR are superseded based on this project EIR. The potential impact is not related to a significance criterion listed in the Redevelopment Plan EIR or this EIR. The significance criterion for park and recreational impacts requires a finding that the project would "result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities" or the "need for new or physically altered or physically altered governmental facilities." Impact E.4 is not based on analysis or evidence that new or physically altered facilities would be required. The need to travel the four blocks (0.3 miles) to the Mosswood Park, while not as convenient as an on-site recreational area, would not constitute a significant adverse environmental under CEQA. These trips would occur during off-peak hours and thus would not result in any significant adverse traffic or transportation impacts. Additionally, access from the project site to the park has been, or will be improved, in several ways. The shuttles provided by the recently approved Kaiser Hospital project will provide convenient service for residents between the project site and Mosswood Park. The MacArthur BART project would improve conditions for pedestrian crossing at the adjacent crosswalks leading to Mosswood Park. The City's 2007 Bicycle Master Plan Update proposes Class II bicycle lanes on West MacArthur Boulevard that would connect the project to Mosswood Park. The recommendations included in Section IV.C, Transportation, Circulation and Parking, such as implementation of protected left-turn phasing and removal of the slip right turns at the West MacArthur Boulevard/Telegraph Avenue intersection, would improve pedestrian and bicycle safety and encourage more pedestrian and bicycle activity.

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[30] Environmental Science Associates (ESA), 2000. *Broadway/MacArthur/San Pablo Redevelopment Plan, Draft Environmental Impact Report,* April.

Environmental Science Associates (ESA), 2000. *Broadway/MacArthur San Pablo Redevelopment Plan, Final Environmental Impact Report,* June.

[31] The EIR assumed that the project site would be developed with 85,000 square feet of medical use, 50,000 square feet of commercial use, 30,000 square feet of retail use and 150 residential units.

[32] Mitigation Measure E.4 required all residential developments under the Plan to provide the minimum open space required by the zoning regulations, with no variances, conditional use permits or PUDS to reduce the required open space and required secure recreational areas and a grassy open space.

Since the certification of the Redevelopment Plan EIR, the Agency has determined that the primary goals for the redevelopment of the MacArthur BART site are high density, mixed use, transit-oriented development with an affordable housing component and improved access to BART for all travel modes. A significant open space component at this site would impede achieving these goals.

c. Significant Public Services Impacts. The proposed project would not result in any significant impacts to police, fire, school, library, or parks and recreation services.

d. Cumulative Public Service Impacts. The geographic area considered for the public services cumulative analysis includes the City of Oakland since the majority of the services provided are provided throughout the City. The increased population and density resulting from the project, in conjunction with population and density of past, present, existing, pending and reasonably foreseeable future development in the City, would result in a cumulative increase in the demand for public services, parks, and recreation facilities. This cumulative increase could result in the need for new or physically altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives. However, future development would occur pursuant to General Plan policies and mitigation measures adopted for the Land Use and Transportation Element (LUTE) EIR and the Broadway MacArthur/San Pablo Redevelopment Plan EIR that reduce the potential impact on services to less-than-significant levels. As a result, implementation of the proposed project together with the impact of past, present and reasonably foreseeable future development would not result in significant cumulative public service impacts as described below.

(1) Fire and Police. Cumulative development in the City of Oakland, including past, present, existing, pending and reasonable foreseeable future development, would increase the need for additional City police, BART police, and City fire protection services and could affect response times, service levels, and the need for additional facilities. While the City and BART monitor staffing levels and facilities on an annual basis as part of the their budgetary processes and on an ongoing basis as individual development projects are proposed, cumulative development could increase the demand for police and fire-related services such that response times or service levels could not be maintained, and/or additional equipment and/or facilities could be required but are not provided due to budgetary or logistical constraints.[33] [34]Consistent with the conclusion of the Broadway MacArthur/San Pablo Redevelopment Plan EIR, this cumulative impact is not expected to

[33] Johnson, Michael, 2008. Lieutenant, Oakland Police Department. Verbal communication with RRM Design Group. January 24.

[34] Edwards, James D., 2008. Deputy Chief, Fire Prevention Bureau/Communications, Oakland Fire Department. Verbal communication with RRM Design Group. January 24.

result in a significant cumulative impact as the cumulative demand for services would be mitigated to less than significant levels through individual project planning, design, and approvals, and if necessary, through the expansion of fire protection services, through the use of tax increment funds, to accommodate growth. For the project, the Oakland Police, BART Police, and Fire Departments do not anticipate the need for any new physical facilities to adequately service the resulting increase in daytime and nighttime population on the project site. Additionally, the project would incorporate design measures aimed to heighten safety (through lighting, access, and visibility) to public spaces and would develop emergency response and security plans in coordination with the relevant City departments. In addition, throughout the course of the development review process, the police and fire departments will review plans and other physical features which will provide enhanced life safety standards, such as exterior lighting levels, fire hydrants locations, and other facilities. Therefore, the project's contribution to the significant cumulative impact on police services and fire protection/emergency medical services would be less than significant.

(2) Public Schools. School-aged children generated by the project, in conjunction with those generated by other foreseeable development in the City, would result in a cumulative increased demand. However, since the schools are projected to be operating under capacity in 2012, such an increase would not result in the need for new or physically altered school facilities in order to maintain acceptable service ratios or other performance objectives at local public schools. Additionally, pursuant to Senate Bill 50 (SB 50), the project sponsors of all future projects would be required to pay school impact fees established to offset potential impacts on school facilities. As a result, no significant cumulative impacts would result.

(3) Libraries. Development in North Oakland, including the proposed project, would result in an increased population, which could result in the need for new or expanded library facilities. The Oakland Public Library has prepared Master Facilities Plan that includes a needs assessment and long-range strategy to address the community's growing needs for library services, which takes into account the long-term population growth anticipated for the City. The plan is funded by a bond measure passed in March 2004 to facilitate library improvements and expansion. As part of this effort, the library is evaluating ways the existing libraries could improve the delivery of programs, services, and materials. Thus, library system improvements are underway to address cumulative demand. The proposed project would increase the population served by the Piedmont and Temescal Branches (which are less than one mile from the project site), and thus there would be a greater cumulative demand for books, library programs, and resources. The increased population from the proposed project would result in a greater utilization of library facilities but would not result in the expansion of the facility beyond what is already being proposed as part of the Master Facilities Plan. Consequently, the Project would not be expected to have a considerable contribution to a cumulative impact that would require a new or expanded branch library.

(4) Parks and Recreation Facilities. As stated in the OSCAR Element and noted above, the City is falling short in the North Oakland area, as well as other areas, of meeting its goal of providing 10 acres per 1,000 residents. The proposed project, in conjunction with other past, present, planned and foreseeable development under the cumulative scenario, would contribute to the need for new or expanded park and recreational facilities citywide necessary to achieve the goals set forth in the OSCAR Element. However, the fact that this goal is not met would not necessarily result in a physical environmental impacts. According to the City's Park and Recreation Department,[35] based on the size and current and projected use of park and open space facilities, there are adequate facilities in the project area to serve the project, past and present projects, and anticipated future development. Moreover, it is not expected that there will be a substantial or accelerated physical deterioration of existing park and open space facilities. Therefore, no significant cumulative impacts are expected.

[35] Ryugo, James, 2007. Building Services Manager, Public Works Agency. Verbal communication with RRM Design Group, October 20.

J. UTILITIES AND INFRASTRUCTURE

This section describes existing utility systems in the vicinity of the project site, discusses policies relevant to these systems, evaluates potential impacts resulting from implementation of the proposed project, and identifies mitigation measures to reduce the significance of potential impacts. The analysis examines water supply, wastewater, storm drainage, solid waste and energy.

1. Setting

This section describes existing conditions, as they relate to the proposed project, of the water supply, treatment, and distribution system; the wastewater treatment and collection system; solid waste collection and disposal; storm drainage; natural gas and electric utilities; and telecommunications services in the City of Oakland. Relevant planning policies are also described.

a. Utilities and Infrastructure. A description of the utility infrastructure serving the project site and vicinity is provided below.

(1) Water. The project site is served by existing water supplies, treatment facilities, and distribution systems, which are operated and managed by the East Bay Municipal Utility District (EBMUD) as described below. Information in this section is based on information provided in the EBMUD *Urban Water Management Plan*[1] and the Water Supply Assessment (WSA)[2] prepared for the proposed project and included as Appendix D.

Water Supply. EBMUD provides potable water to approximately 1.3 million people throughout portions of Alameda and Contra Costa counties, including the City of Oakland. EBMUD obtains approximately 90 percent of its water from the Mokelumne River watershed, and transports it through pipe aqueducts to temporary storage reservoirs in the East Bay hills. EBMUD has water rights and facilities to divert up to a daily maximum of 325 million gallons per day (mgd) from the Mokelumne River.[3] However, this allocation may be constrained by: upstream water use by prior water right holders; downstream water use and other downstream obligations, including protection of public trust resources; drought, or less-than-normal rainfall for more than a year; and emergency outage.

[1] East Bay Municipal Utility District, 2005. *Draft Urban Water Management Plan 2005*. September.

[2] East Bay Municipal Utility District, 2005. *Water Supply Assessment for MacArthur Transit Village Project, Oakland.* September 11.

[3] East Bay Municipal Utility District, 2005, op. cit.

Average daily water demand within the EBMUD service area was 211 mgd in 2006.[4] This demand is adjusted for conservation and recycled water program savings. Demand is projected to increase to 258 mgd by 2010 and 277 mgd by 2020.[5] The Mokelumne River can no longer meet EBMUD's projected customer demands during drought periods, even with 25 percent rationing imposed on total customer demand.[6]

EBMUD is actively involved in securing supplemental water supplies to meet customer demands during drought periods. In dry years, the Freeport Regional Water Project (FRWP) would deliver up to 100 mgd of water from the Sacramento River to EBMUD customers. The FRWP is anticipated to be in service by 2009. Implementation of this and other water supply projects would reduce the potential for severe water rationing and associated economic losses during drought periods.

Water Treatment Facilities. There are six water treatment plants in the EBMUD water supply and distribution system. Combined, the six plants have a treatment capacity of over 375 mgd. The Orinda Water Treatment Plant (WTP) supplies water to portions of Oakland, including the project site. The Orinda WTP has the largest output of EBMUD's treatment plants with a peak capacity of 200 mgd and is currently operating at approximately 70 percent capacity.[7] At the treatment plant, water is subject to coagulation, filtration, and disinfection prior to being distributed to the public.

Water Distribution Systems. Water distribution systems in Oakland are divided into pressures zones covering approximately 200-foot elevation ranges. As a result, water pressure ranges from 40 to 130 pounds per square inch (psi). The project site is located in the Central Pressure Zone, which provides water service to customers within an elevation range of 0 to 100 feet. Water pressure is generally adequate throughout the City, but pressure may be reduced in some locations with older water mains if they are not sized based on current standards or have lost capacity due to deterioration. Typically, required pipeline relocations and extensions, in addition to other water distribution infrastructure improvements, are made at the expense of the project applicant in consultation with EBMUD's New Business Office.

The project area is served by 6-inch water mains located beneath 39th Street and Apgar Street. The Oakland Fire Department maintains a minimum fire flow standard of 1,500 gpm

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[4] East Bay Municipal Utility District, 2006. *Annual Report 2006*.

[5] East Bay Municipal Utility District, 2005, op. cit.

[6] Ibid.

[7] East Bay Municipal Utility District, 2005. *Daily Water Supply Report*. August 5. http:www.ebmud.com/water_&_environment/water_supply/daily_reports/default.htm.

and these lines and associated minor water line connections, are anticipated to have an available capacity.

(2) Wastewater System. The project sites are located in areas served by existing wastewater treatment facilities and collection systems operated and managed by EBMUD.

Wastewater Treatment Facility. EBMUD provides wastewater services to approximately 642,000 people in Alameda and Contra Costa counties.[8] Wastewater collected by interceptors in the EBMUD service area Special District No. 1, which includes the City of Oakland, flows to the Main Wastewater Treatment Plant (MWWTP), which is located in Oakland near the eastern entrance of the San Francisco-Oakland Bay Bridge. Additionally, EBMUD has two wet weather wastewater treatment facilities (WWF) in Oakland, the San Antonio Creek WWF and the Oakport WWF.

The MWWTP provides both primary and secondary treatment of wastewater. Primary treatment involves the removal of floating materials, oils and greases, sand and silt, and organic solids sufficiently heavy to settle in water. Secondary treatment involves the removal of suspended organic and chemical impurities. The MWWTP has a primary treatment capacity of 320 mgd and a secondary treatment capacity of 168 mgd. Storage basins provide plant capacity for a short-term hydraulic peak of 415 mgd. The average annual daily flow into the MWWTP is approximately 80 mgd, representing 48 percent of the plant's secondary treatment capacity.[9] Treated effluent is disinfected, dechlorinated, and discharged through a deep-water outfall 1 mile off the East Bay shoreline into San Francisco Bay.

In addition, EBMUD has been recycling water at its main wastewater treatment facility since the early 1970s. Recycled water is suitable for land uses that do not require potable water sources, such as golf courses, some agricultural areas, and industrial uses. EBMUD provided more than 8 mgd of recycled water to customers in 2004 and has a goal to recycle 14 mgd by 2020.[10] Incentives used by EBMUD to encourage customers to utilize recycled water include rate discounts on recycled water and low-interest loans used to retrofit buildings so that they can accommodate recycled water.

In January 2002, the City adopted a dual plumbing ordinance, which requires new development to use recycled water provided by EBMUD, and to install a dual plumbing system if recycled water is anticipated to be available. The multi-phased East Bayshore

[8] East Bay Municipal Utility District, 2005, op. cit.

[9] East Bay Municipal Utility District, 2005. Wastewater Treatment. http://www.ebmud.com/-wastewater/treatment/. August 23.

[10] East Bay Municipal Utility District, 2005, op. cit.

Recycled Water Project will supply up to 2.5 mgd of recycled water to portions of Alameda, Albany, Berkeley, Emeryville, and Oakland.

Recycled water use is not planned within the project area.

Wastewater Collection System. The City owns and maintains approximately 1,000 miles of sewer collection pipelines and 7 pump stations within Oakland. Most of the City's wastewater collection system is 50 years old and some of the existing infrastructure is as old as 100 years. The sewer system is connected to trunk lines which convey flows to EBMUD's wastewater interceptors, which consist of 29 miles of reinforced concrete pipes ranging from 1 to 9 feet in diameter. Wastewater from the project site is conveyed through these interceptors to the MWWTP.

The project site is currently served by existing sewer infrastructure located beneath surrounding roadways. Existing infrastructure consists of 36-inch pipelines located beneath 34th, 36th, and 40th Streets and Telegraph Avenue and an 8-inch pipeline located beneath West MacArthur Boulevard. Lateral connections from existing and proposed buildings must be a minimum of 4 inches in diameter. The project site is situated in sewer Sub-basins 50-01 and 50-04. Connections to the sewer system in Telegraph Avenue are part of Sub-basin 50-04 and connections to the sewer system in 40th Avenue are part of Sub-basin 50-01.[11]

The City of Oakland's infiltration/inflow correction program consists of a 25-year capital improvement program to rehabilitate the existing system in cost-effective areas and add capacity where needed. This program anticipates a 20 percent growth rate throughout Oakland. Mitigation fees are assessed to all new development or redevelopment in sub-basins that have a growth rate greater than 20 percent. This fee represents the development's pro-rata share of the improvements identified by the 25-year plan in anticipation of the greater-than-20 percent development.

(3) Stormwater. The Alameda County Flood Control District was created in 1949 by the State Legislature to provide flood control services to Alameda County. The District's flood control infrastructure includes hundreds of miles of pipelines, channels, creeks, erosion control measures and pump stations. The City of Oakland is within Zone 12, which also includes the City of Emeryville, and is the largest of the District's zones. Zone 12 has approximately 50 miles of closed conduit, approximately 10 miles of earthen and concrete channels, as well as the existing natural waterways, which move stormwater to the San Francisco Bay.[12] Four pump stations (Lake Merritt, Ettie, McKillop, and Temescal) lift

[11] Santoso, Gunawan, 2007. Civil Engineer, City of Oakland Engineering Design and ROW Management. Written communication with LSA Associates Inc. July 11.

[12] Alameda County Flood Control and Water Conservation District, 2005. *Report to the Community, Fiscal Year 2005.*

stormwater to the Bay. The project site is within the 14th Avenue Creek, San Antonio, and Damon Slough Watershed.

Recent Flood Control District projects include: modifying Lake Merritt Pump Station for increased channel flow and ease of maintenance; repairs to Glen Echo Creek (Line B); $7.8 million upgrades to Trestle Glen Creek (line D) and Line D-1 in the Lake Merritt area; restoration of Sausal Creek, Peralta Creek and Arrojo Viejo Creek; realignment of Lions Creek (Line J); repair of pump 4 at Ettie Street Pump Station; coordinating restoration designs for Peralta Creek (Line F). Fiscal Year 2006 projects planned for Zone 12 include: Pump 3 rehabilitation at the Ettie Street Pump Station; restoration and gate reconstruction on Lion Creek (Line J); and rehabilitation of Lake Merritt Pump Station.

The City of Oakland's storm drainage system consists of more than 300 miles of storm drainpipes and 15,000 structures (mostly inlets, manholes, and catch basins). The storm drain system is a network of disjointed private and public drainage ways. City-owned drainage systems are improved drainage facilities located within easements and rights-of-way.[13] Runoff on the impervious portions of the site is directed by sheetflow primarily towards curbside storm drains. Existing storm drainage facilities within the vicinity of the project site include 36-inch conduits located beneath Telegraph Avenue.[14]

(4) Solid Waste. Solid waste and yard trimmings within the City of Oakland are collected by Waste Management of Alameda County. These materials are taken to the Davis Street Transfer Station in San Leandro. The Transfer Station, which has a maximum allowable capacity of 5,600 tons of waste per day, received an average of 3,028 tons per day in 2003.[15] The facility can process up to 320 tons per day of concrete, asphalt, dirt, bricks, wood, and metal. After undergoing processing, waste from the Transfer Station is delivered to the Altamont Landfill in eastern Alameda County. The landfill comprises approximately 2,170 acres (480 acres of permitted landfill area) and has a permitted maximum daily disposal of 11,150 tons per day and an average input of 7,505 tons per day. The landfill is projected to have sufficient capacity to operate until at least 2031 and potential to operate through 2071, depending on waste flows and waste reduction measures.[16]

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[13] City of Oakland, 2004. *Public Works Agency Standards, Storm Drainage Design Guidelines*. November.

[14] Oakland, City of, 1974. Sewer and Storm Drainage Infrastructure Maps. Revised June 19.

[15] Alameda County Waste Management Authority, 2003. *Alameda County Integrated Waste Management Plan*. February 26.

[16] Ibid.

In 1989, the California Legislature enacted the California Integrated Waste Management Act (AB 939), which requires the diversion of waste materials from landfills in order to preserve the decreasing capacity of landfills. Cities and counties in California were required to divert 25 percent of solid waste by 1995, and 50 percent of solid waste by the year 2000. The City of Oakland met this requirement by diverting 65 percent or greater of its waste from 2000 through 2004.[17,18] AB 939 further requires every city and county to prepare two documents demonstrating how the mandated rates of diversion will be achieved. The Source Reduction and Recycling Element describes the chief source of the jurisdiction's waste, the existing diversion programs, and current rates of waste diversion and new or expanded diversion programs. The Household Hazardous Waste Element describes each jurisdiction's responsibility in ensuring that household hazardous wastes are not mixed with non-hazardous solid wastes and subsequently deposited at a landfill. Oakland's Source Reduction and Recycling Element and its Household Hazardous Waste Element were approved in 1995 by the California Integrated Waste Management Board.[19]

The City provides curbside recycling within the City, including the project site. Curbside recycling includes the following materials: glass, aluminum and tin, motor oil, cardboard, magazines and newsprint, and plastic. Recyclable materials are delivered to the Davis Street Transfer Center where they are processed.

Oakland Municipal Code Chapter 15.34 requires building permit applications for new construction, demolition, or alterations and additions (with a valuation of $50,000 or greater) to be accompanied by an approved Waste Reduction and Recycling Plan (WRRP). The WRRP is required to document the ways that the applicant will reduce the quantity of construction and demolition debris disposed at landfills by 65 percent or more. The City does not approve building permits for projects until the WRRP is approved.

The California Integrated Waste Management Board (CIWMB) estimates an average waste generation rate of 2.5 pounds per 1,000 square feet of commercial use[20] and 5 pounds per unit per day for multi-family residential uses.[21]

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[17] California Integrated Waste Management Board, 2005. *Jurisdiction Profile for City of Oakland, Waste Stream Information Profiles*. www.ciwmb.ca.gov/profiles/.

[18] Mosley, Ferial, Recycling Specialist, 2007. Written communication with RRM Design Group, October 22.

[19] California Integrated Waste Management Board, 2005, op. cit.

[20] Integrated Waste Management Board, 2007. *Estimated Solid Waste Generation Rates for Commercial Establishments*. Website: www.ciwmb.ca.gov/WasteChar/WasteGenRates/Commercial.htm. June.

[21] Integrated Waste Management Board, 2007. *Estimated Solid Waste Generation Rates for Residential Developments*. Website: www.ciwmb.ca.gov/WasteChar/WasteGenRates/Residential.htm. June.

(5) Energy. The Pacific Gas & Electric Company (PG&E) provides electricity and natural gas service to the City of Oakland, including the project site. Most of Oakland's electrical power is delivered via 12-kilovolt (kV) transmission lines from PG&E Substation L. Substation L receives 155 kV and distributes power to upper downtown Oakland and West Oakland. Local electric and gas distribution lines are located within the project sites. PG&E charges connection and user fees for all new development in addition to sliding rates for electrical and natural gas service based on use. These services are currently available at the project site.

Title 24, California's Energy Efficiency Standards for Residential and Nonresidential Buildings, details requirements to achieve minimum energy efficiency standards of the State of California. The standards apply to new construction of both residential and nonresidential buildings, and regulate energy consumed for heating, cooling, ventilation, water heating and lighting. Compliance with these standards is verified and enforced through the local building permit process.

b. Regulatory Setting. The main documents that are applicable to utilities and infrastructure within and around the project site are the Land Use and Transportation Element of the General Plan and Standard Conditions of Approval.

(1) Oakland General Plan. The Land Use and Transportation Element of the Oakland General Plan includes the following policies related to the provision of utilities and infrastructure:

- Policy N.12.4: Electrical, telephone, and related distribution lines should be undergrounded in commercial and residential areas, except where special local conditions such as limited visibility of the poles and wires make this unneeded. They should also be underground in appropriate institutional, industrial, and other areas, and generally along freeways, scenic routes, and heavily traveled streets. Programs should lead systematically toward the eventual undergrounding of all existing lines in such places. Where significant utility extensions are taking place in these areas, such as in new subdivisions, utilities should be installed underground at the start.

(2) City of Oakland's Standard Conditions of Approval. The City's Standard Conditions of Approval relevant to this impact topic are listed below for reference. The conditions of approval will be adopted as requirements of the proposed project if the project is approved by the City to help ensure no significant impacts (for the applicable topic) occur, as a result they are not listed as mitigation measures.

COA UTIL-1: Waste Reduction and Recycling. The project applicant will submit a Construction & Demolition Waste Reduction and Recycling Plan (WRRP) and an Operational Diversion Plan (ODP) for review and approval by the Public Works Agency.

Prior to issuance of demolition, grading, or building permit. Chapter 15.34 of the Oakland Municipal Code outlines requirements for reducing waste and optimizing construction and demolition (C&D) recycling. Affected projects include all new construction, renovations/ alterations/modifications with construction values of $50,000 or more (except R-3), and all demolition (including soft demo).The WRRP must specify the methods by which the development will divert C&D debris waste generated by the proposed project from landfill disposal in accordance with current City requirements. Current standards, FAQs, and forms are available at www.oaklandpw.com/Page39.aspx or in the Green Building Resource Center. After approval of the plan, the project applicant shall implement the plan.

Ongoing. The ODP will identify how the project complies with the Recycling Space Allocation Ordinance, (Chapter 17.118 of the Oakland Municipal Code), including capacity calculations, and specify the methods by which the development will meet the current diversion of solid waste generated by operation of the proposed project from landfill disposal in accordance with current City requirements. The proposed program shall be in implemented and maintained for the duration of the proposed activity or facility. Changes to the plan may be re-submitted to the Environmental Services Division of the Public Works Agency for review and approval. Any incentive programs shall remain fully operational as long as residents and businesses exist at the project site.

COA UTIL-2: Storm Water and Sewer. *Prior to completing the final design for the project's sewer service.* Confirmation of the capacity of the City's surrounding stormwater and sanitary sewer system and state of repair shall be completed by a qualified civil engineer with funding from the project applicant. The project applicant shall be responsible for the necessary stormwater and sanitary sewer infrastructure improvements to accommodate the proposed project. In addition, the applicant shall be required to pay additional fees to improve sanitary sewer infrastructure if required by the City. Improvements to the existing sanitary sewer collection system shall specifically include, but are not limited to, mechanisms to control or minimize increases in infiltration/inflow to offset sanitary sewer increases associated with the proposed project. To the maximum extent practicable, the applicant will be required to implement Best Management Practices to reduce the peak stormwater runoff from the project site. Additionally, the project applicant shall be responsible for payment of the required installation or hook-up fees to the affected service providers.

2. Impacts and Mitigation Measures

This section discusses potential impacts to infrastructure and utility systems that could result from implementation of the proposed project. The section begins with the criteria of significance, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, if appropriate. Stormwater and storm drain-related impacts are discussed in Section IV.H, Hydrology and Water Quality.

a. Criteria of Significance. The proposed project would have a significant impact on the City's infrastructure and utility systems if it would:

- 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;
- Exceed wastewater treatment requirements of the San Francisco Bay Regional Water Quality Control Board;
- 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;
- Require or result in construction of new storm water drainage facilities or expansion of existing facilities, construction of which could cause significant environmental effects;
- 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;
- Violate applicable federal, State, and local statutes and regulations related to solid waste;
- Violate applicable federal, State and local statutes and regulations relating to energy standards; or
- 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.

b. Less-than-Significant Utilities and Infrastructure Impacts. Development of the proposed project would result in the following less-than-significant impacts to utilities and infrastructure.

(1) Water Supply and Distribution. California Senate Bill 610 (SB 610) requires that water retailers demonstrate whether their water supplies are sufficient to meet the projected demand of certain large development projects. In accordance with SB 610, EBMUD prepared a Water Supply Assessment (WSA)[22] for the proposed project. In the WSA, EBMUD determined that the project's estimated water demand is accounted for in EBMUD's 2030 water demand projections. According to EBMUD, at buildout, the total increase in water demand resulting

[22] East Bay Municipal Utility District, 2005. *Water Supply Assessment for MacArthur Transit Village Project, Oakland.* September 11.

from the proposed project would be approximately 134,300 gpd, an increase of approximately 127,000 gpd over the existing on-site demand of 7,300 gpd. The proposed project would not change EBMUD's 2030 water demand projection and would not result in a new significant increase in water use. While the project would require water main extensions to create service connections to new buildings on each development site, which would be coordinated and financed by the project sponsors, the project would not exceed existing or projected water supply or result in the need for new or expanded water facilities.

In addition, the City's master planning for the distribution system that conveys potable water to customers takes into account future demand projected in the *Urban Water Management Plan*. Adequate capacity of existing water mains to accommodate increased demand generated by the proposed project would be assessed prior to approval of final development plans.[23] If line improvements are required due to the age and condition of the existing lines, upgrades would be made during the project construction period and would not be anticipated to result in significant environmental impacts. Increased water deliveries to the project site would not require additional storage or pumping capacity or require substantial modifications to the existing water lines located within the project site. As such, the proposed project would have a less-than-significant impact on water distribution infrastructure.

Additionally, minimum fire flow requirements (for the purpose of fighting fires) would be assessed at the time of project funding. As previously described, the OFD maintains a minimum fire flow standard of 1,500 gpm.

(2) Wastewater Treatment and Collection. The City of Oakland *Sanitary Sewer Design Guidelines* include average daily flow rates for specific types of development. The average daily flow rate for apartments/condominiums ranges between 150 and 250 gallons per day per unit (gpd/unit)[24] for residential uses and 100 gallons per day per 1,000 gross square feet of commercial uses. Average daily flow rates for the proposed project are shown in Table IV.J-1. As shown, development of the proposed project would result in the generation of approximately 134,250 gpd of wastewater (approximately 0.13 mgd).

Wastewater generated by the proposed project represents less than 0.07 percent of the MWWTP's secondary treatment capacity. This wastewater would be accommodated by the MWWTP, which is currently operating at 48 percent of its secondary treatment capacity. The increase in wastewater generated by the proposed project is not substantial in the context

[23] Kirkpatrick, William R., 2007. Manager of Water Distribution Planning, East Bay Municipal Utility District. Letter to Charity Wagner, Contract Planner, City of Oakland. Comments on Revised Notice of Preparation of a Draft EIR for the MacArthur Transit Village Project. June 22.

[24] City of Oakland, 2005. *Public Works Agency Standards, Sanitary Sewer Design Guidelines*, Effective: November 2004, revised August 18.

of the entire volume of wastewater processed by EBMUD's Main Wastewater Treatment Plant. EBMUD has sufficient capacity to treat wastewater flows from the proposed project during dry weather[25] and would not require or result in construction of new wastewater treatment facilities or expansion of existing facilities. As such, the proposed project would have a less-than-significant impact on wastewater treatment facilities.

Table IV.J-1 Projected Wastewater Generation

Proposed Use	Number of Units/Square Footage	Generation Rate	Total GPD[a]
1-Bedroom Condo	203 Units	150 gpd	30,450
2-Bedroom Condo	382 Units	200 gpd	76,400
3-Bedroom Condo	90 Units	250 gpd	22,500
Commercial	44,0 00 Sq.Ft.	100 gpd per 1,000 Sq.Ft.	4,400
Community Space	5,000 Sq.Ft.	100 gpd per 1,000 Sq.Ft.	500
Total			***134,250***

[a] GPD = gallons per day.
Source: City of Oakland, 2005. *Public Works Agency Standards, Sanitary Sewer Design Guidelines.*

The proposed project would connect to existing 36-inch sanitary sewer lines located beneath 40th Streets and Telegraph Avenue. Wastewater would flow to 36-inch lines beneath 34th and 36th Streets, which empty into EBMUD's interceptors. The project site is located in Subbasin 50-01 and 50-04, and the City of Oakland PWA has indicted that these basins do not have enough capacity to take the project's projected sewer base flow. In response, PWA has indicated that the project sponsor would be required to pay for an off-site sewer rehabilitation project to off-set the increase in sewer flow.

The subbasin allocation system is the method by which EBMUD and the City of Oakland ensure that the City does not exceed its city-wide allocation as part of the Wet Weather program. The City has determined that with the proposed project it would exceed its subbasin allocation. Therefore, portions of unused allocation would be re-allocated, through coordination with agreements with EBMUD, to the relevant subbasins to accommodate the project's projected demand. As of the date of publication of this Draft EIR, this re-allocation has not occurred. As there is sufficient system-wide conveyance and treatment capacity dedicated to the City of Oakland, the fact that the project would cause Subbasin 50-01 and 50-04 to exceed its wet weather allocation prescribed by the City, is not a physical impact.

Implementation of the City's Stormwater and Sewer Standard Condition of Approval (see COA UTIL-2 on page 388) would ensure that the required impact fees are paid and no significant physical impacts occur.

In addition, all new and upgraded sanitary sewer infrastructure would be designed in accordance with the City's *Sanitary Sewer Design Guidelines* and would adhere to accepted

[25] Kirkpatrick, William R., 2007, op. cit.

engineering principles. In all newly developed areas and/or in all existing area where new sanitary sewers are required, the design is required to include the provisions that the sewer system size and capacity can adequately accommodate the ultimate anticipated conditions.

(3) Storm Drainage. The proposed project is not expected to substantially change the amount of impervious surface cover on the project site. However, new or reconfigured storm drainage facilities may be required to direct stormwater to the City-maintained storm drain located beneath Telegraph Avenue. The project applicant would comply with the City's *Storm Drainage Design Guidelines* and any facility improvements would be reviewed by the Public Works Agency as part of the standard approval process. Implementation of the City's Stormwater and Sewer Standard Condition of Approval (see COA UTIL-2 on page 388) would ensure that the construction of new or reconfigured storm drainage facilities would result in a less-than-significant impact.

(4) Solid Waste. The proposed project would be served by landfills with the capacity to handle solid wastes generated by both the demolition and operational phases of the proposed project.

As previously described, the CIWMB estimates an average waste generation rate of 2.5 pounds per 1,000 square feet per day for commercial uses and 5 pounds per multi-family residential unit per day. Although solid waste generation rates can vary substantially by specific use, these generation rates can be used to approximate the amount of waste that would be generated by the proposed project. The proposed project would result in the construction of up to 675 high density residential units and approximately 49,000 square feet of commercial uses (including a 5,000 square foot community center space). This would amount to an estimated addition of 3,498 pounds per day (approximately 1.75 tons per day) of solid waste. This represents less than 0.03 and 0.02 percent of the total daily permitted throughput for the Davis Street Transfer Station and the Altamont Landfill, respectively. The amount of solid waste generated by operation of the proposed project would not exceed the capacity of the Davis Street Transfer Station or the Altamont Landfill and would therefore not require the construction or expansion of landfill facilities. As such, operation of the proposed project would have a less-than-significant impact on solid waste facilities.

Demolition activities associated with the removal of existing structures, paved asphalt areas, and utilities would be subject to City of Oakland waste reduction and recycling requirements. Compliance with the City's Waste Reduction and Recycling Standard Condition of Approval (see COA UTIL-1 on page 387) and the Oakland Municipal Code Chapter 15.34, which requires implementation of a Recycling and Waste Reduction Plan for construction and demolition activities, would reduce the amount of waste generated during the construction phase of the proposed project.

In addition, California Waste Solutions currently provides recycling services to the project site. These services contribute to a reduction in solid waste generated by proposed development. The design and location of on-site recycling bins serving new development would be subject to City review and approval prior to issuance of building permits. The proposed project would comply with existing solid waste reduction requirements and would not violate applicable federal, State, and local solid waste statues and regulations.

(5) Energy. The proposed project would be subject to Title 24, California's Energy Efficiency Standards for Residential and Nonresidential Buildings and would not violate applicable regulations related to energy standards. The proposed project is located in an area that currently receives electrical and natural gas services. Connecting new buildings to existing lines would involve relatively minor improvements to the existing energy infrastructure. Energy consumption would primarily be associated with the provision of housing and commercial uses on the site. The project components would not require or result in construction of new energy facilities or expansion of existing facilities, construction of which could cause significant environmental effects. As such, the proposed project would have a less-than-significant impact on the provision of electrical services and energy consumption.

c. Significant Utilities and Infrastructure Impacts. The proposed project would not result in any significant impacts to utilities and infrastructure. Implementation of the City's Standard Conditions of Approval would ensure that potential impacts associated with storm drainage, sanitary sewer infrastructure, and demolition wastes are reduced to a less-than-significant level.

d. Cumulative Utilities and Infrastructure Impacts. The following paragraphs provide the cumulative analysis, including a description of the geographic area for each of the utility and infrastructure topics discussed above.

(1) Water Supply and Distribution. The geographic area considered for cumulative water supply impacts is the planning area for EBMUD as it is the water district that serves the City of Oakland and many other East Bay cities. As discussed above, EBMUD accounted for water demands associated with the project within the 2005 Urban Water Management Plan (UWMP), and has prepared a water supply assessment confirming that there is an adequate water supply and infrastructure to accommodate the proposed development together with past, present, existing, pending and reasonably foreseeable future development projects. The UWMP includes an analysis of past, present, existing, pending and reasonably foreseeable future development projects based on the Association of Bay Area Governments' (ABAG's) Projections 2005. Based on the ABAG Projections, the UWMP acknowledges that Oakland is continuing to see revitalization of its downtown area and additional redevelopment is forecasted, with the City of Oakland accounting for the largest share of Alameda County's household growth. The UWMP assumes that almost 45,000 households will be added to Oakland between 2000 and 2030. As a result, no significant cumulative impacts related to water are anticipated to occur.

(2) Wastewater. The geographic area considered for the wastewater treatment cumulative analysis is the City of Oakland as the City owns, operated and maintains the wastewater collection system for the City of Oakland. The project site is located within Sub-basin 50-01 and 50-04. EBMUD allocates a certain amount of sewer flow that may be discharged into the interceptor system. Each sub-basin encompasses a specific physical area, and its sewer flows are assigned to a single discharge point from the City's collection system into the EBMUD South Interceptor. The sub-basin allocation system is the method by which EBMUD and the City of Oakland ensure that the City does not exceed its city-wide allocation as part of the Wet Weather program. The City has determined that with the proposed project would exceed its sub-basin allocation. Therefore, portions of unused allocation would be re-allocated, through coordination with agreements with EBMUD, to the relevant sub-basins to accommodate the project's projected demand. As there is sufficient system-wide conveyance and treatment capacity dedicated to the City of Oakland, the fact that the project would cause Subbasin 50-01 and 50-04 to exceed its wet weather allocation prescribed by the City, is not a physical impact and it would not be considered a significant cumulative impact. The allocation system utilized enables EBMUD to ensure that the capacity of its wastewater transport and treatment system is adequate to serve past, present, existing, pending and reasonably foreseeable future development projects.

Inabilities to handle wet weather flows are also a concern of EBMUD. The City of Oakland implements an inflow and infiltration correction program (IICP) to reduce wet weather overflows into its sanitary sewer system. The IICP sets a maximum allowable peak wastewater flow from each sub-basin within the City. The IICP is expected to increase the capacity of the collection system to allow an approximately 20 percent increase in wastewater flows. The City's Public Works Department has stated that it can accommodate the Project-related increases in sewer flows, both under average dry-weather and peak wet weather conditions, within their existing sewage collection and transport system. Similarly, EBMUD has also stated that it can accommodate the projected increases in sewer flow within their wastewater treatment system. Furthermore, the City's implementation of its Standard Conditions of Approval and adherence to the provisions of the IICP would help decrease the amount of inflow and infiltration into the existing wastewater transport system. As a result, past, present, existing, pending and reasonably foreseeable future development projects are not anticipated to require or result in the construction of new wastewater treatment facilities or the expansion of existing facilities; as a result, no significant cumulative impact would occur.

(3) Solid Waste. The proposed project together with past, present, existing, pending and reasonably foreseeable future development projects would result in a net increase of solid waste. As discussed above, the waste generated by the proposed project would amount to an estimated addition of 3,498 pounds per day (approximately 1.75 tons per day) of solid waste. This represents less than 0.03 and 0.02 percent of the total daily permitted throughput for the Davis Street Transfer Station and the Altamont Landfill, respectively. The amount of solid waste generated by operation of the proposed project together with past, present, existing, pending and reasonably foreseeable future development projects is would not exceed the capacity of the Davis Street Transfer Station or the Altamont Landfill and would therefore not require the construction or expansion of landfill facilities. The landfill is projected to have sufficient capacity to operate until at least 2031 and potential to operate through 2071, depending on waste flows and waste reduction measures. As such, the project would not result in a significant cumulative impact related to solid waste. Additionally, demolition activities associated with the removal of existing structures, paved asphalt areas, and utilities for development projects would be subject to City of Oakland waste reduction and recycling requirements. Compliance with the City's Waste Reduction and Recycling Standard Condition of Approval (see COA UTIL-1 on page 387) and the Oakland Municipal Code Chapter 15.34, which requires implementation of a Recycling and Waste Reduction Plan for construction and demolition activities, would help reduce the amount of waste generated during the construction of all new development projects.

(4) Energy. The proposed project together with past, present, existing, pending and reasonably foreseeable future development projects would increase demand for electricity and natural gas as land uses intensify and covert to higher density uses within the City of Oakland, but not to the extent that energy providers have identified a significant adverse cumulative impact. As discussed above, the project would be required to meet current state and local codes concerning energy consumption, including Title 24 of the California Code of Regulations enforced by the City's Department of Building Inspection. The project therefore would not violate applicable statutes and regulations related to energy standards. No significant adverse cumulative energy impacts are expected and the project would not be expected to cause or contribute to any such impact.

K. CULTURAL AND PALEONTOLOGICAL RESOURCES

The purpose of this section is to: (1) describe the baseline conditions for cultural and paleontological resources of the MacArthur Transit Village project area; (2) describe the legal significance of identified historic architectural, archaeological, and paleontological resources within the project area; and (3) identify potentially-significant impacts to such resources that may result from project implementation, and recommend mitigations to reduce significant impacts.

Cultural resources are sites, buildings, structures, objects, and districts that may have traditional or cultural value for the historical significance they may possess. Cultural resources include a broad range of resources ranging from archaeological materials, to historic roadways and railroad tracks, to buildings of architectural significance. Generally, for a cultural resource to be considered a historical resource (i.e., eligible for listing in the California Register of Historical Resources) it must be 50 years or older.[1]

Paleontological resources include fossil plants and animals, and evidence of past life such as trace fossils and tracks. Ancient marine sediments may contain invertebrate fossils such as snails, clam and oyster shells, sponges, and protozoa; and vertebrate fossils such as fish, whale, and sea lion bones. Vertebrate land mammals may include bones of mammoth, camel, saber tooth cat, horse, and bison. Paleontological resources also include plant imprints, petrified wood, and animal tracks.

CEQA requires that effects to cultural and paleontological resources be considered in the planning process for discretionary projects.

1. Cultural Resources Setting

This section presents the results of the cultural resources analysis conducted for the project area. The following sections provide: (a) regulatory setting; (b) methods of the analysis; (c) an overview of the area's historical setting; (d) a description of the existing conditions of project area cultural resources; and (e) an overview of the area's archaeological sensitivity.

a. Regulatory Context. The following describes the CEQA and the City of Oakland Historic Preservation Element of the General Plan regulatory and policy requirements for cultural resources.

(1) CEQA Requirements. In the City of Oakland, an "historical resource" under CEQA is a resource which meets any of the following criteria:

[1] California Office of Historic Preservation, 2006:3. *California Register and National Register: A Comparison (for purposes of determining eligibility for the California Register).* Technical Assistance Series No. 6. California Department of Parks and Recreation, Sacramento.

- A resource listed in, or determined eligible for listing in, the California Register of Historical Resources (California Register);
- A resource included in Oakland's Local Register of historical resources, unless the preponderance of evidence demonstrates that it is not historically or culturally significant;
- A resource identified as significant (e.g., rated 1-5) in a historical resource survey recorded on Department of Parks and Recreation Form 523, unless the preponderance of evidence demonstrates that it is not historically or culturally significant;
- Meets the criteria for listing on the California Register of Historical Resources; or
- A resource that is determined by the Oakland City Council to be historically or culturally significant even though it does not meet the other four criteria listed here.

A historical resource consists of:

> "Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California…. Generally, a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing on the California Register of Historical Resources" *CEQA Guidelines* Section 15064.5(a)(3).

In accordance with *CEQA Guidelines* Section 15064.5(b), a substantial adverse change in the significance of a historical resource is a significant effect on the environment. A substantial adverse change in the significance of a historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired. The significance of a historical resource is "materially impaired" when a project demolishes or materially alters, in an adverse manner, those physical characteristics of the resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, a historical resource list.

CEQA requires a Lead Agency to determine if an archaeological cultural resource meets the definition of a historical resource, a unique archaeological resource, or neither (*CEQA Guidelines* Section 15064.5(c)). Prior to considering potential impacts, the Lead Agency must determine whether an archaeological cultural resource meets the definition of a historical resource in *CEQA Guidelines* Section 15064.5(c)(1). If the archaeological cultural resource meets the definition of a historical resource, then it is treated like any other type of historical resource in accordance with *CEQA Guidelines* Section 15126.4. If the archaeological cultural resource does not meet the definition of a historical resource, then the lead agency determines if it meets the definition of a unique archaeological resource as defined at CEQA Section 21083.2(g). In practice, however, most archaeological sites that meet the definition of a unique archaeological resource will also meet the definition of a historical resource.[2] Should the archaeological cultural resource meet the definition of a unique archaeological resource, then it must be treated in accordance with CEQA Section 21083.2. If the archaeological cultural resource does not meet the definition of a historical resource or an archaeological resource, then effects to the resource are not considered significant effects on the environment (*CEQA Guidelines* Section 15064.5(c)(4)).

California Health and Safety Code (HSC) Section 7050.5 states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Native American Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

Public Resources Code (PRC) Section 5097.5 provides for the protection of cultural and paleontological resources. This PRC section prohibits the removal, destruction, injury, or defacement of archaeological and paleontological features on any public lands under the jurisdiction of State or local authorities.

(2) Historic Preservation Element. The Historic Preservation Element (HPE) of the Oakland General Plan presents goals, policies, and objectives that guide historic preservation efforts in Oakland. HPE policies define the criteria for legal significance that must be met by a resource before it is listed in Oakland's local register of historical resources, and would, therefore, be considered a historical resource under CEQA. Based on a city-wide preliminary architectural inventory, the Oakland Cultural Heritage Survey (OCHS), pre-1945 properties have been assigned a significance rating of A, B, C, D, or E and assigned a number (1, 2, or 3) which indicates its district status. The ranking system, described in Table IV.K-1, indicates a property's status as a historical resource and identifies those properties warranting special consideration in the planning process. The Individual Property Rating of a building is based on the following criteria:

Visual Quality/Design: Evaluation of exterior design, interior design, materials and construction, style or type, supporting elements, feelings of association, and importance of designer.

[2] Bass, Ronald E., Albert I. Herson, and Kenneth M. Bogdan, 1999:105. *CEQA Deskbook: A Step-by-Step Guide on how to Comply with the California Environmental Quality Act*. Solano Press Books, Point Arena, California.

Table IV.K-1 Oakland Cultural Heritage Survey Significance Ratings

Rating Level	Description
A: Properties of Highest Importance	This designation applies to properties considered clearly eligible for individual National Register and City Landmark designation. Such properties consist of outstanding examples of an important style, type, or convention, or intimately associated with a person, organization, event, or historical pattern of extreme importance at the local level or of major importance at the state or national level.
B: Properties of Major Importance	These are properties of major historical or architectural value but not sufficiently important to be rated "A." Most are considered individually eligible for the National Register, but some may be marginal candidates. All are considered eligible for City Landmark designation and consist of especially fine examples of an important type, style, or convention, or intimately associates with a person, organization, event, or historical pattern of major importance at the local level or of moderate importance at the state or national level.
C: Properties of Secondary Importance	These are properties that have sufficient visual/architectural or historical value to warrant recognition but do not appear individually eligible for the National Register. Some may be eligible as City Landmarks and are superior or visually important examples of a particular type, style, or convention, and include most pre-1906 properties
D: Properties of Minor Importance	These are properties which are not individually distinctive but are typical or representative examples of an important type, style, convention, or historical pattern. The great majority of pre-1946 properties are in this category.
E, F, or *: Properties of No Particular Interest	Properties that are less than 45 years old or modernized.
District Status	**Description**
1	A property in an Area of Primary Importance (API) or National Register quality district. An API is a historically or visually cohesive area or property group identified by the OCHS which usually contains a high proportion of individual properties with ratings of "C" or higher.
2	A property in an Area of Secondary Importance (ASI) or a district of local significance. An ASI is similar to an API except that an ASI does not appear eligible for the National Register.
3	A property not within a historic district.

Note: Properties with ratings of "C" or higher or are contributors to or potential contributors to an API or ASI are considered Potential Designated Historic Properties (PDHP) that may warrant consideration for preservation by the City. The OCHS has assigned some properties a contingency rating, indicated by a lower-case letter. A contingency rating is a potential rating under some condition, such as "if restored" or "when older" or "with more information."

History/Association: Association of person or organization, the importance of any event, association with patterns, and the age of the building.

Context: Continuity and familiarity of the building within the district.

Integrity and Reversibility: Evaluation of the building's condition, its exterior and interior alterations, and any structural removals.

The HPE also establishes the following policy with respect to historical resources under CEQA:

- Policy 3.8: For the purposes of environmental review under CEQA, the following properties will constitute the City of Oakland's Local Register:
    - All "Designated Historic Properties," i.e., those properties that are City Landmarks, which contribute to or potentially contribute to Preservation Districts, and Heritage Properties;
    - Those "Potential Designated Historic Properties" that have an existing rating of "A" or "B" or are located within an "Area of Primary Importance;"
    - Until complete implementation of Action 2.1.2 (Redesignation), the "Local Register" will also include the following designated properties: Oakland Landmarks, S-7 Preservation Combining Zone properties, and Preservation Study List properties.

The HPE includes other policies that seek to encourage the preservation of Oakland's significant historic resources within the context of balanced development and growth. These policies are presented below.

- Policy 3.1: Avoid or Minimize Adverse Historic Preservation Impacts Related to Discretionary City Actions. The City will make all reasonable efforts to avoid or minimize adverse effects on the Character-Defining Elements of existing or Potential Designated Historic Properties which could result from private or public projects requiring discretionary actions.
- Policy 3.4: City Acquisition of Historic Preservation Where Necessary. Where all other means of preservation have been exhausted, the City will consider acquiring, by eminent domain if necessary, existing or Potential Designated.

Historic Properties, or portions thereof, in order to preserve them. Such acquisition may be in fee, as conservation easements, or a combination thereof.

- Policy 3.5: Historic Preservation and Discretionary Permit Approvals. For any project involving the complete demolition of Heritage Properties or Potential Designated Historic Properties requiring discretionary City permits, the City will make a finding that: (1) the design quality of the proposed project is at least equal to that of the original structure and is compatible with the character of the neighborhood; or (2) the public benefits of the proposed project outweigh the benefit of retaining the original structure; or (3) the existing design is undistinguished and does not warrant retention and the proposed design is compatible with the character of the neighborhood.
- Policy 3.7: Property Relocation Rather than Demolition. As a condition of approval for all discretionary projects involving demolition of existing or Potential Designated Historic Properties,

the City will normally require that reasonable efforts be made to relocate the properties to an acceptable site.

Although the HPE focuses primarily on built environment resources, prehistoric and historical archaeological resources are also considered under the following policy:

- Policy 4.1: Archaeological Resources. To protect significant archaeological resources, the City will take special measures for discretionary projects involving ground disturbances located in archaeologically sensitive areas. This policy entails that mitigation measures are typically incorporated into the project as part of the environmental review process, which can include a surface reconnaissance by an archaeologist to identify archaeological deposits; monitoring of ground disturbance during construction to identify archaeological resources and stopping work if necessary to provide recommendations for the treatment of uncovered archaeological materials; and performing limited pre-construction archaeological excavations to determine whether archaeological materials are present.

(3) City of Oakland's Standard Conditions of Approval. The City's Standard Conditions of Approval relevant to this impact topic are listed below for reference. The conditions of approval will be adopted as requirements of the proposed project if the project is approved by the City to help ensure no significant impacts (for the applicable topic) occur, as a result they are not listed as mitigation measures.

COA CULT-1: Archaeological Resources. *Ongoing throughout demolition, grading, and/or construction*

Pursuant to CEQA Guidelines section 15064.5 (f), "provisions for historical or unique archaeological resources accidentally discovered during construction" should be instituted. Therefore, in the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and the project applicant and/or lead agency shall consult with a qualified archaeologist or paleontologist to assess the significance of the find. If any find is determined to be significant, representatives of the project proponent and/or lead agency and the qualified archaeologist would meet to determine the appropriate avoidance measures or other appropriate measure, with the ultimate determination to be made by the City of Oakland. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and a report prepared by the qualified archaeologist according to current professional standards.

In considering any suggested measure proposed by the consulting archaeologist in order to mitigate impacts to historical resources or unique archaeological resources, the project applicant shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project site while measure for historical resources or unique archaeological resources is carried out.

Should an archaeological artifact or feature be discovered on-site during project construction, all activities within a 50-foot radius of the find would be halted until the findings can be fully investigated by a qualified archaeologist to evaluate the find and assess the significance of the find according to the CEQA definition of a historical or unique archaeological resource. If the deposit is determined to be significant, the project applicant and the qualified archaeologist shall meet to determine the appropriate avoidance measures or other appropriate measure, subject to approval by the City of Oakland, which shall assure implementation of appropriate measure measures recommended by the archaeologist. Should archaeologically-significant materials be recovered, the qualified archaeologist shall recommend appropriate analysis and treatment, and shall prepare a report on the findings for submittal to the Northwest Information Center.

COA CULT-2: Human Remains. *Ongoing throughout demolition, grading, and/or construction*
In the event that human skeletal remains are uncovered at the project site during construction or ground-breaking activities, all work shall immediately halt and the Alameda County Coroner shall be contacted to evaluate the remains, and following the procedures and protocols pursuant to Section 15064.5 (e)(1) of the CEQA Guidelines. If the County Coroner determines that the remains are Native American, the City shall contact the California Native American Heritage Commission (NAHC), pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code, and all excavation and site preparation activities shall cease within a 50-foot radius of the find until appropriate arrangements are made. If the agencies determine that avoidance is not feasible, then an alternative plan shall be prepared with specific steps and timeframe required to resume construction activities. Monitoring, data recovery, determination of significance and avoidance measures (if applicable) shall be completed expeditiously.

COA CULT-3: Paleontological Resources. *Ongoing throughout demolition, grading, and/or construction*
In the event of an unanticipated discovery of a paleontological resource during construction, excavations within 50 feet of the find shall be temporarily halted or diverted until the discovery is examined by a qualified paleontologist (per Society of Vertebrate Paleontology standards (SVP 1995,1996)). The qualified paleontologist shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the City determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project on the qualities that make the resource important, and such plan shall be implemented. The plan shall be submitted to the City for review and approval.

b. Methods. Background research for this cultural resources analysis included a records search, literature review, and consultation with the Native American Heritage Commission (NAHC) and historical organizations. This research was conducted to identify cultural resources studies of or cultural resource within or immediately adjacent to the project area, and to prepare the archaeological, ethnographic, and historical setting of the project area.

(1) Records Searches. A records search (File #06-1717) was completed at the Northwest Information Center (NWIC) of the California Historical Resources Information System, Sonoma State University, Rohnert Park, of the project area and a ¼-mile radius on

May 4, 2007. The NWIC, an affiliate of the State of California Office of Historic Preservation, is the official state repository of cultural resources records and reports for Alameda County.

As part of the records search LSA reviewed the following State of California inventories for cultural resources in and adjacent to the project area:

- *California Inventory of Historic Resources* (California Department of Parks and Recreation 1976);
- *Five Views: An Ethnic Historic Site Survey for California* (California Office of Historic Preservation 1988);
- *California Historical Landmarks* (California Office of Historic Preservation 1996);
- *California Points of Historical Interest* (California Office of Historic Preservation 1992);
- *Directory of Properties in the Historic Property Data File* (California Office of Historic Preservation March 28, 2007). The directory includes the listings of the National Register of Historic Places, National Historic Landmarks, the California Register of Historical Resources, California Historical Landmarks, and California Points of Historical Interest.

On May 22 and October 2 2007, records searches of the project area and adjacent buildings were conducted at the Oakland Cultural Heritage Survey (OCHS). The OCHS is a division of the Oakland Community and Economic Development Agency and has completed Historic Resources Inventory and/or California Department of Parks and Recreation 523 forms for numerous buildings and structures of historical interest throughout the City.

On May 16, 2007, LSA faxed a letter describing the project and a map depicting the project area to the Native American Heritage Commission (NAHC) in Sacramento requesting a review of their sacred land file for any Native American cultural resources that might be affected by the proposed project. The NAHC is the official state repository of Native American sacred site location records.

(2) Literature Review. LSA reviewed prehistoric, ethnographic, and historical literature and maps for information about the project area. Materials reviewed are listed in the Cultural Resources technical report available for review at the City of Oakland Community and Economic Development Agency.

(3) Consultation. Consultation with the Alameda County Historical Society and Oakland Museum occurred as follows:

Alameda County Historical Society. On May 16, 2007, LSA sent a letter describing the project and a map depicting the project area to the Alameda County Historical Society (Society) requesting information or concerns regarding historical sites in the project area. On June 6, 2007, LSA contacted the Society by telephone to determine if the organization has any information or concerns about historical sites in the project area. The receptionist stated that the Society has no concerns or comments.

Oakland Museum. On May 16, 2007, LSA sent a letter describing the project and a map depicting the project area to Lori Fogarty, Executive Director of the Oakland Museum of California (Museum). On June 6, 2007, LSA made a follow-up phone call to Lori Fogarty. Ms. Fogarty's assistant stated that Ms. Fogarty did not have any concerns regarding the project, but would ask her to call if she does have concerns or questions. No call has been received from Ms. Fogarty to date.

(4) Field Survey. An architectural historian with LSA conducted field reviews to identify historical architectural resources in and immediately adjacent to the project area on May 23 and June 6, 2007.

The parking lot and buildings covering most of the project area precluded an effective archaeological survey, and an archaeological field survey was not conducted.

c. Prehistoric and Ethnographic Settings. The Paleo-Archaic-Emergent cultural sequence developed by Fredrickson[3] is commonly used to interpret the prehistoric occupation of Central California. The sequence consists of three broad periods: the Paleoindian Period (10,000-6000 B.C.); the three-staged Archaic Period, consisting of the Lower Archaic (6000-3000 B.C.), Middle Archaic (3000-500 B.C.), and Upper Archaic (500 B.C.-A.D. 1000); and the Emergent Period (A.D. 1000-1800).

The Paleo Period began with the first entry of people into California. These people probably subsisted mainly on big game, minimally processed plant foods, and had few or no trade networks. Current research, however, is indicating more sedentism, plant processing, and trading than previously believed. During the Lower Archaic, milling stones appear in abundance and hunting is less important than plant foods. Artifacts are made predominantly from local materials, suggesting that few if any extensive trade networks were established at this time. During the Middle Archaic, the subsistence base begins to expand and diversify with a developing acorn economy, as evidenced by the mortar and pestle, and the growing importance of hunting. Status and wealth distinctions are evidenced in the Upper Archaic archaeological record; regional exchange networks are well established at this time with exchange of goods and ideas, such as obsidian and Kuksu ceremonial practices involving spirit impersonations. Increasing social complexity continued during the Lower Emergent. Territorial boundaries were well established by this time with regularized inter-group exchanges involving more and varied goods, people, and ideas. Bow and arrow technology was also introduced. By the Upper Emergent, a monetary system based on the

[3] Fredrickson, David A., 1974. Cultural Diversity in Early Central California: A View from the North Coast Ranges. *Journal of California Anthropology* 1(1):41-53.

exchange of clamshell disk beads was established. Native population reached its zenith during this time, as evidenced by high site densities and large village sites in the archaeological record.

Historically, archaeological excavations along the eastern San Francisco bayshore have focused on shellmounds. These sites contain a rich, diverse assemblage of dietary remains, artifacts, and human remains. Excavations at two major shellmounds near the project area—the Emeryville Shellmound, CA-ALA-309, and the West Berkeley Shellmound, CA-ALA-307—have helped refine our understanding of the Bay Area's earliest inhabitants. Excavations at the Emeryville Shellmound[4, 5, 6] have identified hundreds of human burials, groundstone (e.g., mortars, pestles, and "charmstones"), flaked stone (e.g., obsidian and chert projectile points and flaking debris), bone tools, and dietary debris, including clams, mussels, oysters, and land and sea mammal bones. Uhle,[7] Nelson,[8] and Bennyhoff[9] have identified temporal changes in artifact types, dietary refuse, and human internments in multiple strata at the site. Excavations at the West Berkeley Shellmound[10] have identified an assemblage as diverse as the Emeryville Shellmound's, with two cultural components at the site. The oldest component at the West Berkeley Shellmound is believed to predate 2000 B.C. and the earliest known occupation of the Emeryville Shellmound.[11]

Prior to the historic period, the project area was situated within territory occupied by Costanoan—also commonly referred to as Ohlone—language groups. Ohlone territories were comprised of one or more land holding groups that anthropologists refer to as "tribelets." The tribelet, a nearly universal characteristic throughout native California, consists of a principle village, which was occupied year round, and a series of smaller

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[4] Nelson, Nels C., 1996. *Excavation of the Emeryville Shellmound, 1906: Nels C. Nelson's Final Report*, transcribed and prefaced by Jack M. Broughton. Contributions of the University of California Archaeological Research Facility, Number 54. Berkeley.

[5] Schenck, W. Egbert, 1926. The Emeryville Shellmound Final Report. *University of California Publications in American Archaeology and Ethnology* 23(3):147-282. Berkeley.

[6] Uhle, Max, 1907. The Emeryville Shellmound. *University of California Publications in American Archaeology and Ethnology* 7(1):1-106. Berkeley.

[7] Ibid.

[8] Nelson, Nels C., 1996.

[9] Bennyhoff, James A., 1986. *The Emeryville Site, Viewed 93 Years Later.* In *Symposium: A New Look at Some Old Sites: Papers from the Symposium Organized by Francis A. Riddell.* Coyote Press Archives of California Prehistory 6:65-74. Coyote Press, Salinas, California.

[10] Wallace, William J., and Donald W. Lathrap, 1975. *West Berkeley (CA-ALA-307): A Culturally Stratified Shellmound on the East Shore of San Francisco Bay*. Contributions of the University of California Archaeological Research Facility, Number 29. Berkeley.

[11] Wallace, William J., and Donald W. Lathrap, 1975:55, 58.

hamlets and resource gathering and processing locations occupied intermittently or seasonally.[12] Populations of tribelets ranged between 50 and 500 persons and were largely determined by the carrying capacity of a tribelet's territory. According to Milliken,[13] the *Huchiun* tribelet occupied the Oakland area at the time of Spanish contact.

By the late eighteenth century, Spanish exploration and settlement of the Bay Area transformed Ohlone culture. Spanish settlers moved into northern California and established the mission system. Mission records indicate that the first *Huchiun* was baptized in 1787 with the first large group from that tribelet arriving at Mission San Francisco in the fall of 1794.[14] Following the secularization of the missions in 1834, many Ohlone worked as manual laborers on ranchos.[15]

d. Historical Setting. The project site is entirely within the Rancho San Antonio land grant, which was originally granted to Luis Maria Peralta on August 3, 1820 for his service to the Spanish government. His 43,000-acre rancho included what are now the cities of Oakland, Berkeley, Alameda, and parts of San Leandro and Piedmont. Peralta's land grant was confirmed after Mexico's independence from Spain in 1822, and this title was honored when California entered the Union by treaty in 1848. Despite this acknowledged title, squatters moved in to use the vast amounts of Peralta's undeveloped land. Cattle were stolen and slaughtered, and trees were removed by squatters and people traveling to and from the gold fields.[16] Peralta Hacienda Historical Park at 34th Avenue in Oakland incorporates the headquarters of Luis Maria Peralta's Rancho San Antonio.

In 1850, Andrew Moon, Horace W. Carpentier, and Edson Adams built a house on Peralta's property at the foot of Broadway, near the banks of an estuary. This house site was in what is now Jack London Square. Vicente Peralta attempted to legally evict the group, but eventually relented and allowed them to lease the land. Instead of complying with the terms of their lease, Moon, Carpentier, and Adams hired Julius Kellersberger, a Swiss engineer, to survey the land and lay out the town that became Oakland. The area was encompassed by Fallon, Market, First, and Fourteenth streets. The City of Oakland was incorporated in 1852, and officially recognized by the state in 1854.[17]

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[12] Kroeber, Alfred L., 1955. Nature of the Land-Holding Group. *Ethnohistory* 2:303-314.

[13] Milliken, Randall, 1995:243. *A Time of Little Choice: The Disintegration of Tribal Culture in the San Francisco Bay Area, 1769-1810.* Ballena Press, Menlo Park, California.

[14] Milliken, Randall, 1995:243.

[15] Levy, Richard, 1978:486.

[16] Hoover, Mildred, Hero E. Rensch, Ethel G. Rensch, and William N. Abeloe, 1990:18-19. *Historic Spots in California*. Stanford University Press, Stanford, California.

[17] Ibid.

Oakland grew around its waterfront, with development limited only by the available modes of transportation. Steam ferry service to San Francisco was established in 1850, and by 1869 the first horse-car followed a route from the estuary up Telegraph Avenue to 40th Street. On November 8, 1869, the transcontinental railroad's first west bound trip rolled through Oakland along Central Pacific tracks, which terminated at the new 7th Street station. By 1891, Oakland's first street car ran along Broadway to the City of Berkeley.[18]

Subsequent to the devastation of the 1906 earthquake and fire in San Francisco, numerous refugees lived for months in tents set up in Lakeside Park on the shores of Lake Merritt. The influx of people to Oakland escaping the devastation from across the bay prompted the development of new residential areas in Oakland to accommodate displaced San Francisco residents. Older neighborhoods became more densely populated as new apartment buildings and related growth became part of Oakland's residential fabric.[19] Around this time, the project area became a more densely populated area, with new in-fill construction of residences on vacant lots.[20]

Throughout the 20th century, commercial enterprises and industrial development, particularly the Port of Oakland and the Oakland Municipal Airport, played a vital role in Oakland's growth. During World War II, the Port provided land and facilities to the Army and Navy. By 1943, Oakland had become the largest shipping center on the West Coast and within two decades was the largest container terminal on the West Coast. As suburbs grew outward during the 1950s, the inner core of the City began to decline as residents left for the outlying areas. The perception of Oakland, as with many large cities during the 1960s and 1970s, was that of a neglected urban core with high unemployment, racial tension, and reduced economic opportunity.[21] This trend began to reverse in the 1980s as reinvestment and redevelopment helped to invigorate the City's image and prospects. In 1995, California's "Golden Triangle," which included Oakland, San Jose and San Francisco, was named by *Fortune Magazine* as the best place to do business in the United States.[22]

e. Existing Conditions. The existing cultural resources conditions for this project are described below.

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[18] Oakland History Room of the Oakland Public Library, 2003. *Oakland History Timeline*, revised by the City of Oakland Community and Economic Development Agency <www.oaklandnet.com/celebrate/historytimeline.htm>. Website accessed 9 January 2007.

[19] Woodbridge, Sally, 1984:11-12. Historical and Architectural Resources. In *Oakland Central District Development Program*. City of Oakland Planning Department, Oakland, California.

[20] Sanborn Fire Insurance Company Maps, 1902, 1911.

[21] Bagwell, Beth, 1982. *Oakland, Story of a City*. Presidio Press, Novato, California.

[22] Oakland History Room of the Oakland Public Library, 2003.

(1) Records Search Results. An overview of the records search results is provided below. A review of the Northwest Information Center (NWIC) database identified several cultural resource studies have been completed for seismic retrofit work on the BART system, including the MacArthur station.[23, 24, 25, 26] No prehistoric or historical archaeological sites are recorded within or immediately adjacent to the project area. The NWIC did not have any records of historical architectural resources in or immediately adjacent to the project area.

The *Directory of Properties in the Historic Property Data File* (March 28, 2007) was reviewed at the NWIC. The *Directory of Properties* indicates that the California Office of Historic Preservation (OHP) has assigned a Historical Resource Status Code of "6Y" to a building within the project area at 3901 Telegraph Avenue and a rating of "6Z" for a building adjacent to the project area at 3723 Telegraph Avenue. A 6Y Status Code indicates a property that was found ineligible for listing in the National Register by consensus through the Section 106 process but that the building was not evaluated for its eligibility for listing in the California Register or a local register of historical resources. A 6Z Status Code indicates a property that was found ineligible for the National Register, California Register, or Oakland Register through survey evaluation.

The project site includes seven existing buildings; five of these structures are included on the OCHS, as listed in Table IV.K-2. The building at 3875 Telegraph Avenue was under construction at the time of the OCHS survey in 1986 and has not been assigned a property rating by the City. Figure IV.K-1shows the location of these buildings. None of the buildings are within or contributors to an historic district. The OCHS survey maps identify the buildings at 3901, -15, -17, -19, and -21 Telegraph Avenue and 526 and 544 West MacArthur Boulevard with a "✔" (check-mark), which indicates that these buildings were (1) less than 50 years old at the time of the OCHS survey, and/or (2) were preliminarily considered to be "D" rated properties at the time of the OCHS survey. D-rated buildings are considered to be Properties of Minor Importance under the City's Historic Preservation

[23] Caltrans, 2005a. *Archaeological Survey Report, BART Seismic Retrofit Project, Berkeley Hills Tunnel to Montgomery Street Station, Caltrans District 4, Alameda and San Francisco Counties, California.* California Department of Transportation, Oakland.

[24] Caltrans, 2005b. *Finding of No Adverse Effect, BART Seismic Retrofit Project, Berkeley Hills Tunnel to Montgomery Street Station, Caltrans District 4, Alameda and San Francisco Counties, California.* California Department of Transportation, Oakland.

[25] Caltrans, 2005c. *Historic Property Survey Report, BART Seismic Retrofit Project, Berkeley Hills Tunnel to Montgomery Street Station, Caltrans District 4, Alameda and San Francisco Counties, California.* California Department of Transportation , Oakland.

[26] Caltrans, 2005d. *Historical Resources Evaluation Report, BART Seismic Retrofit Project, Berkeley Hills Tunnel to Montgomery Street Station, Alameda and San Francisco Counties, California.* California Department of Transportation, Oakland.

Table IV.K-2 Property Ratings/Historical Resource Status for Buildings Within Project Site

Address	OCHS Rating	OHP Rating	Eligible for Historical Register?	CEQA Historical Resource?
1. 3875 Telegraph Avenue	Not Rated	Not Rated	No—Less than 50 years	No
2. 3901 Telegraph Avenue	D3	6Y	No	No
3. 3915, -17, -19, -21 Telegraph Avenue	D3	Not Rated	No	No
4. 526 West MacArthur Boulevard	✔	Not Rated	No	No
5. 544 West MacArthur Boulevard	✔	Not Rated	No	No

Note: OHP = Office of Historic Preservation.
Source: OCHS, 2007.

Element. The property ratings and historical resource status of buildings within the project area are summarized in Table IV.K-2.

The property ratings and historical resource status of buildings immediately adjacent to the project area are summarized in Table IV.K-3 and the locations are shown in Figure IV.K1. None of these buildings are listed in the Oakland Register, although, as indicated on the OCHS survey map, the building at the southwest corner of 40th Street and Telegraph Avenue intersection (3927, -29, -31, and -33 Telegraph Avenue) may qualify as a "B" rated property and would therefore qualify for listing in the Oakland Register. None of the buildings immediately adjacent to the project area are within or contributors to a recorded historic district.

Katy Sanchez, Native American Heritage Commission Program Analyst, responded in a faxed letter on May 16, 2007, that a review of the sacred land file did not indicate any "Native American cultural resources in the immediate project area."

(2) Prehistoric and Historical Archaeological Resources. A review of the NWIC database did not indicate the presence of recorded prehistoric or historical archaeological deposits or ethnographic sites in or immediately adjacent to the project area. Background research did, however, indicate the possibility of subsurface historical archaeological deposits that predate the construction of the BART station and State Route 24 (SR-24). (See Historic Archaeological Sensitivity section below.)

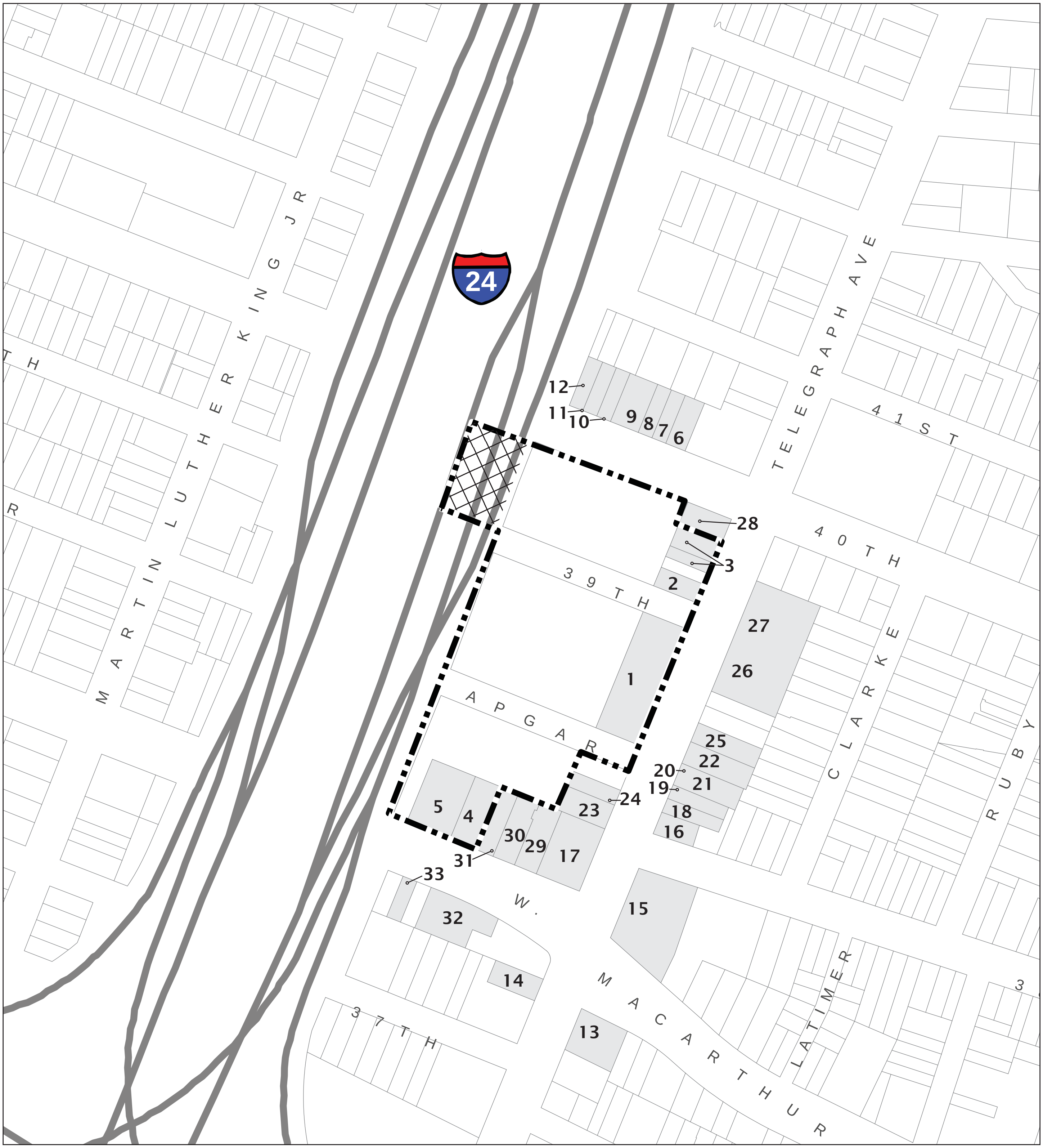

FIGURE IV.K-1

Legend

Project site

BART Plaza

Parcel lines

NTS

MacArthur Transit Village Project EIR

OCHS Properties Within and Adjacent to the Project Site

SOURCE: CITY OF OAKLAND, 2005.

N:\1407011 MacArthur BART Transit Village EIR\Graphics\MacArthur BART EIR Graphics Files\figures (11/07/07)

Table IV.K-3 Property Ratings/Historical Resource Status for Buildings Adjacent to Project

Address	OCHS Rating	OHP Rating	Eligible for Historical Register?	CEQA Historical Resource?
6. 518 40th Street	✔	Not Rated	No	No
7. 522 40th Street	✔	Not Rated	No	No
8. 526 40th Street	✔	No Rated	No	No
9. 530 40th Street	✔ [a]	Not Rated	No	No
10. 542 40th Street	✔	Not Rated	No	No
11. 548 40th Street	✔	Not Rated	No	No
12. 554 40th Street	✔	Not Rated	No	No
13. 3720 Telegraph Avenue	✔	Not Rated	No	No
14. 3723 Telegraph Avenue	✔	6Z	No	No
15. 3770 Telegraph Avenue	✔	Not Rated	No	No
16. 3800 Telegraph Avenue	Cb+	Not Rated	No	No
17. 3801 Telegraph Avenue	✔	Not Rated	No	No
18. 3810 Telegraph Avenue	✔	Not Rated	No	No
19. 3816 Telegraph Avenue	Dc3	Not Rated	No	No
20. 3820, -22, and -24 Telegraph Ave.	✔	Not Rated	No	No
21. 3830 Telegraph Avenue	✔	Not Rated	No	No
22. 3832 Telegraph Avenue	✔	Not Rated	No	No
23. 3833 Telegraph Avenue	✔ [b]	Not Rated	No	No
24. 3837, -39, -41, and -43 Telegraph	C3	Not Rated	No	No
25. 3838 and -40 Telegraph Avenue	✔	Not Rated	No	No
26. 3900 Telegraph Avenue	F	Not Rated	No	No
27. 3910-36 (even numbers)	✔	Not Rated	No	No
28. 3927, -29, -31, and -33 Telegraph	C3/B3[c]	Not Rated	Unknown	Unknown
29. 508, -10 W. MacArthur	✔	Not Rated	No	No
30. 514 W. MacArthur	Dc3	Not Rated	No	No
31. 518 W. MacArthur	C3	Not Rated	No	No
32. 531 W. MacArthur	✔	Not Rated	No	No
33. 537, -39, -43, and -45 MacArthur	C3	Not Rated	No	No

Notes: OHP = Office of Historic Preservation.
✔ = Building was (1) less than 50 years old at the time the OCHS survey, and/or (2) was preliminarily considered to be "D" rated at the time of the OCHS survey.
[a] This building has a possible property rating of Dc3, as indicated on the OCHS survey map.
[b] This building has a possible property rating of C, as indicated on the OCHS survey map.
[c] This building was assigned a C3 property rating by OCHS. A marginal note on the OCHS survey map states, however, that "surely this [building] is a B!".

Prehistoric Archaeological Sensitivity. A predictive model for subsurface prehistoric archaeological deposits was completed for the BART seismic retrofit project in 2005 that is relevant for determining the potential for encountering subsurface prehistoric archaeological deposits in the project area.[27] This model was developed using site location data, information from recent archaeological investigations in the vicinity, soils and geological maps, and historical maps showing pre-urbanization creek pathways and bay shoreline. Based on the distribution of prehistoric archaeological sites recorded in the vicinity of the BART system in the Oakland area, it was determined that prehistoric sites were located within 623 feet from water (e.g., creeks, marshes, and shoreline). The MacArthur BART station does not fall within 623 feet of an unmodified course of a creek, marsh, or shoreline and is, therefore, in an area of low sensitivity for subsurface prehistoric archaeological deposits.[28]

Historic Archaeological Sensitivity. A sensitivity assessment was done of the project area to determine the likelihood of project activities encountering potentially-significant subsurface historical archaeological deposits. The assessment consisted of a review of Sanborn Fire Insurance maps to identity non-extant buildings that were in the project area and that may have a subsurface archaeological component (e.g., hollow-filled features, trash deposits, and foundations). This information was used to predict the type and nature of archaeological remains that may be within the project area.

Documentary research indicates that historical archaeological deposits within the project area will most likely include archaeological remains representing residential and commercial land use. The review of Sanborn Fire Insurance maps dating from 1902 to 1951 indicates that the project area was predominately residential for the first half of the twentieth century. In 1902, approximately half of the lots in the project area were occupied by residences, with two stores and a saloon fronting Telegraph Avenue between 39th and 40th streets. By 1911 additional residences and apartments had been built on vacant lots in the project area. The largest occupied lot in the project area by 1911 contained a two-story dwelling, garage, green house, and windmill and tank northwest of the intersection of Telegraph Avenue and Apgar at the current location of the Surgery Center and parking lots. This lot roughly corresponds to the “site of Apgar Mansion” as depicted on the OCHS survey maps. Businesses were located along Telegraph Avenue, including the previously mentioned saloon and a recently constructed carpenter shop at the approximate location where the parking lot at 3911 and building at 3915 Telegraph Avenue are today. By 1951, lots in the project area were still mostly occupied by residences and apartments, with the exception of lots along Telegraph Avenue, which were mostly occupied by businesses, including a tamale factory at the current location of the Surgery Center, a drive-in restaurant (now Lee’s Auto

[27] Caltrans, 2005a.

[28] Caltrans, 2005a:33.

Laundry), a furniture shop (currently a parking lot at 3911 Telegraph Avenue), and the present-day storefronts at 3915, -17, -19, and -21 Telegraph Avenue.

An aerial photograph from 1969 shows that portions of the project area had been graded, and many of the residences and associated buildings in the project area had been demolished or removed from the site for construction of the BART parking lot and station, and SR-24, which resulted in the parking lot area being excavated approximately 5 to 13 feet[29] below street grade.[30] Although the site has been previously graded and excavated; there is still some potential for intact subsurface archaeological deposits associated with the demolished buildings in the project area.

(3) Historical Architectural Resources. The project area includes buildings over 45 years old.[31] This section summarizes the National Register and California Register eligibility of the buildings in the project area and whether these buildings are listed in Oakland's Local Register of Historical Resources (Oakland Register).

Four parcels in the project area at 012-0967-049-01 (515 Apgar Street), 012-0968-055-01 (516 Apgar Street), 012-0969-053-02 (3911 Telegraph Avenue), and 012-0969-053-03 (532 39th Street) consist of modern asphalt parking lots used by BART commuters and adjacent businesses. These parking lots do not meet the minimum age requirements to qualify for listing in either the California or National registers nor do they otherwise qualify as historical resources under CEQA. The parcel at 012-0968-003-01 (3875 Telegraph Avenue) consists of a ca. 1987 medical building. This building does not meet the minimum age requirements for listing in either the California or National register nor does it otherwise qualify as an historical resource under CEQA.

(#4) 526 West MacArthur Boulevard (Rio Motel). The single, multi-unit building at 526 West MacArthur Boulevard (parcel number 012-0967-009-00) is in a dense residential and light commercial area. The period of significance for this building is from 1956 in the local context of post World War II automobile related lodging in Oakland and the Bay Area. Known as the "Rio Motel," this is a three-story, multi-unit wood framed, ell-shaped building with individual rooms, a parking area to the rear of the property, and an attached manager's

[29] The BART parking lot was excavated approximately 5 to 13 feet below street grade in the late 1960s.

[30] Mitchell, William A., and Glenn S. Young, 2002:7. Phase I Environmental Site Assessment, MacArthur BART Transit Village Project, Oakland, California. SCI Subsurface Consultants, Inc, Oakland.

[31] The State of California Office of Historic Preservation recommends documenting, and taking into consideration in the planning process, any cultural resource that is 45 years or older (California Office of Historic Preservation 1995:2).

office. It is located on the north side of West MacArthur Boulevard and faces south. The building, constructed in 1956, is 51 years old, and is one of two motels located on the project site. The motel displays traits of Modern architectural style, prominent in the United States from approximately 1935 to the present.

526 West MacArthur Boulevard

The OCHS did not assign a property rating to the Rio Motel as it was less than 50 years old at the time of its survey in 1986. The California Office of Historic Preservation (OHP) has not assigned a Historical Resource Status Code to the building. The building meets the minimum age requirement (50 years) for listing in the California and National registers, but lacks integrity of design, materials, and workmanship, due to structural alterations after the period of significance. The Rio Motel is not significant under any criterion for listing in either the California Register or National Register. The Rio Motel is not listed in the Oakland Register nor does it otherwise constitute an historical resource for purposes of CEQA.

(#5) 544 West MacArthur Boulevard (Sleepy Hollow Motel). The single, multi-unit building at 544 West MacArthur Boulevard (parcel number 012-00967-010-01) is located in a dense residential and light commercial area. The period of significance for this building is in 1955 in the local context of automobile related lodging in Oakland and the Bay Area. Known as the "Sleepy Hollow Motel," it is a two-story U-shaped building with individual rooms and an attached manager's office at the south, street facing, facade. The Sleepy Hollow Motel surrounds a common paved courtyard to accommodate guest parking. The motel is located on the north side of West MacArthur Boulevard and faces south. The building was constructed in 1955, is 52 years old, and is one of two motels on the project site. The motel displays a vernacular or homogenized motel style with elements of Spanish or Mission Revival.


544 West MacArthur Boulevard

The OCHS did not assign a property rating to the Rio Motel as it was less than 50 years old at the time of its survey in 1986. The OHP has not assigned a Historical Resource Status Code to the building. The building meets the minimum age requirement (50 years) for listing in the California and National registers, but lacks sufficient integrity of design, setting, materials, and workmanship due to later structural alterations. The Sleepy Hollow Motel is not significant under any criterion for listing in either the California Register or National Register. The Sleepy Hollow Motel is not listed in the Oakland Register nor does it otherwise constitute an historical resource for purposes of CEQA.

3901 Telegraph Avenue

(#2) 3901 Telegraph Avenue (Lee's Auto Laundry). This structure is located at 3901 Telegraph Avenue (parcel number 012-0969-004). It is a single story commercial structure located on the west side of Telegraph and faces east. The period of significance for this building is 1946 to 1956 in the context of the rise of the automobile following World War II. Called Lee's Auto Laundry, the structure is made of wood and brick and prominently features a curved front façade with a wide flat overhang. The structural layout and features suggest an Art Moderne building, a style in use from the mid 1930s to the late 1940s. Art Moderne architectural characteristics include the use of rounded corners, a flat roof with a deep curved canopy, a smooth wall finish, and the placement of horizontal bands of windows creating a streamlined look that evokes a feeling of movement or speed. This building was built after 1945, making it a later expression of Art Moderne.

The OCHS assigned Lee's Auto Laundry a 'D' rating, indicating that it is a building of Minor Importance. In March 2006, the California OHP assigned a rating of 6Y to the building, indicating that it was found ineligible for listing in the National Register by a consensus determination through the Section 106 process. The building meets the minimum age requirement (50 years) for listing in the California and National registers, but subsequent changes in ownership, purpose, and necessary maintenance have diminished distinctively unique Art Moderne decorative elements such as signage, lighting, and curvilinear decorative accents. Integrity of design is compromised with a currently larger rear service-oriented section than the original, which results in the front curved section out of original proportion. Integrity of materials is lost with modern siding, windows, and filled in window casements on the south or 39th Street facing façade. The building is not significant under any criterion for listing in either the California Register or National Register. Lee's Auto Laundry is not listed in the Oakland Register nor does it otherwise constitute an historical resource for purposes of CEQA.

(#3) 3915, -17, -19, and -21 Telegraph Avenue (Abyssinia Market, Bin's Coffee and Tea, Chef Yu Chinese Restaurant, and Braids by Betty). This building is a joined single story commercial block building located on the east side of Telegraph Avenue (parcel numbers 012-0969-003-01 and 012-0969-002-00). The period of significance for these buildings is 1914 to 1940 in the context of local commercial development. The string of individual stores encompassing 3915, 3917, 3719, and 3721 Telegraph was originally constructed as a single three store facility in 1914 for W.M. MacKinnon, who commissioned local carpenter C.M. Maloof to build the structure. Records indicate the architect as a "J.W." (no last name is given). The research did not indicate information that MacKinnon or Maloof were historically significant. With the exception of 3915 Telegraph, which is a two-story, the buildings are single story with low pitched roofs behind false fronts of varying design and height. They are commercial vernacular and display no significant architectural design or style.

3915, 3917, 3919, and 3921 Telegraph Avenue

The OCHS assigned the commercial building block at 3915, 3917, 3919, and 3921 Telegraph Avenue a 'D' rating, indicating that it is a building of Minor Importance. The OHP has not assigned a Historical Resource Status Code to the building. The building meets the minimum age requirement (50 years) for listing in the California and National registers, but the building's integrity of original style, form, materials, and workmanship is lost due to decades of alterations that include new windows, siding, signage, and the addition of "Permastone" to the main façade. These alterations have covered up the original structural style and appearance. The building is not significant under any criterion for listing in either the California Register or National Register. The commercial building block is not listed in the Oakland Register nor does it otherwise constitute an historical resource for purposes of CEQA.

2. Paleontological Resources Setting

This section presents the results of a paleontological resources study conducted for the project. The following sections provide: (1) the study methods, and (2) a brief description of the project area's geological and paleontological setting.

a. Methods. The paleontological resources study consisted of: (1) a fossil locality search conducted by staff at the Museum of Paleontology at the University of California, Berkeley (UCMP) to identify paleontological resources within or adjacent to the project area; and (2) a review of literature on file at LSA to determine the geological and paleontological history of the project area.

(1) Fossil Locality Search. A fossil locality search was conducted on May 8, 2007, by the staff at the University of California Museum of Paleontology (UCMP), Berkeley. No fossil localities were identified within or adjacent to the project area. The locality search identified 20 fossil localities within a 10-mile radius of the project area. These localities contain a wide variety of specimens from the Pleistocene, such as giant ground sloths, horses, bison, deer, mammoths, mastodons, short-faced bears, camels, rodents, reptiles, amphibians, birds, and fish.

(2) Literature Review. LSA reviewed paleontological and geological literature relevant to the project area and its vicinity. This review identified the project area as being underlain by Holocene-aged (present to 10,000 years old) alluvial fan deposits, as well as Pleistocene alluvial fan deposits.[32] The Pleistocene alluvial fan deposits are sensitive for significant paleontological resources, and underlie the Holocene-aged alluvial fan deposits present in the project area at an unknown depth.

b. Paleontological Setting. The project area is situated on Holocene-aged (present to 10,000 years old) alluvial deposits. Due to the recent age of such deposits, this alluvium is not sensitive for paleontological resources. Underlying the Holocene alluvium at an unknown depth is Pleistocene-aged (10,000 to 1.5 million years old) alluvium, which is sensitive for significant paleontological resources. The Franciscan Assemblage, which composes much of the hills east of Oakland, is probably the project area's deepest formation. The geologic formations, from youngest to oldest, are described below.

(1) Soils. The project area consists of urban land soils of the Danville Complex.[33] Danville soils are derived from sedimentary sources and tend to be very deep and well drained, and urban soils have been heavily altered or mixed by construction activities.

Holocene Alluvial Fan Deposits (present to 10,000 years old). These deposits are brown to tan, dense gravelly sands that grade upward to silty clay. These surficial deposits

[32] Graymer, R.W., 2000. Geologic Map and Map Database of the Oakland Metropolitan Area, Alameda, Contra

Costa, and San Francisco Counties, California. U.S. Geological Survey, Miscellaneous Field Studies MF-2342. U.S.

Geological Survey, Washington D.C.

[33] Welch, Lawrence E., 1981:25. *Survey of Alameda County, California, Western Part.* United States Department of Agriculture, Soil Conservation Service, Washington D.C.

cover the majority of the Oakland metropolitan area, and are too young to contain significant paleontological resources. These deposits may be as much as 10 feet deep or more.

Pleistocene Alluvial Fan Deposits (10,000 to 1.5 million years old). This very thick layer of alluvium is probably present the project area. Nearby studies have shown it to be at least 150 feet thick,[34] but there is no data on the thickness of the overlying Holocene alluvial deposits in the project area. This alluvium is weakly consolidated and irregularly inter-bedded with clay, silt, sand, and gravel, and can locally contain fossils of fresh water gastropods and bivalves, and such Pleistocene mega-fauna as horse, camel, bison, sloth, and mammoth.[35,36,37]

Franciscan Assemblage (65 to 144 million years old). The Franciscan Assemblage is a formation of various igneous and sedimentary rocks formed in the Cretaceous period, and forms the deepest geological formation of the project area. It is buried under at least hundreds of feet of sediments. It has been known to contain radiolarian fossils in its chert layers, as well as marine invertebrate fossils and trace fossils in other sedimentary layers.[38,39,40,41] It is not known for containing vertebrate fossils.[42,43]

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[34] Graymer, R.W., op. cit.

[35] Bell, C.J., E.L. Lundelius, Jr., A.D. Barnosky, R.W. Graham, E.H. Lindsay, D.R. Ruez, Jr., H.S. Semken, Jr., S.D. Webb, and R.J. Zakrzewski, 2004. The Blancan, Irvingtonian, and Rancholabrean Mammal Ages. In *Late Cretaceous and Cenozoic Mammals of North America*, edited by M.O. Woodburne, pp. 232-314. Columbia University Press, New York.

[36] Helley et al., op. cit.

[37] Savage, D.E., 1951. *Late Cenozoic Vertebrates of the San Francisco Bay Region*. University of California Bulletin of the Department of Geological Science 28(10):215-314. Berkeley.

[38] Armstrong, C.F., and Kathy Gallagher, 1977. Fossils from the Franciscan Assemblage Alcatraz Island. *California Geology* 30:134-135.

[39] Little, Crispin T.S., Richard J. Herrington, Rachel M. Haymon, Taniel Danelian, 1999. Early Jurassic Hydrothermal Vent Community from the Franciscan Complex, San Rafael Mountains, California. *Geology* 27(2):167-170.

[40] Miller III, William, 1989. Paleontology of Franciscan Flysch at Point Saint George, Northern California. In *Geologic Evolution of the Northernmost Coast Ranges and Western Klamath Mountains, California: 28th International Geological Congress, Field Trip Guidebook T308,* edited by K.R. Aalto and G.D. Harper, pp. 47-52. American Geophysical Union, Washington D.C.

[41] Schlocker, Julius, 1974. *Geology of the San Francisco North quadrangle, California.* U.S. Geological Survey Professional Paper 782. U.S. Geological Survey, Washington D.C.

[42] Armstrong and Gallagher, op. cit.

[43] Camp, C.L., 1942. Ichthyosaur Rostra from Central California. *Journal of Paleontology* 16(3):362-371.

3. Impacts and Mitigation Measures

Implementation of the proposed project has the potential to significantly impact cultural and paleontological resources. Impact avoidance is the most desirable option, but this is not always feasible in a densely-built and populated urban area such as Oakland. If avoidance is not feasible, mitigation measures must be implemented that will offset significant impacts or reduce them to a less-than-significant level.

Project activities that have the potential to significantly impact cultural and paleontological resources include: (1) soil excavation and grading for semi-subterranean parking facilities and building utilities; (2) demolition of existing buildings; (3) construction of new buildings; and (4) enhancement of lighting and streetscape features on street frontages around the project area.

Potentially-significant impacts to paleontological and cultural resources that may occur as a result of project implementation are discussed below. Mitigation measures are then provided to reduce impact significance, where possible, to less-than-significant levels.

a. Criteria of Significance. Implementation of the project would have a significant impact on cultural and paleontological resources if it would:

- Cause a substantial adverse change in the significance of a historical resource as defined in *CEQA Guidelines* Section 15064.5. Specifically, substantial adverse changes include physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be "materially impaired". The significance of a historical resource is "materially impaired" when a project demolishes or materially alters, in an adverse manner, those physical characteristics of the resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, a historical resource list.

  In the City of Oakland, an historical resource under CEQA is a resource that meets **<u>any</u>** of the following criteria:

  (1) A resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources;

  (2) A resource included in Oakland's Local Register of historical resources (defined below), unless , the preponderance of evidence demonstrates that it is not historically or culturally significant;

  (3) A resource identified as significant (e.g., rated 1-5) in a historical resource survey recorded on Department of Parks and Recreation Form 523, unless the preponderance of evidence demonstrates that it is not historically or culturally significant;

(4) Meets the criteria for listing on the California Register of Historical Resources; or

(5) A resource that is determined by the Oakland City Council to be historically or culturally significant even though it does not meet the other four criteria listed here.

- Cause a substantial adverse change in the significance of an archaeological resource pursuant to *CEQA Guidelines* Section 15064.5;
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- Disturb any human remains, including those interred outside of formal cemeteries.

The City of Oakland's Local Register (Historic Preservation Element Policy 3.8) includes the following:

- All Designated Historic Properties (Landmarks, Heritage Properties, Study List Properties, Preservation Districts, and S-7 and S-20 Preservation Combining Zone Properties); and
- Those Potential Designated Historic Properties that have an existing rating of "A" or "B" or are located within an Area of Primary Importance.

b. Less-than-Significant Cultural and Paleontological Resources Impacts. The following describes the cultural and paleontological less-than-significant impacts. The project will not have a significant impact on historical architectural resources as none of the buildings in the project area qualify as historical resources under CEQA.

(1) Prehistoric Archaeological Materials. The project area is not in an area considered to be of high sensitivity for prehistoric archaeological materials. Nonetheless, the possibility of encountering such materials during ground-disturbing activities cannot be ruled out. Implementation of the City's Archaeological Resources Standard Condition of Approval (see COA CULT-1 on page 402 for treatment of the accidental discovery of archaeological deposits would reduce project impacts to a less-than-significant level.

(2) Archaeological Resources. Prior to the construction of SR-24 and the MacArthur BART station, the project area was primarily occupied by homes, apartments, and commercial establishments (Sanborn Fire Insurance Company 1902, 1911). Although grading for and construction of the MacArthur BART station and facilities may have removed or adversely affected the integrity of deposits associated with the historical neighborhood, the project area still has the potential to contain subsurface historical archaeological deposits associated with these former buildings. Such deposits may include wood, stone, concrete, footings, walls and other structural remains; debris-filled wells or privies; and deposits of wood, glass, ceramics, metal, and other refuse.

Implementation of the City's Standard Archaeological Resources Condition of Approval (see COA CULT-1 on page 402 for treatment of the accidental discovery of historical archaeological resources during demolition grading and construction would ensure no significant impacts would occur.

(3) Historical Resources. No historical resources exist on the project site as described in detail in the Cultural Resources technical report available for review at the City of Oakland Community and Economic Development Agency. A building adjacent to the project site (3927, -29, -31, and -33 Telegraph Avenue) at the southwest corner of the Telegraph Avenue/40th Street intersection may qualify as an historical resource under CEQA since it is possibly a B-rated property (a property of Major Importance as defined in the City's HPE), as indicated on the OCHS survey map.

The proposed project will not demolish, destroy, or relocate the building at the southwest corner of the Telegraph Avenue and 40th Street intersection. The project's construction of the Block A development will; however, affect this building's immediate surroundings due to the proximity and scale of the new construction to the historical resource. Effects will occur from new construction to the west and south, within approximately 5 feet of the historical resource, which will be from 10 to 20 feet taller than the existing historical building. The proximity of the proposed construction may detract somewhat from the existing streetside view of a historical building southwest of the Telegraph Avenue/40th Street intersection.

These project effects on the building at the southwest corner of the Telegraph Avenue/40th Street intersection; however, will be less than significant. The historical building is not within or adjacent to an historic district and existing adjacent construction consists of modern or older buildings whose appearance and historical integrity have been greatly altered from modern remodels and additions (e.g., 3915, -17, -19, and -21 Telegraph Avenue), and currently have the appearance of modern buildings. Modern, post-ca. 1970 construction is visible from the Telegraph Avenue/40th Street intersection, including the MacArthur BART station, parking lots, a medical office building at 3875 Telegraph Avenue, and elevated roadways to the west. While the proposed project will change the overall setting and configuration of the neighborhood adjacent to the historical building, these effects will not result in significant new alterations to the historical values of the existing urban streetscape.

(4) Paleontological Resources. The Pleistocene sediments that underlie the project area are sensitive for the occurrence of significant, nonrenewable paleontological resources. Excavation could inadvertently damage such resources and result in a significant adverse impact. The City's Standard Paleontological Resources Condition of Approval (see COA CULT-1 on page 402 will ensure no significant paleontological impacts would result.

(5) Human Remains. The proposed project is not anticipated to disturb human remains. Nonetheless, the possibility of encountering human remains during ground-disturbing activities cannot be ruled out. Implementation of the City's Human Remains Standard Condition of Approval (see COA CULT-2 on page 403 for the treatment of human remains would reduce project impacts to a less-than-significant level.

c. Significant Cultural and Paleontological Resources Impacts. No significant impacts to cultural resources would result from implementation of the project.

d. Cumulative Cultural and Paleontological Resources Impacts. The geographic area considered for the cultural and paleontological resources cumulative analysis is the City of Oakland. Construction activities associated with the proposed project and past, present existing, pending and reasonably foreseeable future projects could result in significant impacts to archaeological, historic and paleontological resources, and human remains. However, like the proposed project, past, present and future projects have or would be subject to the City's Standard Conditions of Approval designed to protect cultural and paleontological resources. The conditions of approval also include provisions to ensure the discovery of human remains is reported to the proper authorities. The proposed project would not result in the demolition of significant historic architectural resources. Therefore, the proposed project together with the impact of past, present and reasonably foreseeable future development would not contribute to a cumulative cultural or paleontological resources impact.

L. AESTHETIC RESOURCES

This section evaluates the effects of the MacArthur Transit Village Project on the visual and aesthetic resources in the vicinity of the project site. The analysis also considers the proposed project's consistency with applicable visual resources-related policies.

This section is based on: (1) field surveys of the project site that were conducted in the summer of 2007; (2) a review of the data provided by the City and the project applicant, including aerial photographs, site plans, and planning documents; and (3) visual simulations that show "before" and "after" representations of the proposed project. Visual simulations, based on schematic drawings of the proposed project, were prepared for six representative public vantage points in the vicinity of the project site. The visual simulations are intended to convey a realistic impression of the project in terms of building location, scale and massing. However, because the architectural details of the proposed structures have not been finalized, the simulations do not portray the exact architectural design of the proposed project.

1. Setting

The following section includes a description of the visual quality of the project site and its surroundings, and views in the vicinity of the site.

a. Local Context. The physical environment immediately around the project site is characterized by low rise buildings ranging in height from one to three stories. Building setbacks from the street vary from no setback to setbacks that have parking areas in the front of the building. On-street parking is allowed on both sides of the streets. There are a number of prominent billboards within the vicinity of the project site. Existing land uses in the area are varied, and include commercial, public, and residential uses along major streets in the area. Single-family, duplex, and multi-family residential uses are the predominate uses on the local streets.

b. Visual Character of the Site. The project site can be generally described by three visual components: the BART parking lot and Frontage Road; the BART plaza; and the existing structures along Telegraph Avenue and West MacArthur Boulevard. These three components are described in more detail below.

(1) BART Parking Lot. The existing BART parking lot comprises the majority of the project site. The parking lot is located below the Telegraph Avenue and 40th Street street level, but is at street level along West MacArthur Boulevard. Ramps leading down to the parking lot are provided off of 40th Street and Apgar Street. Where there is a grade difference between the parking area and the Frontage Road area, stairs are provided.

The parking spaces within the parking lot are generally angled spaces, with perpendicular spaces located along the perimeter of the parking lot. Lighting and informational signage is provided throughout the parking lot. There is no landscaping within the parking lot, but there is ornamental landscaping, mature trees, and ground cover along the perimeter of the parking area.

Frontage Road, an internal roadway that is located to the west of the parking lot, provides vehicle access between 40th Street and West MacArthur Boulevard. Sidewalks and trees are provided on both sides of the street. This street is used by transit providers and BART patrons. Photographs of the BART parking lot and Frontage Road are provided in Figure IV.L-1.

(2) BART Plaza. The BART Plaza is located immediately west of Frontage Road and provides access to the BART fare gates. Two State Route 24 (SR-24) overpasses are immediately over the BART Plaza, which limits the natural light within the plaza.

The BART Plaza contains a mixture of hardscape and landscaping. Benches, a bicycle parking area, informational signage, newspaper racks, vendors, and public art are the predominant visual focal points of the BART Plaza area. Photographs of the BART Plaza are provided in Figure IV.L-2.

(3) Existing Buildings. Existing buildings within the project site can be described in three groupings: buildings that front on Telegraph Avenue between 40th Street and 39th Street; the building that fronts on Telegraph Avenue between 39th Street and Apgar Street; and the buildings on West MacArthur Boulevard. Photographs of some of the existing buildings within the project site are shown in Figure IV.L-3.

The buildings within the project site between 40th Street and 39th Street are one to two stories in height. The majority of the buildings have no setback along Telegraph Avenue, and contain a mixture of wood siding and faux stone work. The building on the corner of Telegraph Avenue and 39th Street is a single story commercial structure with features that suggest an Art Moderne building, including a flat roof with a deep curved canopy, a smooth wall finish, and the placement of horizontal bands of windows. This building contains an auto service establishment, so cars are generally parked within the front setback area.

The building located between 39th Street and Apgar Street is a newly constructed single-story brick building that is used as a medical office. Parking is provided onsite and occupies roughly half of the parcel.

There are two motels located on West MacArthur Boulevard that are included within the project site. One motel is a three-story, multi-unit wood framed, "L"-shaped building with individual rooms and a parking area to the rear. The other motel is a two-story U-shaped

Photo 1: View looking east of MacArthur BART parking lot

Photo 2: View looking south of MacArthur BART parking lot, Frontage Road, and Highway 24

FIGURES IV.L-1

MacArthur Transit Village Project EIR
MacArthur BART Parking Lot and Frontage Road

SOURCE: LSA ASSOCIATES, INC., 2007

Photo 3: View looking south of BART Plaza

Photo 4: View looking west of BART Plaza

FIGURES IV.L-2

MacArthur Transit Village Project EIR
MacArthur BART Plaza

SOURCE: LSA ASSOCIATES, INC., 2007

Photo 5: View looking west of existing commercial buildings on the project site

Photo 6: View looking west of the existing medical office on the project site

FIGURES IV.L-3

MacArthur Transit Village Project EIR
Existing Buildings on the Project Site

SOURCE: LSA ASSOCIATES, INC., 2007

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building with individual rooms and a parking area within the courtyard formed by the building.

c. Visual Character of the Surrounding Area. Given the urban nature of the project area, views from the project site of the surrounding area are generally limited to the immediate developed area adjacent to the site. From the project site, SR-24 is the dominant view to the west. Single-family residential uses and a mini-mall are located north of the project site. A church and commercial buildings are located east of the project site. All the surrounding streets include some landscaping including street trees, shrubs and ground cover; although the pattern of the landscaping is relatively varied and not consistent along any of the frontages. Distant views of the Oakland Hills are available intermittently depending on intervening development and the location of the view on the project site. Views of Downtown Oakland are available when looking down Telegraph Avenue to the south. Figure IV.L-4 shows views of the surrounding area.

d. Regulatory Setting. The main documents that are applicable to aesthetics and visual quality within and around the project site are the Land Use and Transportation Element of the General Plan, the Oakland Planning Code; and applicable Standard Conditions of Approval.

(1) Land Use and Transportation Element. The Land Use and Transportation Element (LUTE) is intended to guide development within the City of Oakland. Applicable aesthetic resources policies are listed below.

- Policy I/C4.3 Reducing Billboards. Billboards should be reduced or eliminated in commercial and residential areas in Oakland neighborhoods through mechanisms that minimize or do not require the expenditure of city funds.
- Policy T2.2 Guiding Transit-Oriented Development. Transit-oriented developments should be pedestrian-oriented, encourage night and day time use, provide the neighborhood with needed goods and services, contain a mix of land uses, and be designed to be compatible with the character of surrounding neighborhoods.
- Policy T6.2 Improving Streetscapes. The city should make major efforts to improve the visual quality of streetscapes. Design of the streetscape, particularly in neighborhoods and commercial centers, should be pedestrian-oriented and include lighting, directional signs, trees, benches, and other support facilities.
- Policy N1.5 Designing Commercial Development. Commercial development should be designed in a manner that is sensitive to surrounding residential uses.
- Policy N1.8 Making Compatible Development. The height and bulk of commercial development in “Neighborhood Mixed-Use Center” and “Community Commercial” areas should be compatible with that which is allowed for residential development.

Photo 7: View looking west of the project site, Apgar Street, and Highway 24 in the distance

Photo 8: View south of Telegraph Avenue and Downtown Oakland in the distance

FIGURES IV.L-4

MacArthur Transit Village Project EIR
Views of Surrounding Areas

SOURCE: LSA ASSOCIATES, INC., 2007

- Policy N3.8 Required High-Quality Design. High-quality design standards should be required of all new residential construction. Design requirements and permitting procedures should be developed and implemented in a manner that is sensitive to the added costs of those requirements and procedures.
- Policy N3.9 Orienting Residential Development. Residential developments should be encouraged to face the street and to orient their units to desirable sunlight and views, while avoiding unreasonably blocking sunlight and views for neighborhood buildings, respecting the privacy needs of residents of the development and surrounding properties, providing for sufficient conveniently located on-site open space, and avoiding undue noise exposure.
- Policy N3.10 Guiding the Development of Parking. Off-street parking for residential buildings should be adequate in amount and conveniently located and laid out, but its visual prominence should be minimized.
- Policy N7.1 Ensuring Compatible Development. New residential development in Detached Unit and Mixed Housing Type areas should be compatible with the density, scale, design, and existing or desired character of surrounding development.
- Policy N7.4 Designing Local Streets. Local streets should be designed to create an intimate neighborhood environment and not support high speed nor large volumes of traffic. Providing on-site parking for cars and bicycles, planting and maintaining street trees, and landscaping, minimizing the width of driveway curb cuts, maintaining streets, bike routes, and sidewalks, and orienting residential buildings toward the street all contribute to the desired environment.
- Policy N7.8 Developing Transit Villages. "Transit Village" areas should consist of attached multi-story development on properties near or adjacent to BART stations or other well-used or high volume transit facilities, such as light rail, train, ferry stations, or multiple-bus transfer locations. While residential units should be encouraged as part of any transit village, other uses may be included where they will not negatively affect the residential living environment. (See discussion of Transit-Oriented Districts in the Transportation section in this chapter.)
- Policy N8.2 Making Compatible Interfaces Between Densities. The height of development in urban residential and other higher density residential areas should step down as it nears lower density residential areas to minimize conflicts at the interface between the different types of development.
- Policy N12.7 Billboard Reduction. Billboards should be reduced or eliminated in commercial and residential areas in Oakland neighborhoods through mechanisms that minimize or do not require the expenditure of city funds.

(2) Open Space, Conservation, and Recreation Element. This element promotes the preservation and good design of open space, and the protection of natural resources to improve aesthetic quality in Oakland. The following objectives and policies are relevant to visual resources concerns associated with the proposed project:

- Policy OS-9.3: Gateway Improvements. Enhance neighborhood and city identity by maintaining or creating gateways. Maintain view corridors and enhance the sense of arrival at the major entrances to the city, including freeways, BART lines, and the airport entry. Use public art, landscaping, and signage to create stronger City and neighborhood gateways.

- Policy OS-10.1: View Protection. Protect the character of existing scenic views in Oakland, paying particular attention to: (a) views of the Oakland Hills from the flatlands; (b) views of downtown and Lake Merritt; (c) views of the shoreline; and (d) panoramic views from Skyline Boulevard, Grizzly Peak Road, and other hillside locations.
- Policy OS-10.2: Minimizing Adverse Visual Impacts. Encourage site planning for new development which minimizes adverse visual impacts and takes advantage of opportunities for new vistas and scenic enhancement.
- Policy OS-10.3: Underutilized Visual Resources. Enhance Oakland's underutilized visual resources, including the waterfront, creeks, San Leandro Bay, architecturally significant buildings or landmarks, and major thoroughfares.

(3) Oakland Planning Code. The design of new projects in Oakland are subject to the following performance criteria that are utilized as part of the City's design review process.

A. For Residential Facilities.

1. That the proposed design will create a building or set of buildings that are well related to the surrounding area in their setting, scale, bulk, height, materials, and textures;
2. That the proposed design will protect, preserve, or enhance desirable neighborhood characteristics;
3. That the proposed design will be sensitive to the topography and landscape.
4. That, if situated on a hill, the design and massing of the proposed building relates to the grade of the hill;
5. That the proposed design conforms in all significant respects with the Oakland General Plan and with any applicable design review guidelines or criteria, district plan, or development control map which have been adopted by the Planning Commission or City Council.

B. For Nonresidential Facilities and Signs.

1. That the proposal will help achieve or maintain a group of facilities which are well related to one another and which, when taken together, will result in a well-composed design, with consideration given to site, landscape, bulk, height, arrangement, texture, materials, colors, and appurtenances; the relation of these factors to other facilities in the vicinity; and the relation of the proposal to the total setting as seen from key points in the surrounding area. Only elements of design which have some significant relationship to outside appearance shall be considered, except as otherwise provided in Section 17.136.060;
2. That the proposed design will be of a quality and character which harmonizes with, and serves to protect the value of, private and public investments in the area;
3. That the proposed design conforms in all significant respects with the Oakland General Plan and with any applicable design review guidelines or criteria, district plan, or development control map which have been adopted by the Planning Commission or City Council.

(4) City of Oakland's Standard Conditions of Approval. The City's Standard Conditions of Approval relevant to this impact topic are listed below for reference. The conditions of approval will be adopted as requirements of the proposed project if the project is approved by the City to help ensure no significant impacts (for the applicable topic) occur, as a result they are not listed as mitigation measures.

COA AES-1: Lighting Plan. *Prior to the issuance of an electrical or building permit*
The proposed lighting fixtures shall be adequately shielded to a point below the light bulb and reflector and that prevent unnecessary glare onto adjacent properties. All lighting shall be architecturally integrated into the site.

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

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

a) No tree replacement shall be required for the removal of nonnative species, for the removal of trees which is required for the benefit of remaining trees, or where insufficient planting area exists for a mature tree of the species being considered.
b) Replacement tree species shall consist of Sequoia sempervirens (Coast Redwood), Quercus agrifolia (Coast Live Oak), Arbutus menziesii (Madrone), Aesculus californica (California Buckeye) or Umbelluiana californica (California Bay Laurel) or other tree species acceptable to the Tree Services Division.
c) Replacement trees shall be at least of twenty-four (24) inch box size, unless a smaller size is recommended by the arborist, except that three fifteen (15) gallon size trees may be substituted for each twenty-four (24) inch box size tree where appropriate.
d) Minimum planting areas must be available on site as follows:
    - For Sequoia sempervirens, three hundred fifteen square feet per tree;
    - For all other species listed in #2 above, seven hundred (700) square feet per tree.
e) In the event that replacement trees are required but cannot be planted due to site constraints, an in lieu fee as determined by the master fee schedule of the city may be substituted for required replacement plantings, with all such revenues applied toward tree planting in city parks, streets and medians.
f) Plantings shall be installed prior to the issuance of a final inspection of the building permit, subject to seasonal constraints, and shall be maintained by the project applicant until established. The Tree Reviewer may require a landscape plan showing the replacement planting and the method of irrigation. Any replacement planting which fails to become established within one year of planting shall be replanted at the project applicant's expense.

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

a) Before the start of any clearing, excavation, construction or other work on the site, every protected tree deemed to be potentially endangered by said site work shall be securely fenced off at a distance from the base of the tree to be determined by the City Tree Reviewer. Such fences shall remain in place for duration of all such work. All trees to be removed shall be clearly marked. A scheme shall be established for the removal and disposal of logs, brush, earth and other debris which will avoid injury to any protected tree.

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

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

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

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

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

2. Impacts and Mitigation Measures

This section discusses potential impacts on aesthetic resources that could result from implementation of the proposed project. The section begins with the criteria of significance, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, if appropriate. To guide the assessment of whether the chance would reasonably constitute a demonstrable negative effect, the analysis includes computer-generated photo simulations illustrating "before" and "after" views and vistas across the project site. Figure IV.L-5 shows the view point locations. Figures IV.L-6 through IV.L-11 show photosimulations.

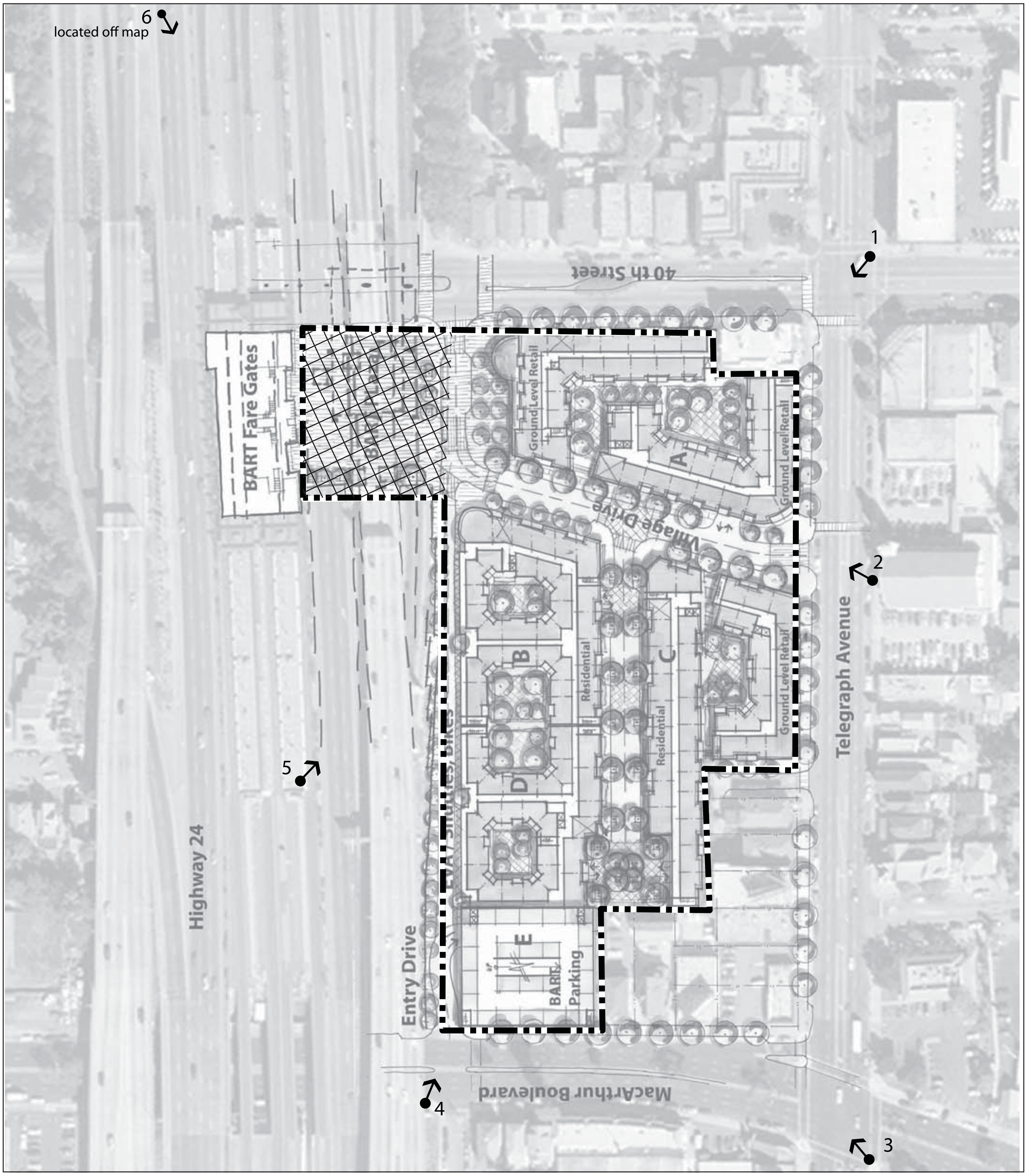

FIGURE IV.L-5

Legend

Project site

BART Plaza

1 Photo Viewpoint

N NTS

MacArthur Transit Village Project EIR

Photo Viewpoint Locations

SOURCE: Environmental Vision, 2007.

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Existing view from West MacArthur Boulevard looking north to Entry Drive (Viewpoint 4)

Conceptual visual simulation of the proposed project from Viewpoint 4
(Proposed Parking Garage and Building D shown)

FIGURE IV.L-6

MacArthur Transit Village Project EIR
Conceptual Visual Simulation from Viewpoint 4

SOURCE: ENVIRONMENTAL VISION, RRM Design Group., 2007

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Existing view from Highway 24 southbound towards the project site (Viewpoint 6)

Conceptual visual simulation of the proposed project from Viewpoint 6
(Proposed Buildings A and B shown)

FIGURE IV.L-7

MacArthur Transit Village Project EIR
Conceptual Visual Simulation from Viewpoint 6

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP, 2007

Existing view of project site from the MacArthur BART station platform (Viewpoint 5)

Conceptual visual simulation of the proposed project from Viewpoint 5
(Proposed Building A shown)

FIGURE IV.L-8

MacArthur Transit Village Project EIR
Conceptual Visual Simulation from Viewpoint 5

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

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Existing view of project site from the intersection of Telegraph Avenue and 40th Street (Viewpoint 1)

Conceptual visual simulation of the proposed project from Viewpoint 1
(Proposed Buildings A and C shown)

FIGURES IV.L-9

MacArthur Transit Village Project EIR
Conceptual Visual Simulation from Viewpoint 1

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

Existing view of project site from the intersection of Telegraph Avenue and 40th Street (Viewpoint 2)

Conceptual visual simulation of the proposed project from Viewpoint 2
(Proposed Building A shown)

FIGURES IV.L-10

MacArthur Transit Village Project EIR
Conceptual Visual Simulation from Viewpoint 2

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

Existing view of project site from the intersection of Mac Arthur Blvd. and Telegraph Avenue (Viewpoint 3)

Conceptual visual simulation of the proposed project from Viewpoint 3
(Proposed Parking Garage and Buildings D and B shown)

FIGURES IV.L-11

MacArthur Transit Village Project EIR
Conceptual Visual Simulation from Viewpoint 3

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

a. Criteria of Significance. Implementation of the proposed project would have a significant effect on aesthetic resources if it would:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State or locally designated scenic highway;
- Substantially degrade the existing visual character or quality of the site and its surroundings;
- Create a new source of substantial light or glare which would substantially and adversely affect day or nighttime views in the area;
- Introduce landscape that would now or in the future cast substantial shadows on existing solar collectors (in conflict with California Public Resource Code Section 25980-25986);
- Cast shadow that substantially impairs the function of a building using passive solar heat collection, solar collectors for hot water heating, or photovoltaic solar collectors;
- Cast shadow that substantially impairs the beneficial use of any public or quasi-public park, lawn, garden, or open space;
- Cast shadow on an historic resource, as defined by CEQA Section 15064.5(a) and the City of Oakland, such that the shadow would materially impair the resource's historic significance by materially altering those physical characteristics of the resource that convey its historical significance and that justify its inclusion on or eligibility for listing in the National Register of Historic Places, California Register of Historical Resources, Local register of historical resources or a historical resource survey form (DPR Form 523) with a rating of 1-5];
- Require an exception (variance) to the policies and regulations in the General Plan, Planning Code, or Uniform Building Code, and the exception causes a fundamental conflict with policies and regulations in the General Plan, Planning Code, and Uniform Building Code addressing the provision of adequate light related to appropriate uses; or
- Create winds exceeding 36 mph for more than 1 hour during daylight hours during the year.[1]

[1] The wind analysis only needs to be done if the project's height is 100 feet or greater (measured to the roof) **and** one of the following conditions exist: (a) the project is located adjacent to a substantial water body (i.e., Oakland Estuary, Lake Merritt or San Francisco Bay); or (b) the project is located in Downtown. Downtown is defined in the Land Use and Transportation Element of the General Plan (page 67) as the area generally bounded by West Grand Avenue to the north, Lake Merritt and Channel Park to the east, the Oakland Estuary to the south and I-980/Brush Street to the west.

b. Less-than-Significant Aesthetic Resources Impacts. The following discussion describes the less-than-significant impacts to aesthetic resources that would result from implementation of the proposed Project. The wind criterion is not considered as none of the proposed buildings will exceed.100 feet.

(1) Scenic Vistas. Given the urban nature and the relatively flat topography of the project area, views from and through the project site of the surrounding area are generally limited to the immediate developed area adjacent to the site. From the project site, SR-24 is the dominant view to the west. Views to the East Bay Hills and Downtown Oakland from the project site and surrounding public viewpoints are limited by surrounding development and the surrounding area's flat topography. No views of San Francisco Bay are available from the Project site. Although views from the site extend to Downtown Oakland and surrounding urban development, these views are not identified as vistas or resources in the General Plan, or by regulatory agencies with jurisdiction over the project site. As a result, the project would not significantly alter scenic vistas.

(2) Scenic Highway. The proposed development would be visible from SR-24 and Interstate 580 (I-580). The City of Oakland Scenic Highways Element[1] and the California Department of Transportation designate the I-580 as a scenic highway for the portion of I-80 between San Leandro City limits and SR-4. The City's Scenic Highways Element does not designate SR-24 as scenic highway. California Department of Transportation does designate SR-24 as a scenic highway; however, this designation only pertains to the portion of SR-24 between the east portal of the Caldecott Tunnel to SR-680.[2] The interchange of I-580 to SR-24 is elevated such that that project site would be visible by motorists as they merge from I-580 to SR-24. The proposed project is not anticipated to damage view of scenic resources for motorists on I-580 because the size and scale of the project would not substantially interfere with the view from the I-580/SR-24 interchange.

(3) Visual Character. As described above the existing visual character of the site is comprised of three primary elements: the BART parking lot and Frontage Road; the BART plaza; and the existing structures along Telegraph Avenue and West MacArthur Boulevard. Because of the predominance of surface parking within the project site, the site has an empty visual character that contrasts with the more active residential and commercial areas west of the project site along Telegraph Avenue, 40th Street and MacArthur Boulevard. Development on the site is currently lacking character and is not very aesthetically appealing.

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[1] City of Oakland, 1974. *Scenic Highways, An Element of the Oakland Comprehensive Plan,* September.

[2] California Department of Transportation website: http://www.dot.ca.gov/hq/LandArch/scenic_highways.

Implementation of the proposed project would result in the development of mixed uses within the project site. The proposed buildings are of a scale and form that are similar to buildings in more vibrant urban neighborhoods within Oakland and nearby Emeryville. The proposed project would develop parcels within the project site that are currently underutilized and would introduce a permanent residential population, which will help better connect the people with the urban environment. This resident and employee population would increase activity within and around the MacArthur BART station, and would increase the visual appeal of this portion of North Oakland. In addition, proposed streetscape improvements, and development of the BART plaza would enhance visual quality within the project site, which contains few "soft" landscape elements.

The proposed project would involve the construction of five buildings on the project site, including three mixed-use buildings with ground-floor commercial spaces and residential units on upper floors, one entirely residential building and one parking garage. The buildings include a mix of five- and six-story building elements. The proposed project also includes construction of two new streets (Village Drive and Internal Street) and maintenance of the Frontage Road within the project area. Village Drive and Internal Street would provide access to new structures within the project, and increased access to the BART station.

Increased and enhanced access to the BART station is a key component of the proposed project and will enhance the visual character of the project site. Village Drive, the main pedestrian and vehicular access to the project, is envisioned as a lively pedestrian street with shops and service uses that include outdoor displays and seating areas. The project also includes a new public plaza immediately east of the BART plaza and fare gates. The transit village plaza would include outdoor seating, landscaping, and other activity to provide a sense of arrival to the project, especially for BART patrons as they enter and exit the station. Internal Street, which provides access to a majority of the residential units, is envisioned as a neighborhood street. Residential units would front onto Internal Street with stoops and front porches.

The proposed project would be highly visible from some locations along public streets within the project vicinity including 40th Street, West MacArthur Boulevard, Telegraph Avenue and SR-24.

Figures IV.L-6, IV.L-9, IV.L-10 and IV.L-11 present "before" and "after" views of the project site from MacArthur Boulevard and Telegraph Avenue. As shown in these simulations, the buildings would appear prominently in the foreground of all the street frontages. In relationship to surrounding development, the height of the new development, particularly the garage, could be somewhat overbearing when compared to existing development. However, the urban design fabric surrounding the site supports this scale of development including street widths, some of the taller historic and new developments located along the

Telegraph Avenue corridor between Downtown and 51st Avenue. Figures IV.L-7 and IV.L-8 present "before" and "after" views of from State Route 24 and the BART station platform, respectively. As shown in the simulations, the proposed project would not significantly alter these views.

The proposed buildings, which would range from five to six stories, would be similar in height to some of the newer development in North Oakland, although the buildings would be substantially taller than the majority of existing and older development in the area. However, due to the site's adjacency to the MacArthur BART station and State Route 24, which is elevated the additional height and mass and scale of the development would not substantially degrade the existing visual character or quality of the site and its surroundings.

(4) Light and Glare. The proposed development would provide additional sources of nighttime lighting within North Oakland. In addition, during daylight hours pedestrians and motorists could experience some degree of glare due to light reflecting off the new building facades. Implementation of Standard Condition of Approval, AES-1: Lighting Plan, would ensure that the use of reflective exterior materials is minimized and that proposed reflective material would not create additional daytime or nighttime glare.

(5) Shade and Shadow. Development of the proposed project would result in the addition of five new, mid-rise buildings. A shadow analysis, see Figures IV.L-12 to IV.L-17, was conducted to determine whether the five proposed buildings would cast new shadows on buildings, streets, and parking areas within and adjacent to the project site. Overall the shadow impacts on adjacent properties from the proposed project would not be that substantial as the majority of the shadows will be cast towards the freeway and onto the project site. Shadows created by the proposed project on December 21, winter solstice, would be the most extensive; however, the winter solstice shadows would not be significant because the new shadows created by the project would minimally contribute to the existing shadow condition on this day and, as a result, would not be considered significant.

(6) Aesthetic Resources Policies. The proposed project is generally consistent with applicable visual resources policies in the General Plan; see section IV.B, for a more detailed discussion. The project would result in the development of a mixed use project on an infill site that is currently characterized by surface parking and underutilized development. By creating a more unified streetscape, the proposed project would result in a more visually comfortable pedestrian environment than currently exists within the project vicinity.

The proposed project would undergo design review prior to final Project approval; during this time, the Project design could be subject to refinement to ensure compatibility with the Design Review Criteria listed earlier in this section. Based on preliminary plans, it is anticipated that there would be no major conflicts between the proposed design of the Project and the Design Review Criteria.

c. Significant Aesthetic Resources Impacts. The proposed project would not result in any significant aesthetic-related impacts.

d. Cumulative Aesthetic Resources Impacts. The geographic area considered for the aesthetic cumulative analysis includes the area in close proximity to the project site including North Oakland, parts of West Oakland and Downtown/Oakland Central, south of I-580 to Grand Avenue between San Pablo Avenue on the west and Harrison Street on the east as generally depicted on Figure I-1 on page 2. This area was defined because it includes the project site, the immediately surrounding neighborhoods, and the larger City context for the project.

As analyzed throughout this section, the proposed project would not result in a significant aesthetic impact by creating a substantial adverse effect on a scenic vista; substantially damaging scenic resources; substantially degrading the existing visual character or quality of the site and its surroundings; creating a new source of substantial light or glare; introduce landscape that would now or in the future cast substantial shadows on existing solar collectors; casting shadow that substantially impairs the function of a building using passive solar heat collection, impairs the beneficial use of any public or quasi-public park, lawn, garden, or open space, or shadow on a historic resource.

The proposed project is consistent with the City's General Plan Land Use designation for the site and together with the majority of past, present, existing, pending and reasonably foreseeable future development projects, is subject to the City's design review process. The purpose of the design review process is to consider the design treatment and relationship of buildings to the surrounding built environment and ensure no significant adverse aesthetic impacts would result. Thus, the proposed project would not combine with, or add to, any potential adverse aesthetic impacts that may be associated with other cumulative development.

Cumulative development, in combination with the proposed project, has and would continue to result in new buildings of varying size and scale being developed on infill or vacant sites throughout the area. A review of cumulative development in the defined geographic area, including past, present, existing, pending and reasonably foreseeable future development reveals the proposed structures within the project site are of similar size and scale to other development projects in the area. The project is generally consistent with adopted plans and the overall vision for the area. Based on the information in this aesthetic section and for the reasons summarized above, the project would not contribute to any significant adverse cumulative aesthetic impacts when considered together with past, present and reasonably foreseeable future development.

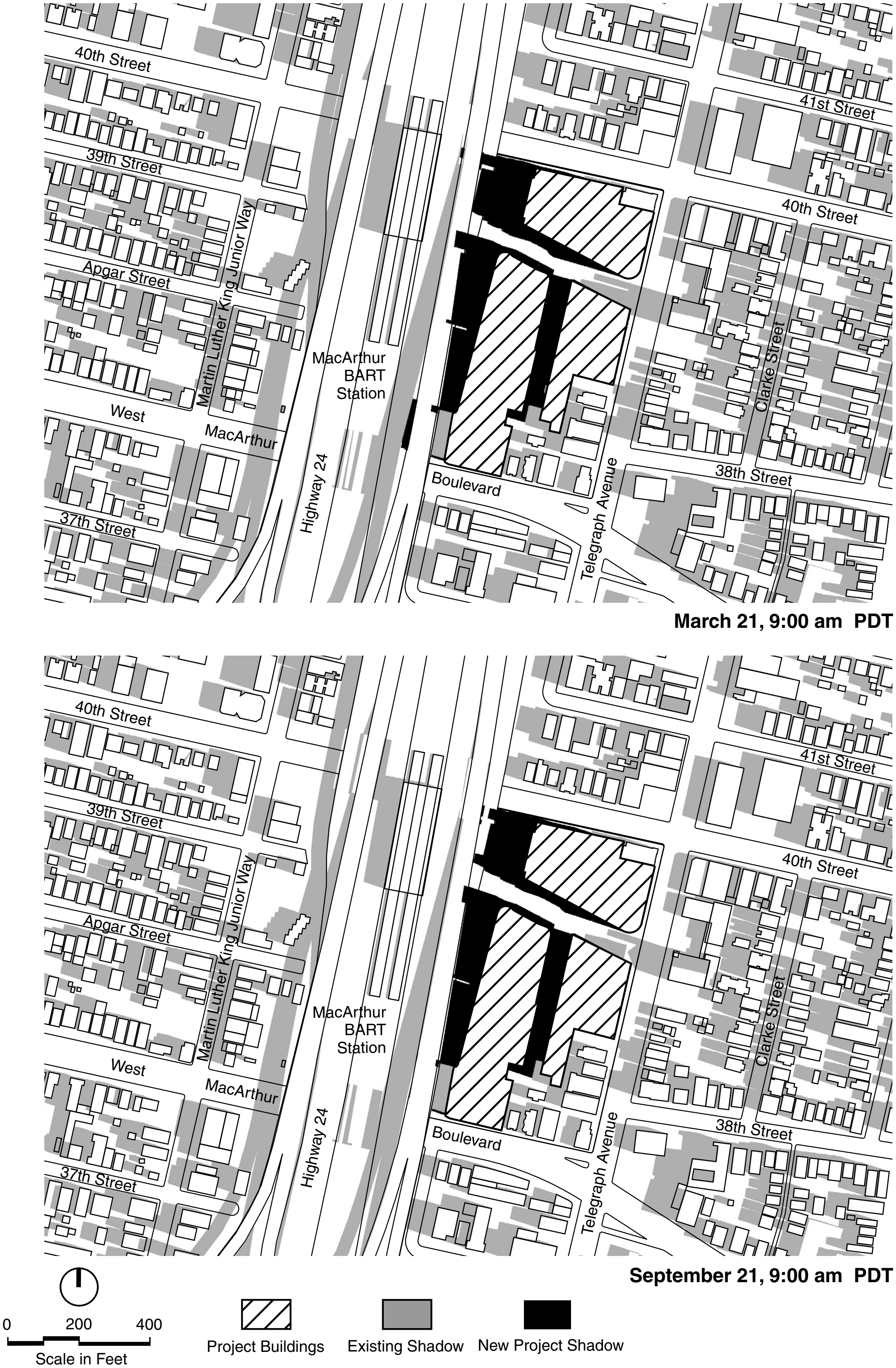

FIGURE IV.L-12

MacArthur Transit Village Project EIR
Proposed Project Shadow Patterns

SOURCE: Environmental Vision, 2008.

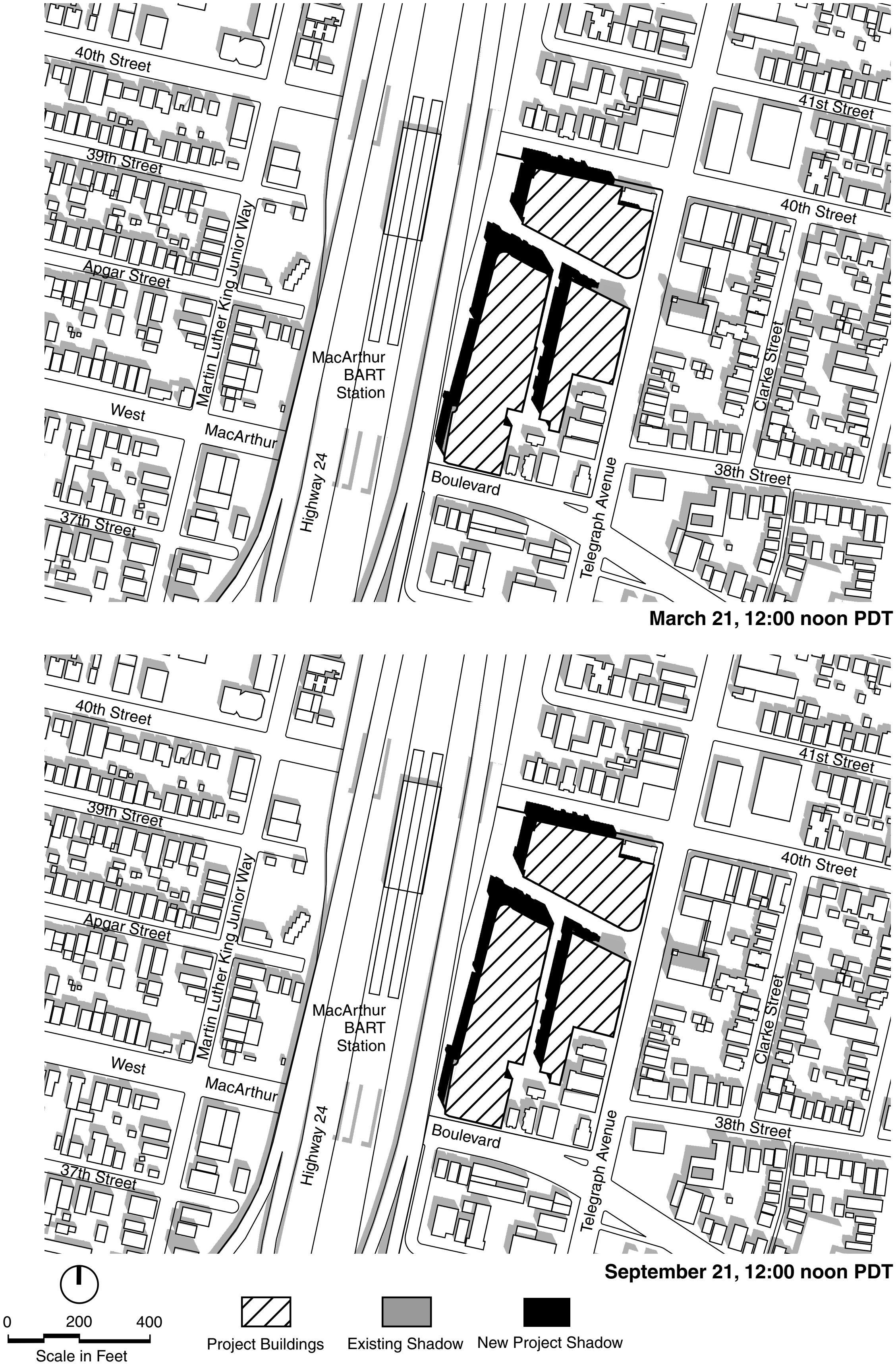

FIGURE IV.L-13

MacArthur Transit Village Project EIR
Proposed Project Shadow Patterns

SOURCE: Environmental Vision, 2008.

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FIGURE IV.L-14

MacArthur Transit Village Project EIR
Proposed Project Shadow Patterns

SOURCE: Environmental Vision, 2008.

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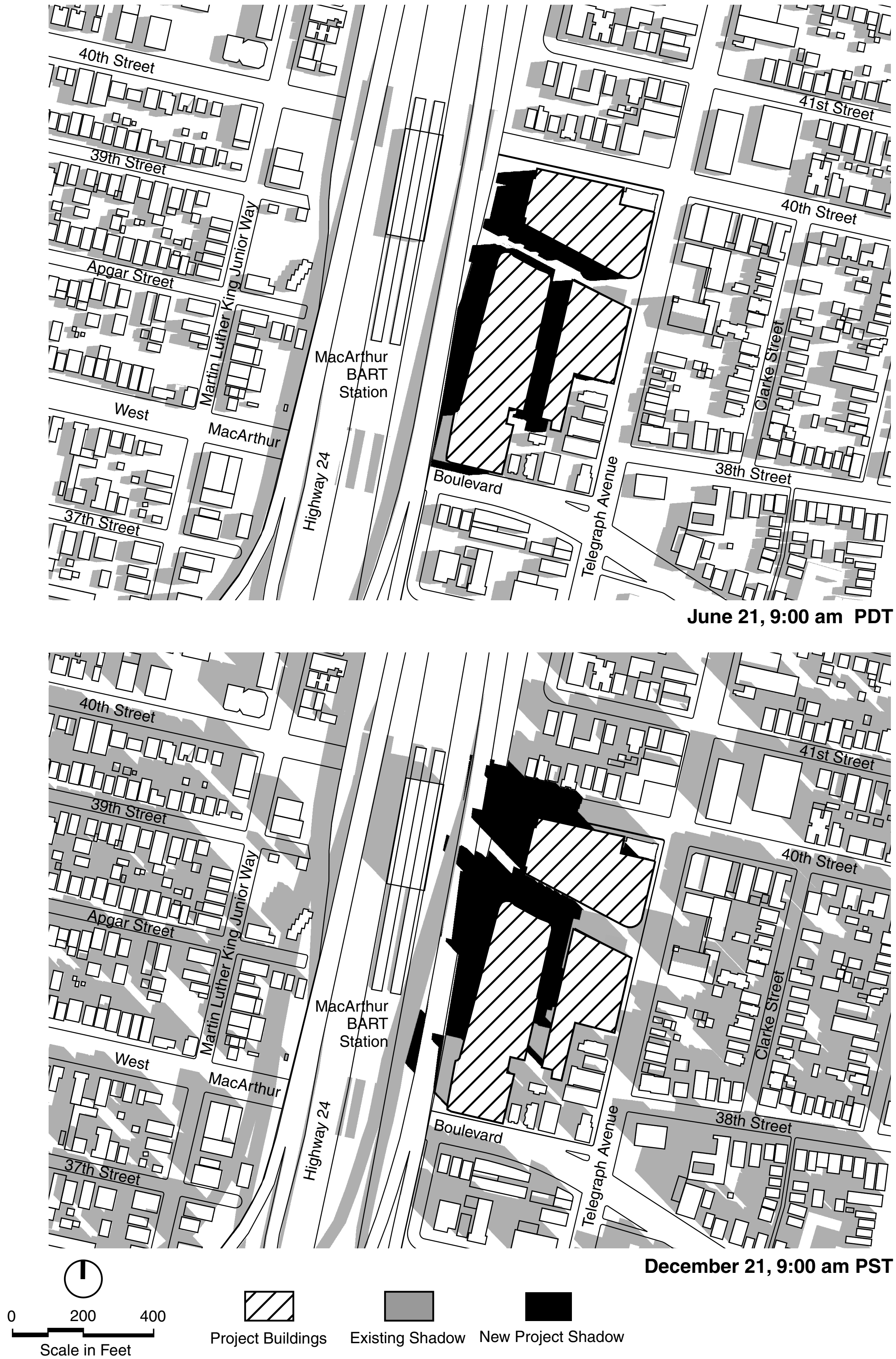

FIGURE IV.L-15

MacArthur Transit Village Project EIR
Proposed Project Shadow Patterns

SOURCE: Environmental Vision, 2008.

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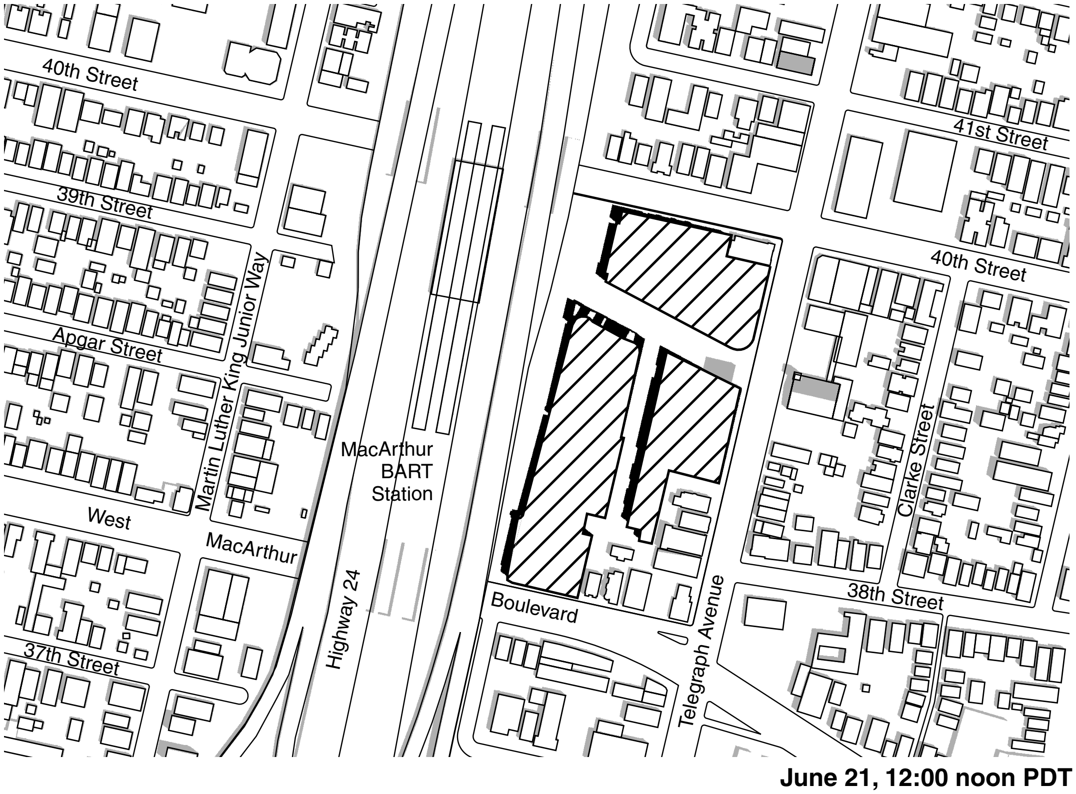

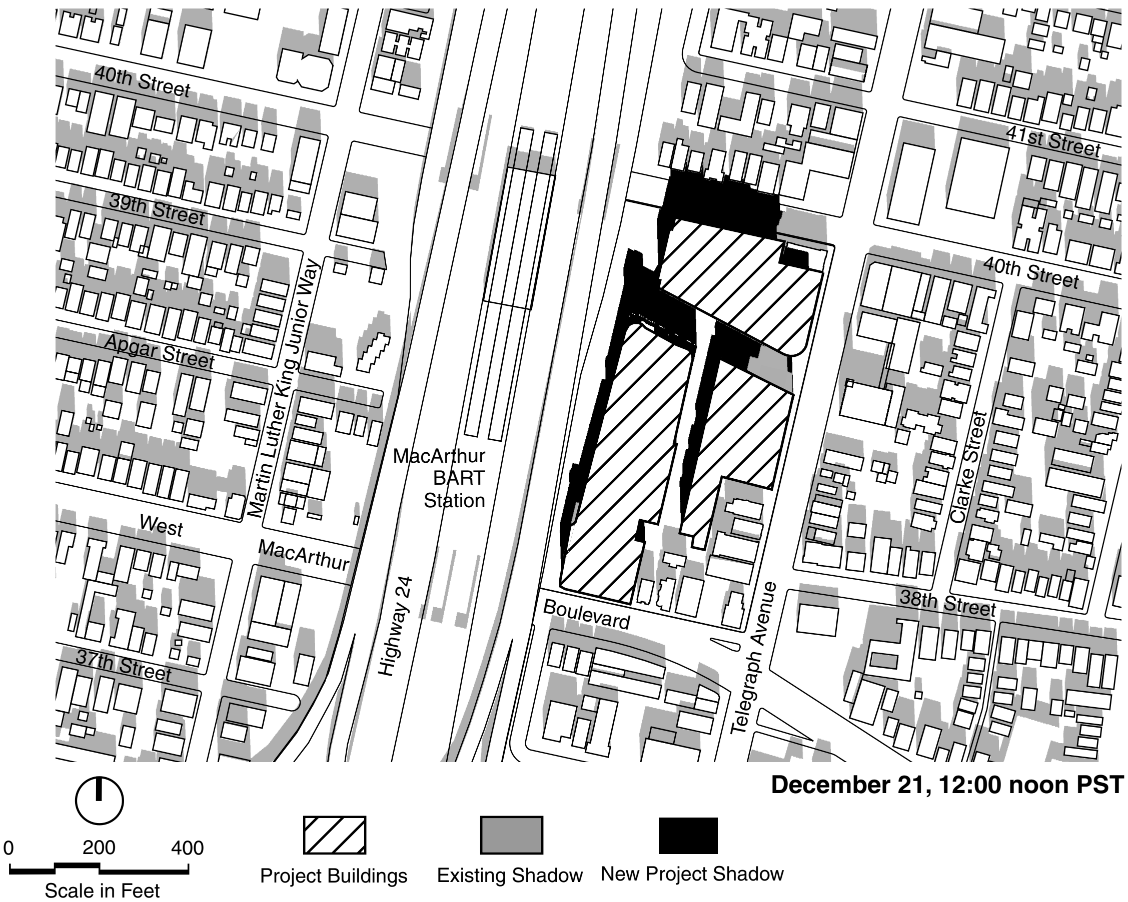

FIGURE IV.L-16

MacArthur Transit Village Project EIR
Proposed Project Shadow Patterns

SOURCE: Environmental Vision, 2008.

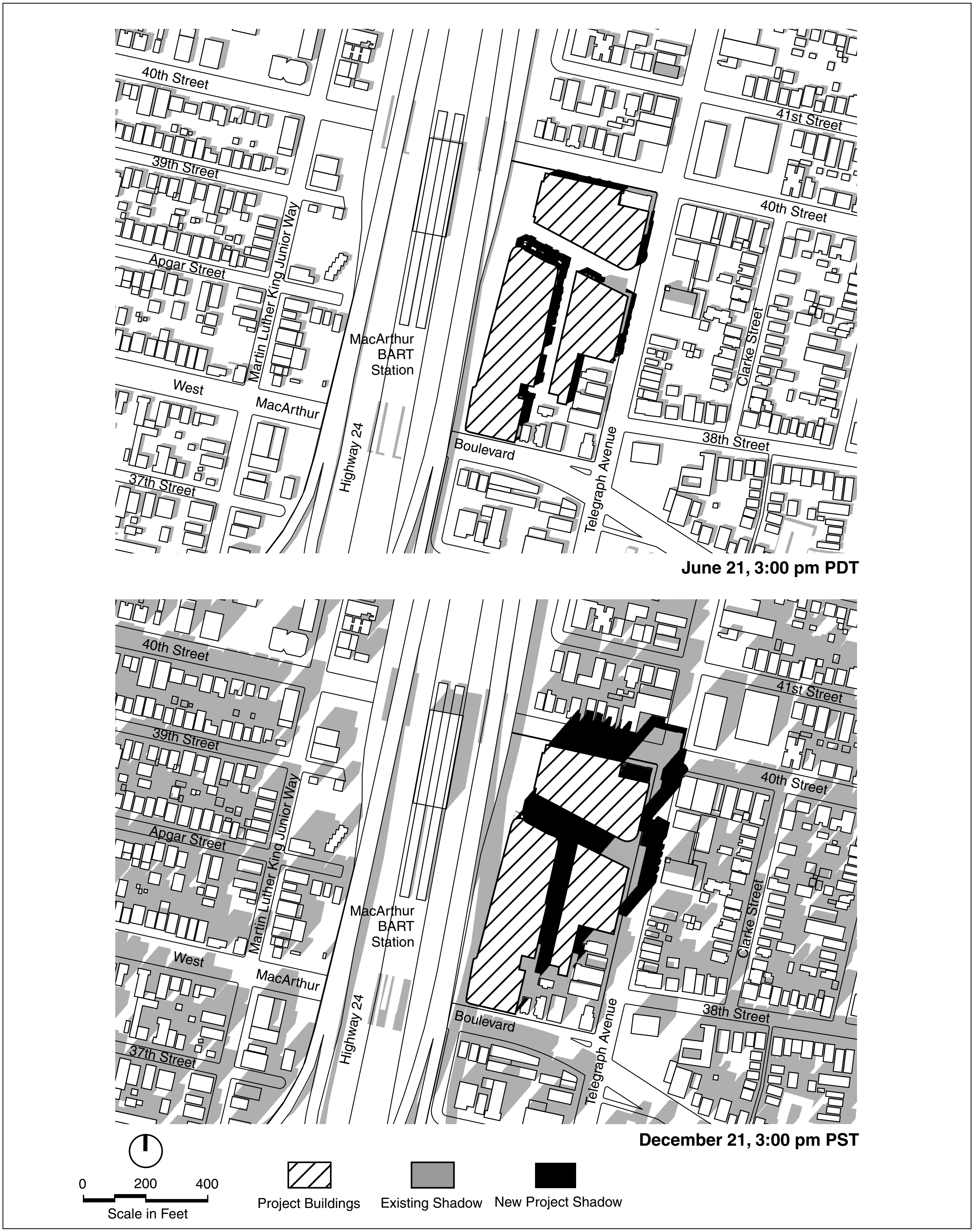

FIGURE IV.L-17

MacArthur Transit Village Project EIR
Proposed Project Shadow Patterns

SOURCE: Environmental Vision, 2008.

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V. ALTERNATIVES

The *CEQA Guidelines* require the analysis of a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the project's basic objectives and avoid or substantially lessen any of the significant effects of the project. The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice.[1] An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation.

The primary purpose of this chapter is to ascertain whether there are alternatives of design, scale, land use, or location that would substantially lessen the project's significant impacts, even if those alternatives "impede to some degree the attainment of the project objectives, or would be more costly."[2]

Under some circumstances, as with this EIR, in addition to considering alternatives that lessen the significant project impacts for purposes of CEQA, additional "planning" alternatives are analyzed. The planning alternatives in this EIR are evaluated primarily to consider variants to the project that may be desirable to the project developer, the City, BART, and/or members of the community, but might not lessen or avoid any of the significant, adverse environmental effects of the project. The planning alternatives may result in similar or more severe environmental impacts, but address an objective outside the scope of CEQA (i.e., community interest, agency policy, developer objectives, economics).

The three CEQA project alternatives to the proposed project considered include:

- No Project/No Build Alternative
- Existing Zoning Alternative
- Mitigated Reduced Building/Site Alternative

The three planning project alternatives to the proposed project considered include:

- Proposed Project with Full BART Replacement Parking Alternative

[1] *CEQA Guidelines*, Section 15126.6.

[2] *CEQA Guidelines,* Section 15126.6(b).

- Tower Alternative
- Increased Commercial Alternative

A summary comparison of the key components of each alternative is included in Table V-1.

In considering the range of alternatives to be analyzed in an EIR, the CEQA Guidelines state that an alternative site/location should be considered when feasible alternative locations are available and the "significant effects of the project would be avoided or substantially lessened by putting the project in another location." No specific alternative site locations are considered in this EIR. The only unavoidable significant impacts that would occur from project implementation are the two intersections listed below. Relocation of the project to another location, if one was available, may eliminate the impact to these specific intersections, but would likely result in impacts at different intersections in proximity to the alternate site. In Oakland, however, there are no other sites of comparable size that are immediately adjacent to a BART station and would accommodate the proposed development that are not already the subject to their own development proposals. Further, because the proposed project involves redevelopment, infilling, and intensifying land uses on the MacArthur BART parking lot, studying an off-site alternative would fail to achieve the project's objectives. As such, an alternative site location is not considered.

The remainder of this chapter is organized as follows: overview of project objectives and impacts; description and analysis of CEQA project alternatives; description and analysis of planning alternatives; summary comparison of alternatives; and discussion of environmentally-superior alternative.

A. PROJECT OBJECTIVES AND IMPACTS

To determine what range of alternatives should be considered, the impacts identified for the proposed project were considered along with the project objectives. The proposed project is described in detail in Chapter III, Project Description, and the potential environmental effects of the proposed project are analyzed in Chapter IV, Setting, Impacts, and Mitigation Measures. The project objectives and impacts are found below.

1. Project Objectives

The MacArthur Transit Village Project seeks to redevelop and revitalize an underutilized site in Oakland to create a vibrant transit village that provides pedestrian oriented, mixed use development (housing, commercial and community services) that enhances the character of the neighborhood and improves access to (for all travel modes) and ridership of BART. Specifically, the project seeks to:

Table V-1 Project and Alternatives

	Project Alternative	Demo of Existing Structures/Parking Lot	Proposed Development	Parking Spaces	Remediation of Hazards	BART Improvements
Proposed Project						
	Proposed Project	Yes, demolition of all structures and of parking lot	• 5 Structures/Mixed Use (includes BART parking structure) • Structures 4-7 stories • Up to 675 dwelling units (17% affordable) • Up to 44,000 SF commercial (includes 18 live/work units) • 5,000 SF community space	• 700 spaces • 300 exclusive BART spaces	Yes	• Access/circulation improvements • Plaza improvements
CEQA Alternatives						
1	**No Project/ No Build**	No, site remains in current condition	• No development/improvements	• No change to configuration	No	• None
2	**Existing Zoning Alternative**	Yes, demolition of all structures/parking lot	• 5 Structures/Mixed Use (includes BART parking structure) • 4-story structures on MacArthur and Telegraph 55 ft (C-28 zone) • 3-4 story structures on BART parking lot 40 ft (R-70 zone) • 530 dwelling units (17% affordable) • 44,000 SF commercial	• 715 parking spaces • 300 exclusive BART spaces	Yes	• Access/circulation improvements • Plaza improvements
3	**Mitigated Reduced Building/Site Alternative (Mitigated)**	Yes, demolition of parking lot, but maintains existing buildings on Telegraph Ave. and MacArthur Blvd.	• Site area is reduced to not include two motel buildings on W. MacArthur or medical bldg on Telegraph • 5 Structures/Mixed Use (includes BART Parking Structure) • Structures 5-6 stories (up to approximately 75-85 ft tall) • 200 dwelling units • 20,000 SF commercial • No community space	• 350 parking spaces • 300 exclusive BART spaces	Only on BART property	• Access/circulation improvements • Plaza improvements

Table V-1 Project and Alternatives

	Project Alternative	Demo of Existing Structures/Parking Lot	Proposed Development	Parking Spaces	Remediation of Hazards	BART Improvements
Planning Alternatives (related to project merits vs. lessening impacts)						
A	**Proposed Project with Full BART Replacement Parking**	Yes, demolition of all structures/parking lot	• 5 Structures/Mixed Use (includes BART Parking Structure) • Structures 5-6 stories (up to 75 ft tall) and 12-13 for parking structure (up to 135 ft tall) • 675 dwelling units (17% affordable) • 44,000 SF commercial • 5,000 SF community	• Approximately 700 spaces • 600 exclusive BART spaces	Yes	• Access/ circulation improvements • Plaza improvements
B	**Tower Alternative**	Yes, demolition of all structures/parking lot	• 5 Structures/Mixed Use (includes BART Parking Structure) • One 23-story residential tower (up to 240 ft tall); one 6-story building; two 5-story buildings; and one 4-story building with building height ranging from 50 ft to 85 ft • 868 residential units (17% affordable) • 34,000 SF commercial • 7,500 SF community	• 810 parking spaces • 300 exclusive BART spaces	Yes	• Access/circulation improvements • Plaza improvements
C	**Increased Commercial Alternative**	Yes, demolition of all structures/parking lot	• 5 Structures/Mixed Use (includes BART Parking Structure) • One 5- story commercial office building with ground floor commercial; four 5-story buildings with building heights not to exceed 85 ft • 172,000 SF office • 475 dwelling units (17% affordable) • 27,000 SF commercial • 5,000 SF community	• 790 parking spaces • 300 exclusive BART spaces	Yes	• Access/circulation improvements • Plaza improvements

- Create a transit-oriented community that encourages pedestrian and bicycle access and the use of public transportation.
- Increase transit ridership and enhance quality of life at and around the BART station by encouraging and supporting high quality transit-oriented development (TOD) within walking distance of the BART station.
- Enhance City and local community redevelopment efforts and strengthen existing neighborhood-serving businesses
- Improve safety on and around the project site by activating the development's street-level experience through ground floor commercial and residential stoop entries that promote more "eyes on the street."
- Provide a substantial number of affordable housing units that can be developed on the site to serve low and very low income families.
- Develop market-rate residential units at urban densities that provide housing opportunities for a range of income levels.
- Develop urban infill housing with convenient transportation access near the urban core that would serve to divert housing from outlying areas and reduce long distance commute traffic-related pollution.
- Become a model transit village for environmentally friendly and sustainable development.
- Construct financially feasible developments with sufficient flexibility to adjust to market needs and to provide reasonable returns on investment so as to secure construction and long-term financing.
- Provide transit patrons and community residents with additional opportunities to purchase goods and services.
- Provide employment opportunities from development and operation of mixed-use development around the station.

Additionally, the following objectives relate specifically to BART improvements.

- Increase BART ridership.
- Improve the existing public open space in front of the BART fare gates, including the BART Plaza and the area surrounding the station, to revitalize the station area and incorporate the plaza into the design of the development to more effectively link it to the surrounding community.
- Encourage alternatives to single-occupant vehicle access to the BART station, such as access by walking, bicycles, passenger drop-off/pick-up and transit.

- Increase TOD projects on and off BART property through creative planning and development partnerships with the local community.
- Minimize the physical barriers created in the community by the construction of the BART Station and State Route 24 through the reintegration of the BART Station with the surrounding community.

2. Project Impacts

Impacts associated with the following environmental topics would be significant for the proposed project without the implementation of the recommended mitigation measures, but would be reduced to a **less-than-significant level if the mitigation measures** are implemented:

- TRANS-1: The addition of project traffic would cause a significant impact at the Telegraph Avenue/51st Street intersection (#3) under Cumulative Year 2015 Baseline Plus Project conditions. The project would contribute to LOS E operations during the PM peak hour and increase critical movement average delay by more than 6 seconds.
- TRANS-2: The addition of project traffic would cause a significant impact at the Market Street/MacArthur Boulevard intersection (#16) under Cumulative Year 2015 Baseline Plus Project conditions. The project would degrade intersection operations from LOS D to LOS E during the PM peak hour.
- TRANS-3: The addition of project traffic would cause a significant impact at the Telegraph Avenue/52nd Street and Claremont Avenue intersection (#2) under Cumulative 2030 Baseline Plus Project conditions. The project would contribute to LOS F operations and increase intersection average delay by more than 2 seconds during the AM peak hour; would contribute to LOS E operations and increase critical movement average delay by more than 6 seconds during the PM peak hour.
- TRANS-5: The addition of project traffic would cause a significant impact at the West Street/40th Street intersection (#8) under Cumulative Year 2030 Baseline Plus Project conditions. The project would degrade intersection operations from LOS D to LOS E in the PM peak hour.
- TRANS-6: The addition of project traffic would cause a significant impact at the Telegraph Avenue/40th Street intersection (#13) under Cumulative Year 2030 Baseline Plus Project conditions. During the PM peak hour, the project would contribute to LOS F operations and would increase critical movement average delay by more than 4 seconds.
- TRANS-7: The addition of project traffic would cause a significant impact at the Market Street/MacArthur Boulevard intersection (#16) under Cumulative Year 2030 Baseline Plus Project conditions. The project would contribute to LOS F operations, and would increase intersection average delay by more than 2 seconds, during both AM and PM peak hours.

- TRANS-8: The addition of project traffic would cause a significant impact at the Telegraph Avenue/MacArthur Boulevard intersection (#20) under Cumulative Year 2030 Baseline Plus Project conditions. The project would degrade intersection operations from LOS D to LOS E in the AM peak hour.

The following impacts are significant and unavoidable, and can not be reduced to a less-than-significant level with implementation of mitigation measures. After mitigation, the revised project would result in the following **significant unavoidable** impacts:

- TRANS-4: The addition of project traffic would cause a significant impact at the Telegraph Avenue/51st Street intersection (#3) under Cumulative Year 2030 Baseline Plus Project conditions. The project would contribute to LOS F operations during both AM and PM peak hours; would increase critical movement average delay by more than 4 seconds during the AM peak hour; and would increase intersection average delay by more than 2 seconds during the PM peak hour.
- TRANS-9: The addition of project traffic would cause a significant impact at the Broadway/ MacArthur Boulevard intersection (#22) under Cumulative Year 2030 Baseline Plus Project conditions. The project would contribute to LOS F operations and would increase intersection average delay by more than 2 seconds during the AM peak hour.

B. CEQA PROJECT ALTERNATIVES

Using the project objectives and the significant impacts presented above, the City and BART selected a reasonable range of project alternatives to be analyzed within the EIR. The alternatives include the following:

- The **No Project/No Build Alternative** assumes the continuation of existing conditions within the project site.
- The **Existing Zoning Alternative** assumes development in accordance with the existing zoning (C-28 and R-70) and General Plan land use designation (Neighborhood Center Mixed-Use). The Existing Zoning Alternative would include demolition of all existing buildings and the BART parking lot and remediation of hazardous materials on-site. Development under this alternative would include 530 dwelling units, 44,000 square feet of commercial space (this may include a community space), and approximately 1,015 parking spaces (including 300 exclusive BART parking spaces). The development would include five new buildings (including a parking garage). Structures within the existing C-28 zone (properties adjacent to MacArthur Boulevard and Telegraph Avenue) would have a maximum height of 55 feet and structures within the R-70 zone (properties currently developed with the BART parking lot) would have a maximum height of 40 feet. This alternative would include new access/circulation improvements and BART plaza improvements.

- The **Mitigated Reduced Building/Site Alternative** assumes development would only occur on the BART parking lot. The Mitigated Reduced Building/Site Alternative would include demolition of the BART parking lot, but all other buildings and uses would remain. Development under this alternative would include five five- to six-story structures with approximately 200 dwelling units, 20,000 square feet of commercial space and 650 parking spaces (including 300 exclusive BART parking spaces).

Following is a discussion of each CEQA project alternative, and an analysis of the anticipated environmental impacts. The emphasis of the analysis is on the comparison of the anticipated impacts of each alternative to be the impacts associated with the proposed project. The discussion includes a determination as to whether the alternative would or would not reduce, eliminate, or create new significant impacts. Additionally, a discussion of two variants for each alternative is provided. The two variants include a Full BART Replacement Parking option and an approved Residential Permit Parking (RPP) option. Table V-1 (at the end of this section) shows both the project impacts and impacts associated with each project alternative.

1. No Project/No Build Alternative

The No Project/No Build Alternative assumes that the project site would remain in its current condition and would not be subject to development. Per CEQA Guidelines Section 15126, the No Project/No Build Alternative is considered to compare the impacts of approving the proposed project to not approving the project. Under the No Project/No Build Alternative, no development would occur on the 8.2-acre project site and existing conditions would continue into the future. The characteristics of this alternative are the baseline conditions, which are described in each of the topic sections included in Chapter IV of this EIR.

Under the No Project/No Build Alternative, no new construction would occur and the existing buildings, infrastructure, parking lots, and other physical conditions on the project site would remain in their current state. The existing commercial and residential buildings on Telegraph Avenue and the two motels on West MacArthur Boulevard would remain. Additionally, the surface parking lots for BART parking would remain. In the long term, the buildings within the site would continue to function with land uses that are the same as, or similar to, existing uses. Table V-2 compares the No Project/No Build Alternative to the proposed project.

Any remediation of hazardous materials would not occur under this alternative, and a residential parking permit program would not be established for the surrounding neighborhood. Shuttle, bus and all other vehicle circulation on the project site would remain in it current configuration. This alternative would not include any BART Plaza improvements.

Table V-2 No Project/No Build Alternative Scenario Compared to the Proposed Project

Use	No Project/ No Build Alternative	Proposed Project	Difference Between Project and Alternative
Dwelling Units	0	675	-675
Commercial (SqFt)	32,500	44,000	-11,500
Community Use (SqFt)	0	5,000	-5,000
Exclusive BART Parking	600	300	300

The existing Neighborhood Commercial Mixed-Use General Plan designation and the High Density Residential, Mediated Design Review (R-70/S-18) and Neighborhood Commercial, Mediated Design Review (C-28/S-18) zoning designations would remain as currently configured on the project site.

The potential impacts of the No Project/No Build Alternative are described below.

a. Land Use. As discussed above, the existing commercial, office, residential and parking lot uses would remain in the existing condition under the No Project/No Build Alternative. No new construction would occur and no new land uses would be introduced to the project site under this alternative. The existing motel uses on MacArthur Boulevard and commercial and office uses on Telegraph Avenue are similar to adjacent land uses in the vicinity. Additionally, the surface BART parking lot would remain to serve BART patrons. Without the introduction of new uses or structures, the No Project/No Build Alternative would not conflict with adjacent land uses; nor would this alternative result in impacts that would physically divide an established community. Like the proposed project, this alternative would not result in any significant land use impacts.

b. Public Policy. The existing commercial and office uses, motels and BART parking lot would continue to operate under the No Project/No Build Alternative. Although the existing uses are compatible with surrounding uses in the vicinity, the existing uses are not entirely consistent with the Neighborhood Center Mixed-Use General Plan designation or the C-28 and R-70 Zone designations. The Land Use and Transportation Element (LUTE) of the General Plan designates the project site for Mixed-Use TOD site with high-density housing and a variety of neighborhood serving commercial uses. The majority of the project site is occupied by surface parking area for BART patrons and no residential land uses exist in the project area. The existing development on the project site is partially consistent with the current zoning designations in that the commercial and office uses on MacArthur Boulevard and Telegraph Avenue are consistent with the C-28 (Neighborhood Commercial) district; however, the BART parking lot is zoned R-70, and the parking lot does not further the intent of this high density residential district. In summary, contrary to the proposed project, the No Project/No Build Alternative does not have the potential to further the land use and planning goals identified by City policy documents.

c. Transportation, Circulation and Parking. The No Project/No Build Alternative would not change the existing traffic conditions. Under this alternative, the existing circulation pattern and parking configurations would to continue to operate under their current conditions.

d. Air Quality. This alternative would not change the existing air quality. Under this alternative, there wouldn't be construction or an increase in vehicle trips that is associated with the proposed project.

e. Noise and Vibration. The No Project/No Build Alternative would not result in noise impacts associated with the construction of the proposed project. Additionally, under this alternative there would be no new residential units exposed to traffic noise sources. Noise currently generated on the project site, such as noise from agricultural equipment, would continue.

f. Hydrology and Water Quality. The No Project/No Build Alternative would not result in the construction of any new structures, and the project site would remain developed with commercial, office and motel buildings and the BART surface parking lot. The runoff associated with this alternative that would affect stormwater conveyance systems would be equal to or greater than the proposed project as current NPDES requirements require stormwater to be reduced from current/existing conditions. As dewatering would not occur on the project site, construction workers and the public would not potentially be exposed to contaminants that may be present in the soil and groundwater.

g. Geology, Soils, and Seismicity. Under the No Project/No Build Alternative, no new residential units or commercial uses would be developed. The project site would still be susceptible to seismic ground shaking and differential compaction, as identified for the proposed project.

h. Public Health and Hazards Implementation of the No Project/No Build Alternative would keep the site in its existing conditions. As such, it would not create significant hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials, or create a significant hazard to the public or the environment through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment. This alternative would not expose construction workers or the public to hazardous materials from contaminants in the soil during and following construction activities, or expose workers or the public to airborne toxics, (e.g., lead-based paint and asbestos) during demolition, but would forego the opportunities to improve conditions as provided by the project.

i. Public Services The No Project/No Build Alternative would not result in any residential development on the project site. As such, there would be no increase demand for school or recreational facilities.

j. Utilities. The No Project/No Build Alternative would not result in any development on the project site. There would be no increase in demand for water, wastewater, or other utility services.

k. Cultural and Paleontological Resources. Implementation of the No Project/No Build Alternative would not result in demolition or construction of any structures on site. As such, this alternative would not have any associated grading, excavation or demolition associated with construction. Because no ground-disturbing activities would occur as part of the No Project/No Build Alternative, subsurface archaeological, paleontological, and Native American resources that could occur within the project site would not be disturbed.

l. Aesthetic Resources. Under the No Project/No Build Alternative, the visual character of the project site under this alternative would be the same as the current conditions. Existing structures currently located on the project site would remain. As no development would result under the No Project/No Build Alternative, there would be no impacts related to light and glare.

m. Alternative Variants. Because this alternative assumes no development would occur on-site, this alternative does not include a discussion of the alternative variants.

2. Existing Zoning Alternative

The Existing Zoning Alternative assumes that the project site would not be rezoned to S-15 (TOD) and that the project would be developed in accordance with development standard and uses allowed in the current zoning designations of R-70/S-18 (High Density Residential, Mediated Design Review) and C-28/S-18 (Commercial Shopping District, Mediated Design Review). The existing zoning is split amongst the project parcels such that the BART parking areas (6.02 acres) are zoned R-70/S-18 and the remaining parcels (1.36 acres) are zoned C-8/S-18. The Existing Zoning Alternative assumes that residential only development would occur on the residentially zoned parcels, and that mostly commercial, with limited mixed-use development, would occur on the commercially zoned parcels. The development would include five new buildings (including a parking garage). Structures within the existing C-28 zone (properties adjacent to MacArthur Boulevard and Telegraph Avenue) would have a maximum height of 55 feet and structures within the R-70 zone (properties currently developed with the BART parking lot) would have a maximum height of 40 feet. The development would include approximately 530 dwelling units, approximately 44,000 square feet of commercial space[3] (this may include a community space), and approximately 1,015 parking spaces (including 300 exclusive BART parking spaces). This alternative does not include implementation of an RPP Program. Variants which include 600 BART parking spaces and implementation of an approved RPP Program are also considered at the end of this section. Table V-3 compares the Existing Zoning Alternative to the proposed project.

Table V-3 Existing Zoning Alternative Scenario Compared to the Proposed Project

Use	Existing Zoning Alternative	Proposed Project	Difference Between Project and Alternative
Dwelling Units	530	675	-145
Commercial (SqFt)	44,000	44,000	0
Community Use (SqFt)	5,000	5,000	0
Exclusive BART Parking	300	300	0

Source: MacArthur Transit Community Partners, October 2007.

Infrastructure improvements for the Existing Zoning Alternative would be similar to the proposed project. New commercial buildings on Telegraph Avenue would be accessed via a single driveway from Telegraph Avenue. The frontage road and an internal circulation road would be necessary to provide access to new residential units that would be developed on the existing surface BART parking lot.

All existing buildings would be demolished and the all trees would be removed under this alternative. Remediation of hazardous materials would occur under this alternative, and residential parking permit program would not be established for the surrounding neighborhood. Shuttle, bus and all other vehicle circulation on the project site would remain in it current configuration. This alternative would include the BART Plaza improvements.

The existing Neighborhood Commercial Mixed-Use General Plan designation and the High Density Residential, Mediated Design Review (R-70/S-18) and Neighborhood Commercial, Mediated Design Review (C-28/S-18) zoning designations would remain as currently configured on the project site; however, in accordance with the City's Guidelines for Determining Project Conformity with the General Plan and Zoning Regulations, the existing zoning is not consistent with the General Plan designation and therefore, a Minor Use Permit

[3] The Existing Zoning Alternative would allow for approximately 110,000 square feet of commercial space; however, development of 110,000 square feet of commercial area would result in additional transportation impacts than the proposed project, which includes 44,000 square feet of commercial space. For purposes of analyzing an alternative that would reduce impacts, the maximum area of commercial space has been reduced to 44,000 square feet for this alternative.

would be required for a development project in a zoning designation that is inconsistent with the General Plan land use designation.

Figures V-1A and V-1B show a conceptual plan and cross-section for the Existing Zoning Alternative. The potential impacts of the Existing Zoning Alternative are described below.

a. Land Use. Under the Existing Zoning Alternative, the project site would be developed under the existing zoning regulations, which would include residential uses on the parcels currently used as surface BART parking spaces, and commercial uses on the project parcels that front onto Telegraph Avenue and West MacArthur Boulevard. The 300-space BART parking garage would be constructed to replace the existing BART surface parking area. The Existing Zoning Alternative would introduce new land uses to the project site by developing residential uses; however, these new residential uses would be consistent with existing residential uses surrounding the project site. Additionally, this alternative would not create a physical division within the community. Though the Existing Zoning Alternative would (like the proposed project) not result in any land use impacts, the Existing Zoning Alternative assumes the development under existing zoning would involve more traditional, segregated residential and commercial development without the mixed-use buildings and less residential density than what is programmed into the proposed project.

b. Public Policy. This alternative assumes that traditional multi-family residential development would occur on the residentially zoned parcels, and that mostly commercial, with limited mixed-use development, would occur on the commercially zoned parcels. One of the main goals for TOD, as indicated in the General Plan, is to encourage high-density mixed-use projects. The land use and development standards of the existing zoning (C-28 and R-70) would not allow the flexibility of mixed-use development that is proposed for development of the proposed project. The proposed project's rezoning to S-15, the Transit-Oriented zone, would allow for and promote an entirely mixed-use project. Additionally, land uses permitted within the existing zoning categories are not tailored to TOD, whereas land uses within the proposed project (with a rezone to S-15 zone) would be tailored to TOD. Development under this alternative would be consistent with the General Plan and San Pablo/MacArthur/Broadway Redevelopment Plan goals for increased housing on the project site; however, the housing under this alternative would not be as dense as the proposed project. The inconsistencies with the General Plan that are evident in the Existing Zoning Alternative would not lead to environmental impacts; thus, like the proposed project, the Existing Zoning Alternative would not result in public policy conflicts.

c. Transportation, Circulation and Parking. The Existing Zoning Alternative would result in approximately 8 percent fewer AM peak hour trips and 10 percent fewer PM peak hour trips than the proposed project (see Table V-4 below). This alternative would generate fewer trips from the residential component and the same amount of trips for the commercial component. Given the minor reduction in trips under this alternative, the

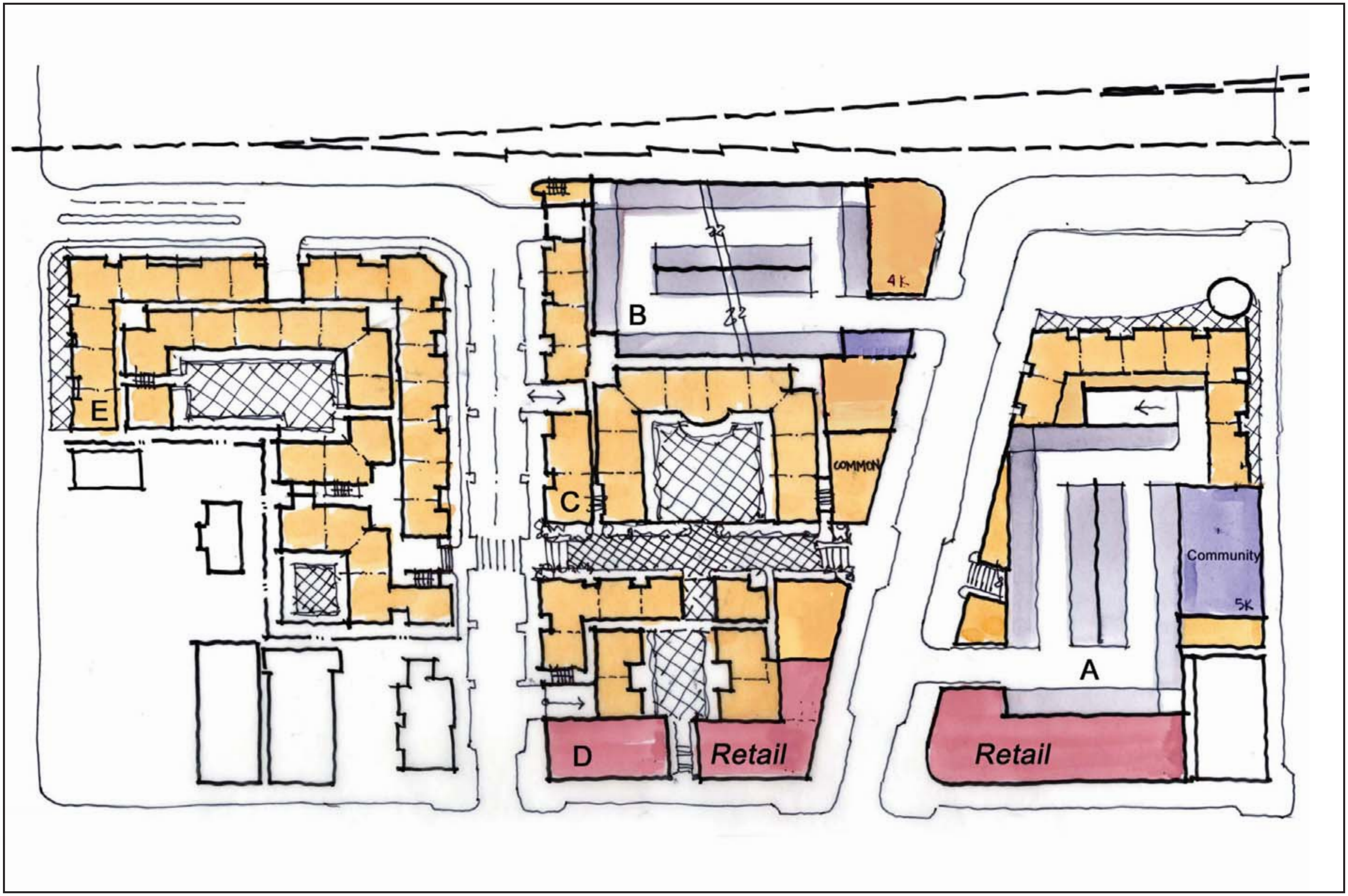

FIGURE V-1A

MacArthur Transit Village Project EIR
Existing Zoning Alternative

SOURCE: MacArthur Transit Community Partners, LLC. 2007

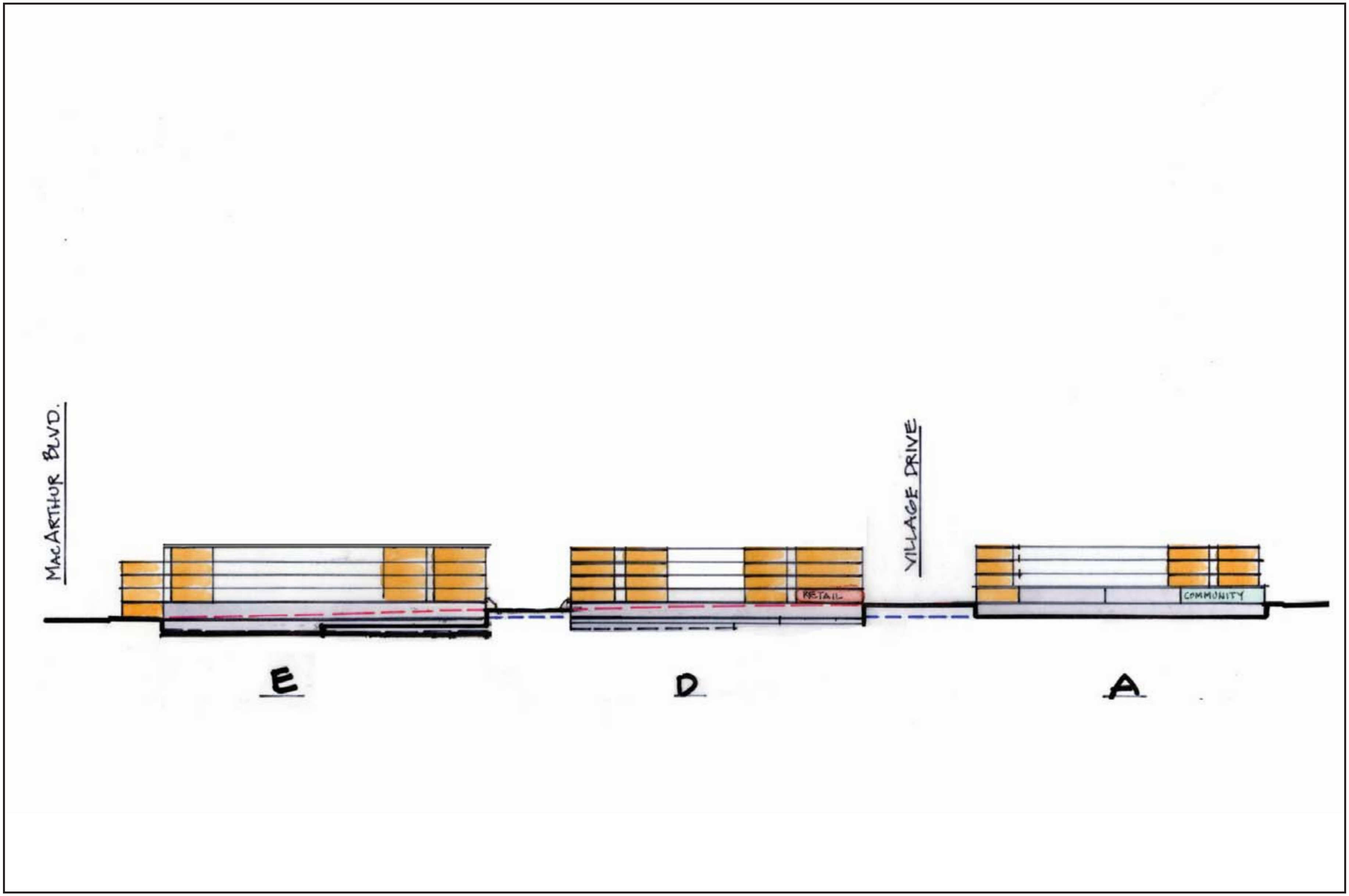

FIGURE V-1B

MacArthur Transit Village Project EIR
Existing Zoning Alternative

SOURCE: MacArthur Transit Community Partners, LLC. 2007
N:\2007\1407011 MacArthur BART Transit Village EIR\Graphics\MacArthur BART EIR Graphics Files\figures

d.

Table V-4 Existing Zoning Alternative Scenario Trip Generation

Land Use	ITE Code	Amount	Daily	AM Peak Hour			PM Peak Hour		
			Trips	In	Out	Total	In	Out	Total
Condominium[a]	230	530 DU	2,649	33	163	196	158	78	236
Residential Transit Reduction[b]		Daily 19% Peak Hr. 38%	-503	-13	-62	-74	-60	-30	-90
Total Residential Trips			***2,146***	***20***	***101***	***121***	***98***	***48***	***146***
Commercial[c]	814	44 ksf	1,950	67	52	119	52	67	119
Commercial Transit Reduction[d]		5%	-98	-3	-3	-6	-3	-3	-6
Total Commercial Trips			***1,852***	***64***	***49***	***113***	***49***	***64***	***113***
Community Space[e]	565	5 ksf	396	34	30	64	31	35	66
BART Parking Lot[f]		-300 spaces	0	0	0	0	0	0	0
TOTAL Trip Generation			***4,394***	***119***	***180***	***299***	***178***	***147***	***325***
Proposed Project			***4,886***	***123***	***201***	***324***	***200***	***158***	***358***
Difference			***-488***	***-4***	***-21***	***-25***	***-22***	***-11***	***-33***

Notes: du = dwelling unit; ksf = 1,000 square feet.

[a] Trip generation based on the regression equations for Residential Condominium/Townhouse (Land Use 230) in the Institute of Transportation Engineers' (ITE) *Trip Generation* (7th Edition, 2003), as presented below.

Daily Equation: Ln (T) = 0.85 Ln(X) + 2.55
AM Equation: Ln (T) = 0.80 Ln(X) + 0.26 (inbound = 17%, outbound = 83%)
PM Equation: Ln (T) = 0.82 Ln(X) + 0.32 (inbound = 67%, outbound = 33%)
Where: T = trip ends, Ln = natural logarithm, and X = number of dwelling units

[b] 38% peak hour residential transit reduction based on trip generation surveys at Bay Area TODs adjacent to BART stations; confirmed by data presented in *Recommended Trip Generation Adjustments for Transit-Oriented Developments in Oakland (Dowling Associates, April 2006),* as well as *Bay Area Transportation Surveys* (BATS) 2000 data for households within ½ mile of BART stations. Transit reduction for daily trip generation (19%) is lower to account for lower transit mode share for non-work trips.

[c] Daily and PM trip generation based on the rates for Specialty Commercial (Land Use 814) in the ITE *Trip Generation* (7th Edition), as presented below.

Daily Rate: (T) = 44.32 (X)
PM Rate: (T) = 2.71 (X) (inbound = 44%, outbound = 56%)
Where: T = trip ends and X = 1,000 square feet

AM trip generation based on PM trip rate, with reversed inbound/outbound splits. [d] Commercial transit reduction based on TOD literature on commercial trips, including *Travel Characteristics of Transit-Oriented Development in California* (Lund, Cervero, and Wilson, 2004*)*, and *Ridership Impacts of Transit-Focused Development in California (*Cervero, 1994).

[e] Trip generation based on the average rates for Day Care Center (Land Use 565) in the ITE) *Trip Generation* (7th Edition), as presented below.

Daily Rate: (T) = 79.26 (X)
AM Rate: (T) = 12.79 (X) (inbound = 53%, outbound = 47%)
PM Rate: (T) = 13.18 (X) (inbound = 47%, outbound = 53%)
Where: T = trip ends and X = 1,000 square feet

[f] The project includes removing approximately 300 of the existing 618 parking spaces in the BART lot. In the AM peak hour, any change in trips to the parking lot will most likely continue to occur before the peak hour. To be conservative, we assume that BART patrons currently entering and exiting the lot in the PM peak hour will continue to do so. Source: Fehr & Peers, 2007.

transportation impacts identified with the proposed project would likely occur in connection with this alternative but to a lesser magnitude.

The two impacts identified for the proposed project under the Cumulative Year 2015 Baseline Plus Project scenario (at Telegraph Avenue/51st Street and Market Street/MacArthur Boulevard, both in the PM peak hour) would likely continue to occur but to a lesser magnitude. Under the Cumulative Year 2030 Baseline Plus Project scenario, the impacts identified with the proposed project (at Telegraph Avenue/52nd Street/Claremont Avenue in the AM and PM peak hours; Telegraph Avenue/51st Street in the AM and PM peak hours; West Street/40th Street in the PM peak hour; Telegraph Avenue/40th Street in the AM and PM peak hours; Market Street/MacArthur Boulevard in the AM and PM peak hours; Telegraph Avenue/MacArthur Boulevard in the AM peak hour; and Broadway/MacArthur Boulevard in the AM peak hour) would likely occur, but with less magnitude. The two significant unavoidable impacts identified with the project (at Telegraph Avenue/51st Street and Broadway/ MacArthur Boulevard intersections) would be significant unavoidable under this alternative but to a lesser magnitude.

e. Air Quality. The Existing Zoning Alternative involves new construction of residential and commercial buildings and the parking garage. Construction measures, similar to the proposed project, would be used to develop this alternative. Additionally, vehicle trip generation from this alternative would be similar to the proposed project. Air Quality impacts would not differ substantially from the proposed project. The standard conditions applied to the proposed project would be applicable to the Existing Zoning Alternative. Implementation of these standard conditions would reduce Air Quality impacts to a less-than-significant level.

f. Noise and Vibration. Noise and vibration impacts related to the Existing Zoning Alternative would not differ substantially from the proposed project. Ground-borne vibration impacts would be identical to those associated with the proposed project. Short-term construction related impacts would be similar to those associated with the proposed project. The standard conditions identified for the proposed project would be applicable to the Existing Zoning Alternative. With implementation of these standard conditions, the Existing Zoning Alternative would not result in significant noise impacts associated with the construction of the proposed project.

g. Hydrology and Water Quality. The Existing Zoning Alternative involves development on all parcels at a relatively similar level of intensity and would result in a similar amount of runoff that could affect stormwater conveyance systems. Additionally, as is with the proposed project, construction workers and the public would be exposed to potential contaminants in the soil and groundwater related to dewatering on-site. All standard conditions for the proposed project would be applicable to the Existing Zoning Alternative. No new or increased significant impacts would result from implementation of the Existing Zoning Alternative.

h. Geology, Soils, and Seismicity. Under this alternative, grading activities and building foundations would be subject to similar geologic and seismic conditions and constraints as the proposed project. An earthquake on a nearby fault could result in strong seismic shaking at the project site. The surface and near surface site materials are classified as Urban Land, which is a man-made soil type consisting of various grades of un-engineered fill, possibly containing debris. The primary geologic concerns for the site are direct damage to structures from seismic shaking, seismically induced liquefaction and attendant ground failure, expansive soils, and settlement or differential settlement. Each of the standard conditions identified for the proposed project would be applicable to the Existing Zoning Alternative. No significant impacts would result from this alternative.

i. Public Health and Hazards. The Existing Zoning Alternative involves development on all parcels at a relatively similar level of intensity. As such, this alternative would be subject to the same standard conditions related to public health and hazards to reduce impacts on the environment through the routine transport, use, or disposal of hazardous materials, or creation of a significant hazard to the public or the environment through potential upset or accident conditions involving the release of hazardous materials into the environment. No significant impacts would result from implementation of this alternative.

j. Public Services. Impacts to public services for the Existing Zoning Alternative would be comparable to those for the proposed project because the development under this alternative would be similar to the number of units and commercial space as the proposed project. The alternative would create increased demand for fire and police protection, schools, library services and parks. The increased demand, like that generated by the proposed project, would be less than significant and no mitigation is required.

k. Utilities. Impacts to utilities for the Existing Zoning Alternative would be comparable to those for the proposed project because the development under this alternative would be similar to the number of units and commercial space as the proposed project. The alternative would create increased demand for water supply, wastewater collection and treatment, and post-construction solid waste facilities and infrastructure. The increased demand, similar to that generated by the proposed project, would be less than significant and no mitigation is required.

l. Cultural and Paleontological Resources. Under the Existing Zoning Alternative, multiple new buildings would be developed and the site would be subject to grading and other ground disturbing activities. The project area is sensitive for subsurface historical, archaeological, or paleontological resources, which have the potential to be unearthed during site preparation and construction of this alternative. Because this alternative would also be subject to standard conditions of approval designed by the City to reduce potential impacts related to cultural and paleontological impacts, this alternative (like the proposed project) would not result in significant land use impacts and no mitigation is required.

m. Aesthetic Resources. The Existing Zoning alternative would include five new buildings (including a parking garage), similar to the proposed project. Structures within the existing C-28 zone (properties adjacent to MacArthur Boulevard and Telegraph Avenue) would have a maximum height of 55 feet and structures within the R-70 zone (properties currently developed with the BART parking lot) would have a maximum height of 40 feet. These building heights would be approximately two stories less than the proposed project which is proposing a maximum height of 85 feet. Although the overall maximum height of this alternative would be lower than the proposed project, the aesthetic impacts that would result would be similar to the proposed project as development of this alternative would also represent a substantial increase in the amount of visible building mass and street frontage seen on the site.

Like the project, the development proposed under this alternative would provide additional sources of glare and light. Implementation of Standard Condition of Approval, AES-1: Lighting Plan would ensure that the use of reflective exterior materials is minimized and that proposed reflective material would not create additional daytime or nighttime glare.

n. Alternative Variants. Below is a discussion of the Existing Zoning Alternative with two alternative variants: Full BART Replacement Parking and with a Residential Parking Permit Program (RPP).

- **Full BART Replacement Parking**. The traffic analysis for the proposed project (see Transportation and Circulation Section IV.C) did not reduce project trip generation to account for reduced BART parking. Thus, traffic conditions under the Existing Zoning Alternative with Full BART Replacement Parking option would be similar to the Existing Zoning Alternative previously discussed. The inclusion of the Full BART Replacement Parking option would not result in any new or significantly different impacts than those identified for the Existing Zoning Alternative except for the area of aesthetics. The impacts related to aesthetics if this variant is implemented would the same as what is described for the Full BART Replacement Alternative described and analyzed below in Section C.1.
- **With a Residential Parking Permit Program (RPP).** As on-site BART parking is reduced, BART patrons who currently drive and park on-site may be attracted to park in the surrounding residential neighborhoods. This would reduce the on-street parking available for local residents. An RPP that would cover approximately a ¼-mile radius around the project site could be used as a tool to offset potential parking impacts in the surrounding neighborhood associated with the reduction in on-site BART parking. The RPP would restrict on-street parking by non-residents to fewer than two hours during the weekdays. Since BART commuters would park longer than two hours, on-street parking would no longer be available to them. Parking would still be available for Telegraph Avenue commercial district shoppers, since they typically park for less than two hours. Implementation of a RPP program would cause a significant reduction in off-site parking

supply for BART patrons. It has been estimated that as many as 216 BART patrons currently park on residential streets adjacent to the station. It is estimated that about 25 percent of BART patrons who currently drive and park in the surrounding neighborhood would shift to other travel modes to access the BART Station if on-street parking is no longer available to them (see Appendix F). The rest may no longer use the MacArthur BART Station. The reduction in off-site parking supply for BART patrons would result in fewer vehicles driving to and from the MacArthur BART Station and a reduction in number and magnitude of the identified project impacts at intersections. The potential secondary impacts of this alternative variant would be the same as those described for the project variant. See pages 215 and 216 of Section IV.C, Transportation, Circulation and Parking for a discussion of potential secondary impacts associated with implementation of an RPP program.

3. Mitigated Reduced Building/Site Alternative

The Mitigated Reduced Building/Site Alternative assumes that the project site area would be reduced to only include the parcels currently developed with the BART surface parking lots (6.02 acres). The two parcels along West MacArthur Avenue (currently developed with two motels) and the parcels on Telegraph Avenue (developed with commercial uses and a medical office) would not be part of the project under the Mitigated Reduced Building/Site Alternative. The Mitigated Reduced Building/Site Alternative would include development of four mixed-buildings (5 to 6 stories) with approximately 200 dwelling units and 20,000 square feet of commercial area and 650 parking spaces (including 300 exclusive BART parking spaces). This alternative would also include a fifth building to house the 300-space BART parking garage. This alternative does not include implementation of an RPP Program. Variants which include 600 BART parking spaces and implementation of an RPP Program are also considered at the end of this section. Table V-5 compares the Mitigated Reduced Building/Site Alternative to the proposed project.[4]

Infrastructure improvements for the Mitigated Reduced Building/Site Alternative would be less than the proposed project because the alternative includes less site area. Access to the development under this alternative would be provided by the existing driveways at West MacArthur Boulevard and 40th Street. The existing frontage road and a new internal street would be constructed to provide access to the units. New commercial buildings on Telegraph Avenue could be accessed via a single driveway from Telegraph Avenue. The

[4] In order to eliminate the two significant unavoidable impacts at the Telegraph Avenue/51st Street (#3) and Broadway/MacArthur Boulevard (#20) intersections, the project trip generation would need to be reduced by about 57 percent to 139 new trips during the AM peak hour. This corresponds to a project consisting of 627 dwelling units, and no commercial or community space, or a project consisting of 350 dwelling units, 20,000 square feet of commercial and no community space. The impacts of these scenarios would be similar to the Mitigated Reduced Building/Site Alternative analyzed in this section.

Table V-5 Mitigated Reduced Building/Site Alternative Scenario Compared to the Proposed Project

Use	Mitigated Reduced Building/Site Alternative	Proposed Project	Difference Between Project and Alternative
Dwelling Units	200	675	-475
Commercial (SqFt)	20,000	44,000	-24,000
Community Use (SqFt)	0	5,000	-5,000
Exclusive BART Parking	300	300	0

Source: MacArthur Transit Community Partners, October 2007.

frontage road and an internal circulation road would be necessary to provide access to new residential units that would be developed on the existing surface BART parking lot.

Only the parking lot would be demolished under this alternative, all existing buildings and a majority of existing trees would remain. Remediation of hazardous materials within the BART parking lot area would occur under this alternative. Shuttle, bus and all other vehicle circulation on the project site would remain in it current configuration. This alternative would also include the BART Plaza improvements.

The parcels within this alternative would be rezoned to S-15 (TOD) and the project would be developed in accordance with development standards and uses prescribed in the S-15 zone. The General Plan land use designation would remain Neighborhood Center Mixed Use, and the rezone to S-15 would be consistent with this General Plan land use designation.

Figures V-2A and V-2B show a conceptual plan and cross-section for the Mitigated Reduced Building/Site Alternative. The potential impacts of the Mitigated Reduced Building/Site Alternative are described below.

a. Land Use. Under the Mitigated Reduced Building/Site Alternative, only the BART parking lot parcels would be developed with new mixed-use buildings to accommodate approximately 200 dwelling units, 20,000 square feet of commercial area and a parking garage for BART patrons. The parcels that front onto Telegraph Avenue and West MacArthur Boulevard would remain in their current state of development and would not be part of the project. The Mitigated Reduced Building/Site Alternative would introduce new land uses to the project site by developing residential uses; however, these new residential uses would be consistent with existing residential uses surrounding the project site and would not create a physical division within the community. Though the Mitigated Reduced Building/Site Alternative would not result in any land use impacts (like the proposed project), the Mitigated Reduced Building/Site Alternative would involve a much less dense

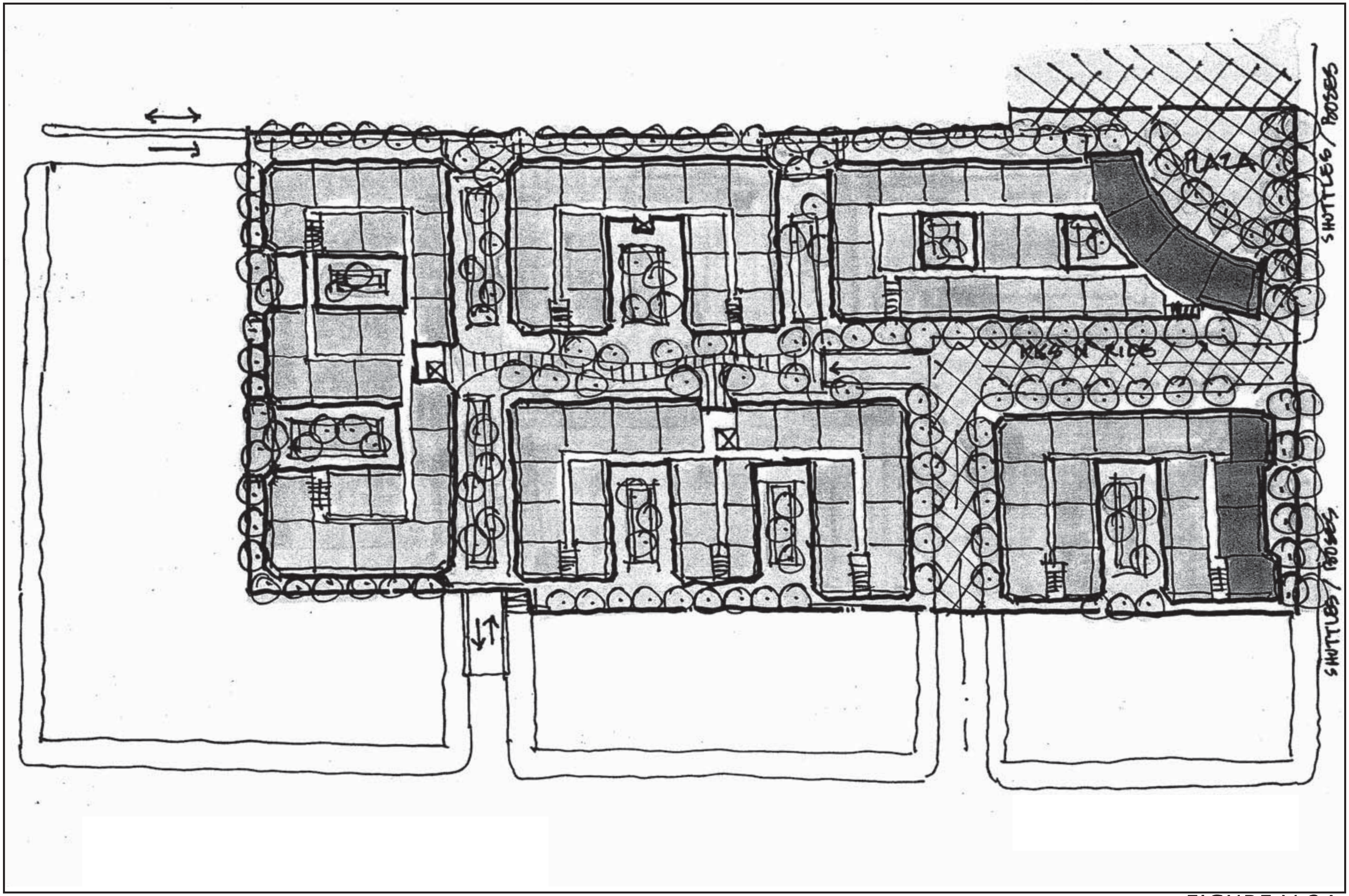

FIGURE V-2A

MacArthur Transit Village Project EIR
MItigated Reduced Building / Site Alternative

SOURCE: MacArthur Transit Community Partners, LLC. 2007

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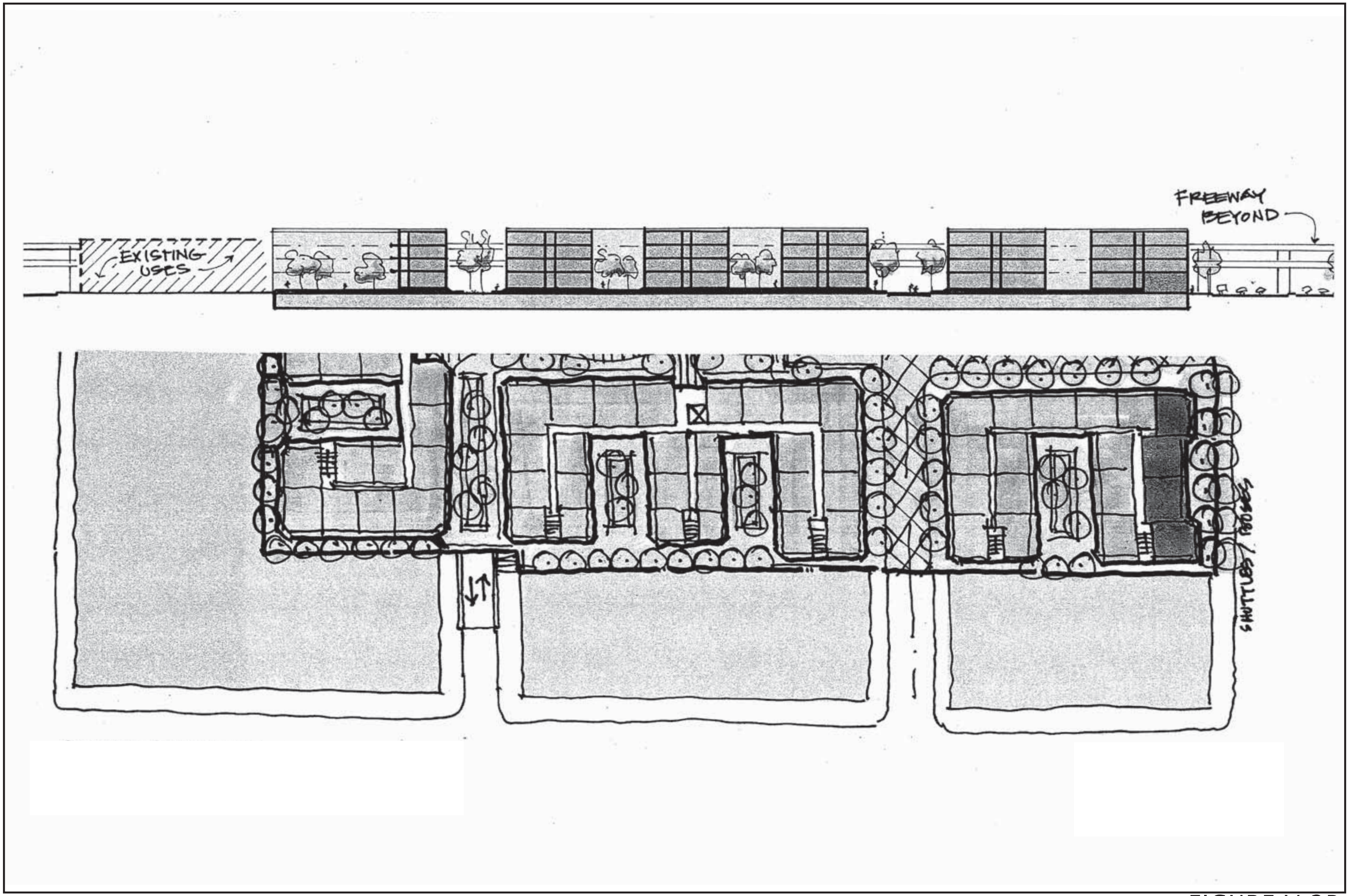


FIGURE V-2B

MacArthur Transit Village Project EIR
Mitigated Reduced Building / Site Alternative

SOURCE: MacArthur Transit Community Partners, LLC. 2007

development and would not introduce new uses on Telegraph Avenue due to the deletion of these parcels from the project.

b. Public Policy. The Mitigated Reduced Building/Site Alternative would be generally consistent with the General Plan goals for a TOD at the MacArthur BART Station because this alternative assumes new mixed-use development would occur immediately adjacent to the station. As a function of the reduced site area, the residential density of development would be significantly decreased (from 675 units to 200 units). Additionally, the proposed project's rezoning to S-15, the Transit-Oriented zone, would allow for, and promote, an entirely mixed-use project. Development under this alternative would be consistent with the General Plan and San Pablo/MacArthur/Broadway Redevelopment Plan goals for increased housing on the project site; this alternative would involve many fewer units and less commercial space than the proposed project. Like the proposed project Mitigated Reduced Building/Site Alternative would not result in public policy conflicts.

c. Transportation, Circulation and Parking. The Mitigated Reduced Building/Site Alternative would result in approximately one-third as many AM and PM peak hour trips as the proposed project (see Table V-6 below). The magnitude of transportation impacts with this alternative would be less than with the proposed project. As with the proposed project, there would be no impacts under the Existing Plus Mitigated Reduced Building/Site Alternative scenario, and it is unlikely that there would be any impacts under the Cumulative Year 2015 Baseline Plus Mitigated Reduced Building/Site Alternative scenario. The impact identified for the proposed project under the Cumulative Year 2015 Baseline Plus Project scenario at Telegraph Avenue/51st Street and Market Street/MacArthur Boulevard intersection would likely not occur.

Under Cumulative Year 2030 Baseline conditions, the significant unavoidable impacts identified with the proposed project at Telegraph Avenue/51st Street and Broadway/ MacArthur Boulevard would no longer be significant unavoidable. Other impacts identified with the proposed project (at Telegraph Avenue/52nd Street/Claremont Avenue in the AM and PM peak hours; West Street/40th Street in the PM peak hour; Telegraph Avenue/40th Street in the AM and PM peak hours; Market Street/MacArthur Boulevard in the AM and PM peak hours; and Telegraph Avenue/MacArthur Boulevard in the AM peak hour) would be less severe.

d. Air Quality. The Mitigated Reduced Building/Site Alternative would involve new construction of residential and commercial buildings and the parking garage. Construction measures, similar to the proposed project, would be used to develop this alternative. However, vehicle trip generation from this alternative would be less than the proposed project due to the reduction in units and commercial area. As a result, air quality impacts would be slightly less than the proposed project. Though the air quality impacts would be less than the proposed project, the standard conditions applied to the proposed project

Table V-6 Mitigated Reduced Building/Site Alternative Trip Generation

Land Use	ITE Code	Amount	Daily	AM Peak Hour			PM Peak Hour		
			Trips	In	Out	Total	In	Out	Total
Condominium[a]	230	200 DU	1,157	15	75	90	71	35	106
Residential Transit Reduction[b]		Daily19% Peak Hr. 38%	-220	-6	-28	-34	-27	-13	-40
Total Residential Trips			***937***	***9***	***47***	***56***	***44***	***22***	***66***
Commercial[c]	814	20 ksf	886	30	24	54	24	30	54
Commercial Transit Reduction[d]		5%	-44	-2	-1	-3	-1	-2	-3
Total Commercial Trips			***842***	***29***	***23***	***51***	***23***	***29***	***51***
BART Parking lot[f]		-300 spaces	0	0	0	0	0	0	0
TOTAL Trip Generation			***1,779***	***38***	***69***	***107***	***67***	***51***	***118***
Proposed Project			***4,886***	***123***	***201***	***324***	***200***	***158***	***358***
Difference			***-3,107***	***-85***	***-132***	***-217***	***-133***	***-207***	***-240***

Notes: du = dwelling unit; ksf = 1,000 square feet.

[a] Trip generation based on the regression equations for Residential Condominium/Townhouse (Land Use 230) in the Institute of Transportation Engineers' (ITE) *Trip Generation* (7th Edition, 2003), as presented below.

Daily Equation: Ln (T) = 0.85 Ln(X) + 2.55
AM Equation: Ln (T) = 0.80 Ln(X) + 0.26 (inbound = 17%, outbound = 83%)
PM Equation: Ln (T) = 0.82 Ln(X) + 0.32 (inbound = 67%, outbound = 33%)
Where: T = trip ends, Ln = natural logarithm, and X = number of dwelling units

[b] 38% peak hour residential transit reduction based on trip generation surveys at Bay Area TODs adjacent to BART stations; confirmed by data presented in *Recommended Trip Generation Adjustments for Transit-Oriented Developments in Oakland (Dowling Associates, April 2006),* as well as *Bay Area Transportation Surveys* (BATS) 2000 data for households within ½ mile of BART stations. Transit reduction for daily trip generation (19%) is lower to account for lower transit mode share for non-work trips.

[c] Daily and PM trip generation based on the rates for Specialty Commercial (Land Use 814) in the ITE *Trip Generation* (7th Edition), as presented below.

Daily Rate: (T) = 44.32 (X)
PM Rate: (T) = 2.71 (X) (inbound = 44%, outbound = 56%)
Where: T = trip ends and X = 1,000 square feet
M trip generation based on PM trip rate, with reversed inbound/outbound splits.

[d] Commercial transit reduction based on TOD literature on commercial trips, including *Travel Characteristics of Transit-Oriented Development in California* (Lund, Cervero, and Wilson, 2004*),* and *Ridership Impacts of Transit-Focused Development in California (*Cervero, 1994).

[e] Trip generation based on the average rates for Day Care Center (Land Use 565) in the ITE) *Trip Generation* (7th Edition), as presented below.

Daily Rate: (T) = 79.26 (X)
AM Rate: (T) = 12.79 (X) (inbound = 53%, outbound = 47%)
PM Rate: (T) = 13.18 (X) (inbound = 47%, outbound = 53%)
Where: T = trip ends and X = 1,000 square feet

[f] The project includes removing approximately 300 of the existing 618 parking spaces in the BART lot. In the AM peak hour, any change in trips to the parking lot will most likely continue to occur before the peak hour. To be conservative, we assume that BART patrons currently entering and exiting the lot in the PM peak hour will continue to do so.

Source: Fehr & Peers, 2007.

would be applicable to the Mitigated Reduced Building/Site Alternative. Implementation of these standard conditions would reduce air quality impacts to a less-than-significant level.

e. Noise and Vibration. Noise and vibration impacts related to the Mitigated Reduced Building/Site Alternative would differ somewhat from the proposed project. Roadway noise may be slightly reduced because the development would be shielded from noise on Telegraph Avenue by the existing buildings that would remain on Telegraph Avenue and West MacArthur; however, noise from SR-24 would still affect dwelling units under this alternative. Short-term construction related impacts would be similar to those associated with the proposed project, but incrementally less since less construction would occur. The standard conditions identified for the proposed project would be applicable to the Mitigated Reduced Building/Site Alternative. Like the proposed project, with implementation of these standard conditions, the Mitigated Reduced Building/Site Alternative would not result in significant noise impacts.

f. Hydrology and Water Quality. The Mitigated Reduced Building/Site Alternative involves development on a reduced portion of the proposed project site, and would thus result in a reduced amount of runoff that could affect stormwater conveyance systems. As with the proposed project, construction workers and the public would be exposed to potential contaminants in the soil and groundwater related to dewatering on-site, but this potential impact would be reduced by the reduction in site area and development. All standard conditions for the proposed project would also be applicable to the Mitigated Reduced Building/Site Alternative. The impacts on hydrology and water quality would be slightly less than the proposed project because the site area is reduced.

g. Geology, Soils, and Seismicity. Under this alternative, grading activities and building foundations would be subject to similar geologic and seismic conditions and constraints as the proposed project. An earthquake on a nearby fault could result in strong seismic shaking at the project site. The surface and near surface site materials are classified as Urban Land, which is a man-made soil type consisting of various grades of un-engineered fill, possibly containing debris. The primary geologic concerns for the site are direct damage to structures from seismic shaking, seismically induced liquefaction and attendant ground failure, expansive soils, and settlement or differential settlement. Each of the standard conditions identified for the proposed project would be applicable to the Mitigated Reduced Building/Site Alternative. No significant impacts would result from this alternative.

h. Public Health and Hazards. The Mitigated Reduced Building/Site Alternative involves development on all parcels at a reduced intensity compared with the proposed project. As such, this alternative would be subject to the same standard conditions related to public health and hazards to reduce impacts on the environment through the routine transport, use, or disposal of hazardous materials, or creation of a significant hazard to the public or the environment through reasonable foreseeable upset or accident conditions involving the release of hazardous materials into the environment. No significant impacts would result from implementation of this alternative.

i. Public Services. The amount of development under the Mitigated Reduced Building/Site Alternative is well below that of the proposed project; therefore, impacts to public services for the Mitigated Reduced Building/Site Alternative would be less than those for the proposed project. The Mitigated Reduced Building/Site Alternative would have less of an increased demand for fire and police protection, schools, library services and parks. The increased demand from the Mitigated Reduced Building/Site Alternative, like that generated by the proposed project, would be less than significant and no mitigation is required.

j. Utilities. The amount of development under the Mitigated Reduced Building/Site Alternative is well below that of the proposed project; therefore, impacts to utilities for the Mitigated Reduced Building/Site Alternative would be less than those for the proposed project. The Mitigated Reduced Building/Site Alternative would have less of an increased demand for demand for water supply, wastewater collection and treatment, and post-construction solid waste facilities and infrastructure. The increased demand from the Mitigated Reduced Building/Site Alternative, like that generated by the proposed project, would be less than significant and no mitigation is required.

k. Cultural and Paleontological Resources. Under the Mitigated Reduced Building/Site Alternative, multiple new buildings would be developed and the reduced project site would be subject to grading and other ground disturbing activities. The reduced project area is sensitive for subsurface historical, archaeological, or paleontological resources, which have the potential to be unearthed during site preparation and construction of this alternative. Because this alternative would also be subject to standard conditions of approval designed by the City to reduce potential impacts related to cultural and paleontological impacts, this alternative (like the proposed project) would not result in significant land use impacts and no mitigation is required.

l. Aesthetic Resources. The Mitigated Reduced Building/Site alternative would include five five- to six-story structures with approximately 200 dwelling units, 20,000 square feet of commercial space and 650 parking spaces (including 300 exclusive BART parking spaces). The overall footprint of each of the buildings would be smaller than the proposed project as the site area is reduced and only includes the existing BART parking lot. Although this alternative would include less development than the proposed the project the density and mass of it would be similar to the proposed project for the portion of the site that would be developed. As a result, the impact on aesthetic resources would be similar to the proposed project and not considered significant. Along the edges that are immediately adjacent to existing development, the transition of this alternative would be more apparent than the proposed project as the increase in height would be more abrupt Development of this alternative would represent a substantial increase in the amount of visible building mass and street frontage seen on the site. However, the urban design fabric surrounding the site supports this scale of development including street widths, some of the taller historic and new developments located along the Telegraph Avenue corridor between Downtown and 51st Avenue.

Like the project, the development proposed under this alternative would provide additional sources of glare and light. Implementation of Standard Condition of Approval, AES-1: Lighting Plan would ensure that the use of reflective exterior materials is minimized and that proposed reflective material would not create additional daytime or nighttime glare.

m. Alternative Variants. Below is a discussion of the Mitigated Reduced Building/Site Alternative with two alternative variants: Full BART Replacement Parking and With a Residential Parking Permit Program (RPP).

- **Full BART Replacement Parking**. The traffic analysis for the proposed project (see Transportation and Circulation Section IV.C) did not reduce project trip generation to account for reduced BART parking. Thus, traffic conditions under the Mitigated Reduced Building/Site Alternative with the Full BART Replacement Parking variant would be similar to the Mitigated Reduced Building/Site Alternative previously discussed.
- **With a Residential Parking Permit Program (RPP).** As on-site BART parking is reduced, BART patrons who currently drive and park on-site may be attracted to park in the surrounding residential neighborhoods. This would reduce the on-street parking available for local residents. An RPP that would cover approximately a ¼-mile radius around the project site could be used as a tool to offset potential parking impacts in the surrounding neighborhood associated with the reduction in on-site BART parking. The RPP would restrict on-street parking by non-residents to fewer than two hours during the weekdays. Since BART commuters would park longer than two hours, on-street parking would no longer be available to them. Parking would still be available for Telegraph Avenue commercial district shoppers, since they typically park for less than two hours. Implementation of a RPP program would cause a significant reduction in off-site parking supply for BART patrons. It has been estimated that as many as 216 BART patrons currently park on residential streets adjacent to the station. It is estimated that about 25 percent of BART patrons who currently drive and park in the surrounding neighborhood would shift to other travel modes to access the BART Station if on-street parking is no longer available to them (see Appendix F). The rest may no longer use the MacArthur BART Station. The reduction in off-site parking supply for BART patrons would result in fewer vehicles driving to and from the MacArthur BART Station and a reduction in number and magnitude of the identified project impacts at intersections. The potential secondary impacts of this alternative variant would be the same as those described for the project variant. See pages 215 and 216 of Section IV.C, Transportation, Circulation and Parking for a discussion of potential secondary impacts associated with implementation of an RPP program.

C. PLANNING PROJECT ALTERNATIVES

The project applicant has considered multiple project variants throughout the design development process. The following planning alternatives are included in this EIR primarily to consider variants to the project that may be desirable to the project developer, the City, BART, and/or members of the community. Since some of the elements of these alternatives are more intense than the proposed project, the analysis of potential impacts associated with the planning alternatives does not satisfy the CEQA requirements as these alternatives are not designed to lessen project impacts identified in Chapter IV. The planning alternatives may result in similar or more severe environmental impacts, but address an objective beyond the scope of CEQA (i.e., community interest, economics). The planning alternatives include the following:

- **Full BART Replacement Parking Alternative**, which assumes the proposed project is developed with a 600-space parking garage for BART patrons (as opposed to a 300-space parking garage for BART patrons). Parking spaces under the Full BART Replacement Parking Alternative would be approximately 1,300 with 600 exclusive BART parking spaces. All other project components remain the same (up to 675 residential units, 44,000 square feet of commercial area and 5,000 square feet of community space). Site improvements and circulation pattern are the same the proposed project.
- The **Tower Alternative**, which assumes a 23-story tower building would be constructed at Building D. Under the proposed project, Building D is a five- to six-story residential building. In the Tower Alternative, residential units would increase to 868 units with 725 market-rate and 145 affordable units (as opposed to 675 residential units with 562 market-rate and 113 affordable units) and parking would increase to approximately 1,100 parking spaces, including 300 exclusive BART parking spaces. All other project components remain relatively similar with 34,000 square feet of commercial area and 7,500 square feet of community space). Site improvements and circulation pattern are the same the proposed project.
- The **Increased Commercial Alternative**, which assumes 172,000 square feet of commercial office development would be developed in Building A. Under the proposed project, Building A is a five- to six-story mixed-use building with 230 market-rate units above 26,000 square feet of ground floor commercial and live/work flex space. Under the Commercial Alternative, 172,000 square feet of commercial office space is introduced onto the site with 475 residential units (395 market-rate and 80 affordable units), 27,000 square feet of commercial area and 5,000 of community space. Site improvements and circulation pattern are the same the proposed project.

Following is a discussion of each planning alternative, and an analysis of the anticipated environmental impacts of each of these alternatives. The emphasis of the analysis is on the comparison of the anticipated impacts of each alternative to be the impacts associated with the proposed project; the discussion includes a determination as to whether the alternative would or would not reduce, eliminate, or create new significant impacts. Additionally, a discussion of two alternative variants is provided. The two alternative variants include a Full BART Replacement Parking option and a With Residential Permit Parking (RPP) option. Table V-28 shows both the project impacts and impacts associated with each planning alternative.

1. Full BART Replacement Parking Alternative

The Full BART Replacement Parking Alternative, which assumes the proposed project includes a 600-space parking garage for BART patrons (as opposed to a 300-space parking garage for BART patrons). Parking spaces under the Full BART Replacement Parking Alternative would be approximately 1,300 spaces with 600 exclusive BART parking spaces. To accommodate 600 BART parking spaces, Building E would be constructed as a 12- to 13-story parking garage. The proposed project includes Building E as a seven-story parking garage. All other project components would remain the same (up to 675 residential units, 44,000 square feet of commercial area and 5,000 square feet of community space). Site improvements and circulation pattern would be the same the proposed project. Table V-7 compares the Full BART Replacement Alternative to the proposed project.

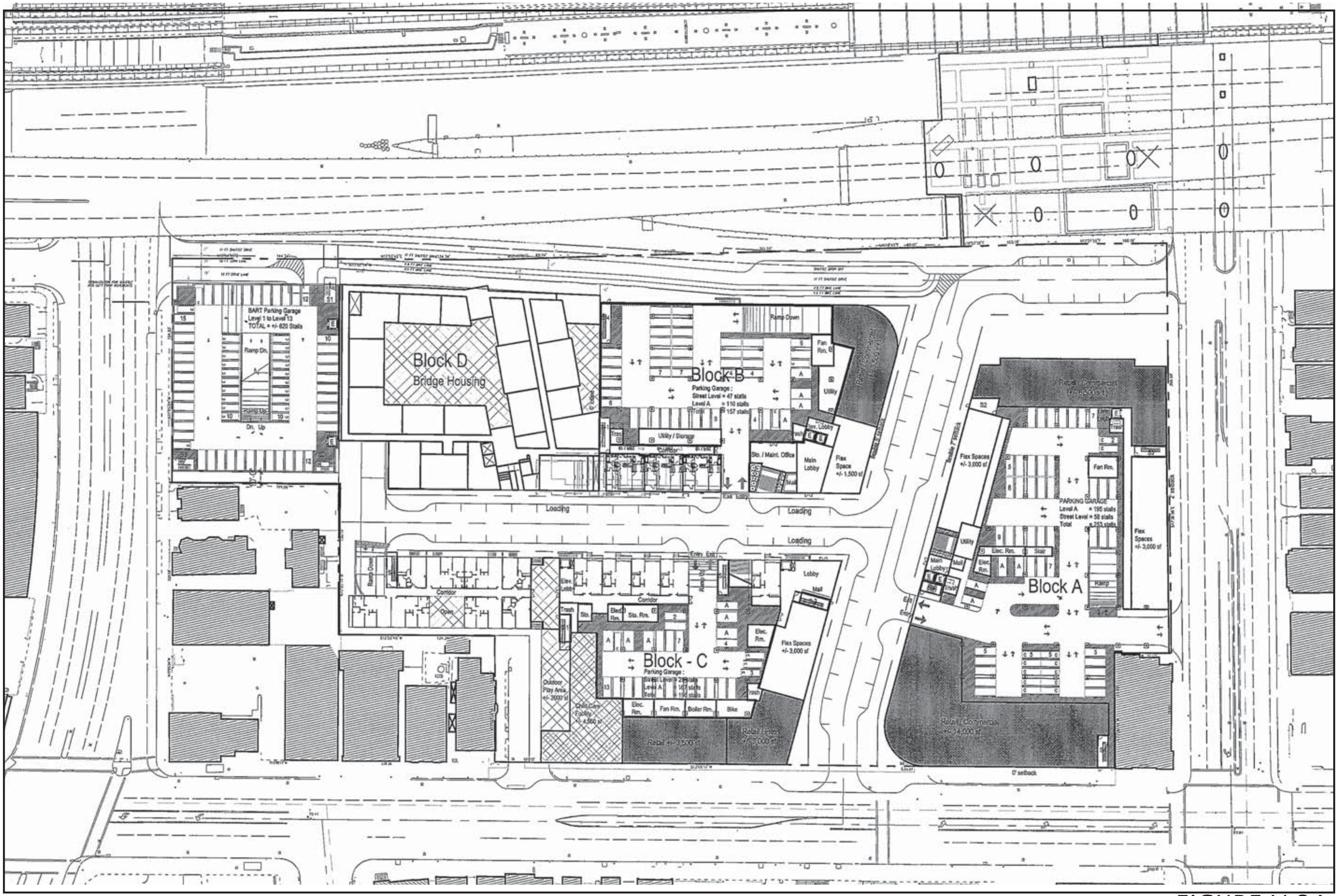
Infrastructure improvements for the proposed project with Full BART Replacement Alternative would be the same as the proposed project, with the exception of additional parking within the BART garage. Building layout, site circulation and improvements to the frontage road remain the same as the proposed project.

All existing buildings would be demolished and all trees would be removed under this alternative. Remediation of hazardous materials would occur under this alternative, and this alternative would include the BART Plaza improvements.

Like the proposed project, the project site would be rezoned to S-15, TOD. The S-15 zone is compatible with the current Neighborhood Commercial Mixed-Use General Plan designation. The discretionary actions included in Chapter 3 would apply to the proposed project with Full BART Replacement Parking Alternative.

Figures V-3A and V-3B show a conceptual site plan and cross-sections for the Full BART Replacement Alternative. The potential impacts of the Full BART Replacement Alternative are described below.

a. Land Use. The land uses within the proposed project with Full BART Replacement Parking Alternative are the same as the proposed project because the only difference between this alternative and the proposed project is the number of spaces provided exclusively for BART patrons. No land use impacts result from the proposed project, hence no land use impacts would result from the alternative.



NTS

FIGURE V-3A

MacArthur Transit Village Project EIR

Conceptual Plan, Full BART Replacement Parking Alternative

SOURCE: MacArthur Transit Community Partners, LLC. 2007

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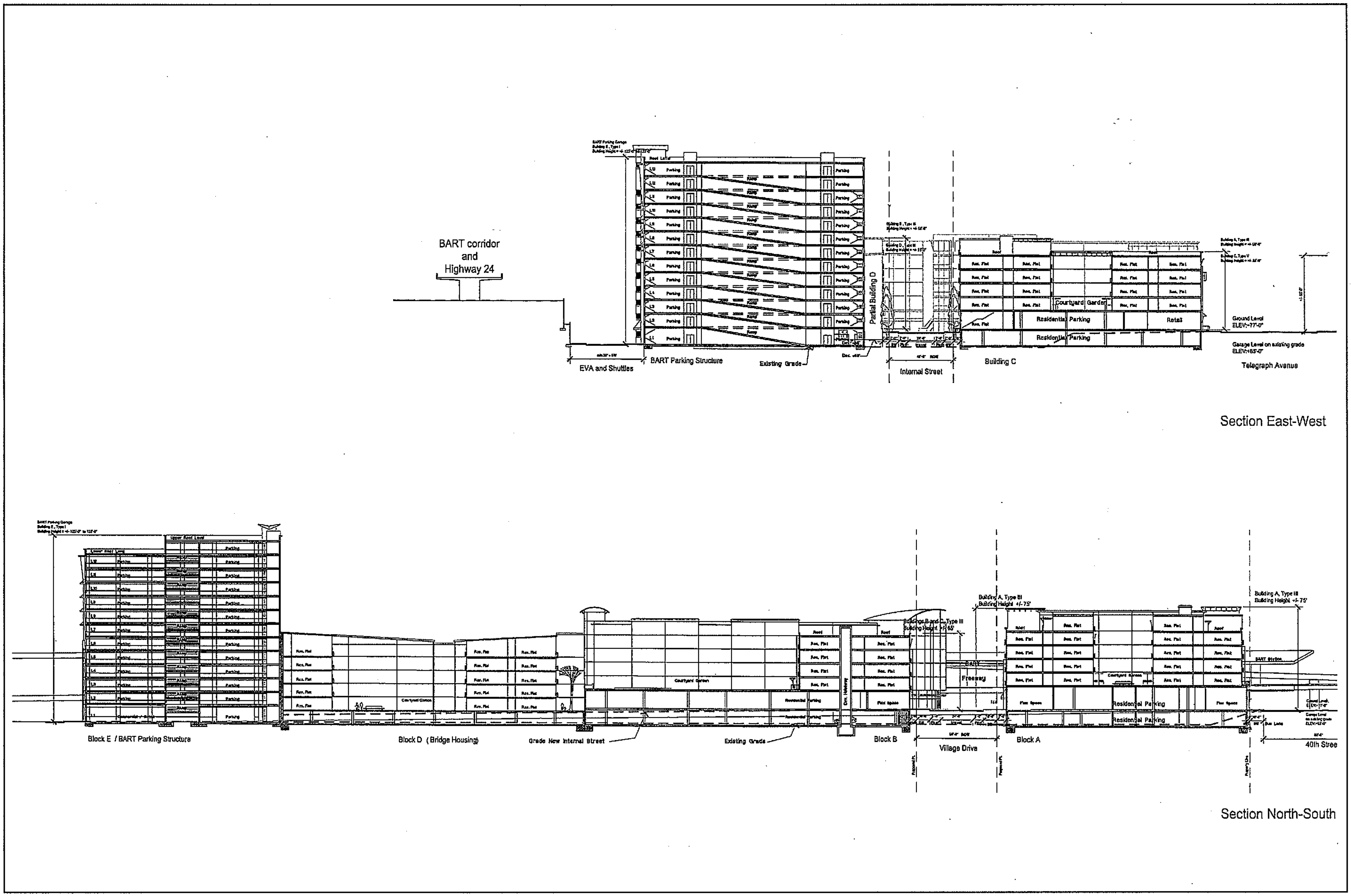


FIGURE V-3B

MacArthur Transit Village Project EIR

Conceptual Cross-Section, Full BART Replacement Parking Alternative

SOURCE: MacArthur Transit Community Partners, LLC. 2007

Table V-7 Full BART Replacement Parking Alternative Scenario Compared to the Proposed Project

Use	Full BART Replacement Parking Alternative	Proposed Project	Difference Between Project and Alternative
Dwelling Units	675	675	0
Commercial (SqFt)	44,000	44,000	0
Community Use (SqFt)	5,000	5,000	0
Exclusive BART Parking	600	300	+300

Source MacArthur Transit Community Partners, October 2007.

b. Public Policy. The Full BART Replacement Parking Alternative would be consistent with City General Plan and other public policies, as well as BART policies for TODs. The only difference between the proposed project and this alternative is the increase in parking. The increase in parking would not compromise the project's ability to further the achievement of BART and City TOD policies. The project improvements for shuttle access and various transit providers (including rebuilding the frontage road, designating kiss-and-ride spots, BART Plaza improvements and transit village plaza improvements) would still be part of this alternative. Additionally, this alternative would include bike access and sidewalks that are part of the proposed project.

c. Transportation, Circulation and Parking. The traffic analysis presented in Chapter IV.C, Transportation, did not reduce project trip generation to account for reduced BART parking. Thus, traffic conditions under this alternative would be similar to the analyzed project. Since all current BART patrons who park in the BART parking facility would continue to be able to park at BART, there would be fewer BART patrons who would park in the surrounding neighborhoods. Also, BART boardings at the MacArthur Station would also increase.

d. Air Quality. Air quality impacts associated with implementation of the Full BART Replacement Parking Alternative would be similar to those associated with the proposed project. The Full BART Replacement Parking Alternative would have approximately the same amount of construction activity. Implementation of the City's standard conditions of approval as part of the project would reduce construction activity impacts to a less-than-significant level. The intersection CO concentration analysis performed for the proposed project did not use reduced project trip generation to account for reduced BART parking. Thus, like the proposed project, the Full BART Replacement Parking Alternative would not result in CO hot-spots. Similar to the proposed project, the Full BART Replacement Parking Alternative would similarly not substantially increase pollutant or odor concentrations, and would not conflict with the Bay Area 2005 Ozone Strategy or the BAAQMD standards. The daily increase in emissions associated with the Full BART Replacement Parking Alternative operational and area sources for reactive organic gases (ROG) and nitrogen oxides (NOx) (two precursors of ozone) and coarse particle matter (PM10) would be the same as those for the proposed project. Therefore, the Full BART Replacement Parking Alternative would not have a significant effect on regional air quality.

e. Noise and Vibration. Noise and vibration impacts related to the Full BART Replacement Parking Alternative would be similar to those associated with the proposed project. Noise sensitive receptors would be located at the same approximate distance from SR-24 as the proposed project. Roadway traffic noise analysis for the proposed project did not reduce project trip generation to account for reduced BART parking. Thus, traffic noise levels on roadway segments in the project vicinity with the Full BART Replacement Parking Alternative would be the same as those predicted for the project. Traffic volumes and noise levels for traffic on SR-24 and I-580 are expected to remain the same as those of the proposed project. Similarly, BART noise and ground-borne vibration impacts would be the same as those associated with the proposed project. Short-term construction related impacts would also be similar to those associated with the proposed project. Implementation of the City's standard conditions of approval as part of the project would reduce noise and vibration impacts to less-than-significant levels.

f. Hydrology and Water Quality. The Full BART Replacement Parking Alternative involves the same development program as the proposed project with the exception of replacing the seven-story parking garage with a 12- to 13-story parking garage. Like the proposed project, this alternative would result in runoff the same as the proposed project. As with the proposed project, construction workers and the public would be exposed to potential contaminants in the soil and groundwater related to dewatering on-site.

All hydrology and water quality related standard conditions for the proposed project would be applicable to the Full BART Replacement Parking Alternative. As with the proposed project, the incorporation of the standard conditions, which are mandatory City requirements, would reduce Hydrology and Water Quality impacts to less-than-significant. No increase in significance to the hydrology and water impacts identified for the proposed project, and no significant hydrology and water impacts would result from this alternative.

g. Geology, Soils, and Seismicity. Under this alternative, grading activities and building foundations would be subject to similar geologic and seismic conditions and constraints as the proposed project. An earthquake on a nearby fault could result in strong seismic shaking at the project site. The surface and near surface site materials are classified as Urban Land, which is a man-made soil type consisting of various grades of un-engineered fill, possibly containing debris. The primary geologic concerns for the site are direct damage to structures from seismic shaking, seismically induced liquefaction and attendant ground failure, expansive soils, and settlement or differential settlement.

All geology, soils and seismicity related standard conditions for the proposed project would be applicable to the Full BART Replacement Parking Alternative. These standard conditions include Erosion and Sediment Control Plan, Soils Report, and Geotechnical Report. As is the case with the proposed project, the incorporation of the standard conditions, which are mandatory City requirements, would reduce Geology, Soils and Seismicity impacts to a less-than-significant level. No increase in significance to the geology, soils and seismicity impacts identified for the proposed project, and no significant geology, soils and seismicity impacts would result from this alternative.

h. Public Health and Hazards. The Full BART Replacement Parking Alternative involves the same development program as the proposed project with the exception of replacing Building E, the seven-story parking garage, with a 12- to 13-story parking garage. As such, this alternative would have impacts similar to the proposed project with respect to public health and hazards via disposal of hazardous materials, or creation of a significant hazard to the public or the environment through reasonable foreseeable upset or accident conditions involving the release of hazardous materials into the environment.

Given the level of development that would occur under the Full BART Replacement Parking Alternative, all public health and hazards related standard conditions that apply to the proposed project would also apply to this alternative. These standard conditions include: Asbestos Removal, Lead-Based Paint/Coatings, Asbestos or PCB Occurrence Assessment, Hazards Best Management Practices, Phase I and/or Phase II reports Environmental Site Assessments Reports Remediation, Lead-based Paint Remediation, Asbestos Remediation, Other Materials Classified as Hazardous Waste, Health and Safety Plan per Assessment, Fire Safety and Fire Safety Phasing Plan. As with the proposed project, the incorporation of the standard conditions, which are mandatory City requirements, would reduce Public Health and Hazard impacts to less-than-significant. No increase in significance to the public health and hazards impacts identified for the proposed project, and no significant public health and hazards impacts would result from this alternative.

i. Public Services. The Full BART Replacement Parking Alternative involves the same development program as the proposed project with the exception of replacing Building E, the seven-story parking garage, with a 12- to 13-story parking garage. As such, this alternative would have impacts similar to the proposed project with respect to public services via increased demand for fire, police, school, parks and library services.

Given the level of development that would occur under the Full BART Replacement Parking Alternative, all public service related standard conditions that apply to the proposed project would also apply to this alternative. These standard conditions include: Fire Safety Phasing Plan and Conformance with Other Requirements (including all applicable federal, state, regional and/or local codes, requirements, regulations, and guidelines). As with the proposed project, the incorporation of the standard conditions, which are mandatory City requirements, would reduce Public Health and Hazard impacts to less-than-significant. No increase in significance to the public service impacts identified for the proposed project, and no significant public service impacts would result from this alternative.

j. Utilities. The Full BART Replacement Parking Alternative involves the same development program as the proposed project with the exception of replacing Building E, the seven-story parking garage, with a 12- to 13-story parking garage. As such, this alternative would have similar impacts to the proposed project with respect to utilities via increased demand for water, waste water, storm drainage, solid waste and energy.

Given the level of development that would occur under the Full BART Replacement Parking Alternative, all utility related standard conditions that apply to the proposed project would also apply to this alternative. These standard conditions include: Fire Safety Phasing Plan and Conformance with Other Requirements (including all applicable federal, State, regional and/or local codes, requirements, regulations, and guidelines). As with the proposed project, the incorporation of the standard conditions, which are mandatory City requirements, would ensure Public Health and Hazard impacts are less than significant. No increase in significance to the utility impacts identified for the proposed project, and no significant utility impacts would result from this alternative.

k. Cultural and Paleontological Resources. The Full BART Replacement Parking Alternative involves the same development program as the proposed project with the exception of replacing Building E, the seven-story parking garage, with a 12- to 13-story parking garage. As such, this alternative would have similar impacts to cultural resources via grading and other ground disturbing activities because, as described in Chapter IV.K, Cultural and Paleontological Resources, the project area is sensitive for subsurface historical, archaeological, or paleontological resources, which have the potential to be unearthed during site preparation and construction.

Because the Full BART Replacement Parking Alternative includes the same level of development as the proposed project that would include grading and other ground disturbing activities, and further because the project area is sensitive for resources identified above, this alternative would be subject to the same standard conditions as the proposed project. As with the proposed project, the incorporation of the standard conditions, which are mandatory City requirements, would reduce Public Health and Hazard impacts to less-than-significant. No increase in significance to the cultural impacts identified for the proposed project, and no significant cultural impacts would result from this alternative.

l. Aesthetic Resources. The Full BART Replacement Parking Alternative would accommodate 600 BART parking spaces within Building E (versus 300 spaced under the proposed project), which would be constructed as a 12- to 13-story parking garage. The proposed project includes Building E as a seven-story parking garage. All other elements of the Full BART Replacement Parking Alternative would be the same as the proposed project. As a result, the impact on aesthetic resources for all of the site except for Building E would be the same as the proposed project.

Visual simulations showing the Full BART Replacement Parking alternative's scale, massing and conceptual appearance as seen from six representative public viewing locations are presented in Figures V-6A to V-6F (at the end of this chapter). As shown in these simulations, this alternative would represent a substantial increase in the amount of visible building mass and street frontage seen on the site similar to the proposed project. The alternative would be highly visible from some locations along public streets within the project vicinity including 40th Street, West MacArthur Boulevard, Telegraph Avenue and SR-24.

The mass and height of this alternative would be greater than the proposed project along the MacArthur Boulevard frontage as the garage structure would be 12 to 13 stories as shown in Figure V-3B. The increased height of the garage structure would also make the this alternative more visible from distant views as shown in Figure A2. In relationship to surrounding development, the height of the new development, particularly the garage, could be somewhat overbearing when compared to existing development. However, the urban design fabric surrounding the site supports this scale of development including street widths, some of the taller historic and new developments located along the Telegraph Avenue corridor between Downtown and 51st Avenue.

Like the project, the development proposed under this alternative would provide additional sources of glare and light. Implementation of Standard Condition of Approval, AES-1: Lighting Plan would ensure that the use of reflective exterior materials is minimized and that proposed reflective material would not create additional daytime or nighttime glare.

m. Alternative Variants. The variants considered for the other alternatives do not apply to this alternative because the alternative includes Full BART Replacement Parking.

2. Tower Alternative

The Tower Alternative includes a 23-story tower at Building B. Under the proposed project, Building B is a five- to six-story residential building. In the Tower Alternative, residential units would increase to 868 units with 723 market-rate and 145 affordable units (as opposed to 675 residential units with 562 market-rate and 113 affordable units) and parking would increase to approximately 1,100 parking spaces, including 300 exclusive BART parking spaces. This alternative does not include implementation of an RPP Program. Variants which include 600 BART parking spaces and implementation of an RPP Program are also considered at the end of this section. All other project components remain relatively similar with 34,000 square feet of commercial area and 7,500 square feet of community space.

Residential units would increase from 675 units to 868 units under the Tower Alternative. To accommodate the 193 residential units, Building B would be constructed as a 23-story residential tower. Building B is interior to the project area, adjacent to the frontage road. Site improvements and circulation pattern are the same the proposed project. Table V-8 compares the Tower Alternative to the proposed project.

Table V-8 Tower Alternative Scenario Compared to the Proposed Project

Use	Tower Alternative	Proposed Project	Difference Between Project and Alternative
Dwelling Units	868	675	+193
Commercial (SqFt)	44,000	44,000	0
Community Use (SqFt)	7,500	5,000	+2,500
Exclusive BART Parking	300	300	0

Source: MacArthur Transit Community Partners, October 2007.

Infrastructure improvements for the proposed project with Tower Alternative would be the same as the proposed project. Building layout, site circulation and improvements to the frontage road remain the same as the proposed project.

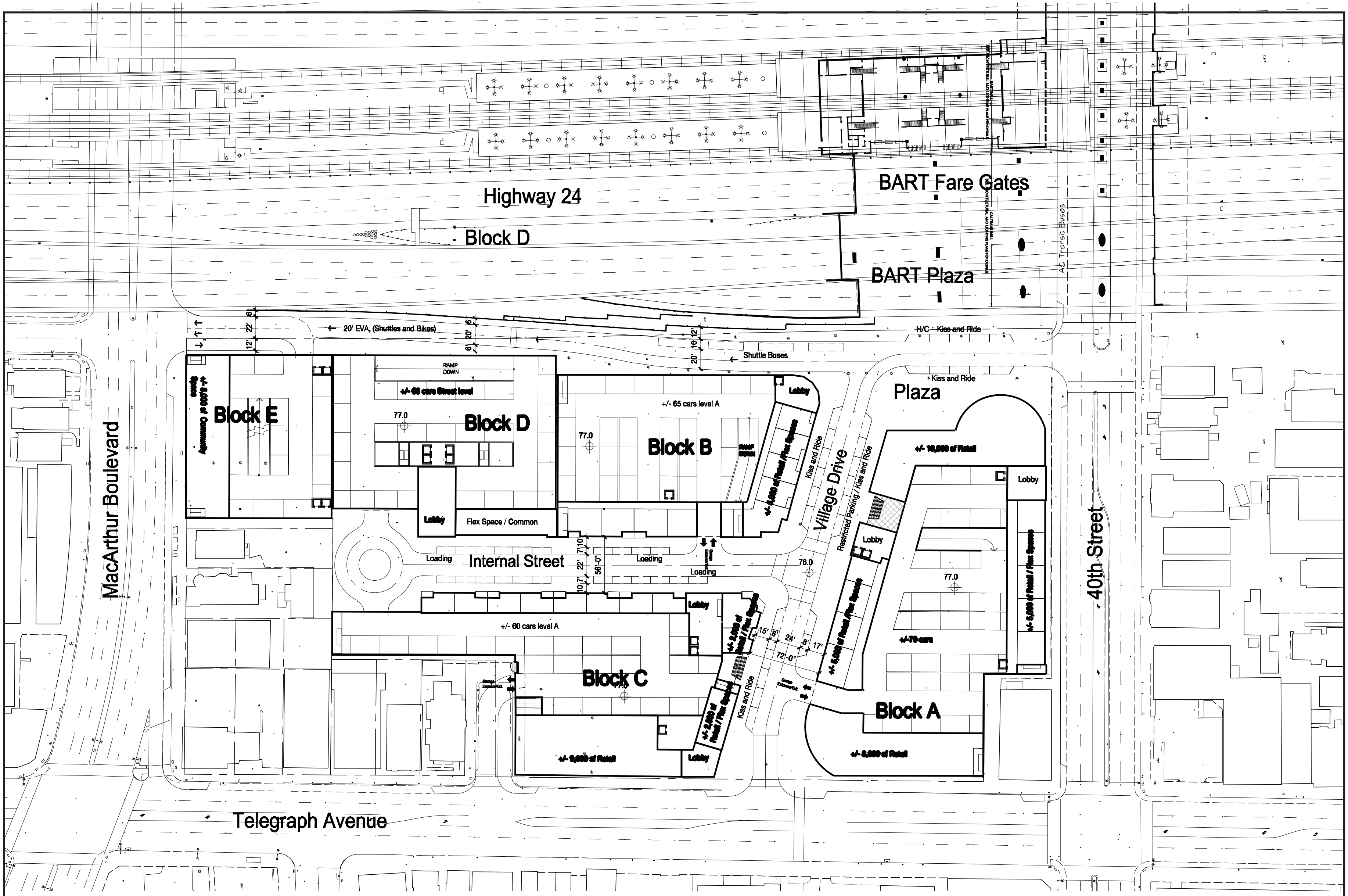
All existing buildings would be demolished and the all trees would be removed under this alternative. Remediation of hazardous materials would occur under this alternative, and residential parking permit program would be established for the surrounding neighborhood. This alternative would include the BART Plaza improvements.

Like the proposed project, the project site would be rezoned to S-15, TOD. The S-15 zone is compatible with the current Neighborhood Commercial Mixed-Use General Plan designation. The discretionary actions included in Chapter 3 would apply to the Tower Alternative.

Figures V-4A and V-4B show a conceptual site plan and cross-section for the Tower Alternative. The potential impacts of the Tower Alternative are described below.

a. Land Use. The land uses within the proposed project within the Tower Alternative are the same as the proposed project as the only difference between this alternative and the proposed project is the number of residential uses and type of building for Building B. Similar to the proposed project, no land use impacts would result from the Tower Alternative.

b. Public Policy. The Tower Alternative would be consistent with City General Plan and other public policies, as well as BART policies for TODs. The main difference between the proposed project and the Tower Alternative is the increase in residential density. The Tower Alternative would increase the density to 117 units per gross acre, whereas the proposed project is 91 units per gross acre. The General Plan allows up to 125 units per gross acre on the project site, and the zoning code has provisions to increase residential density beyond



NTS

FIGURE V-4A

MacArthur Transit Village Project EIR
Conceptual Plan, Tower Alternative

SOURCE: MacArthur Transit Community Partners, LLC. 2007

N:\2007\1407011 MacArthur BART Transit Village EIR\Graphics\MacArthur BART EIR Graphics Files\figures

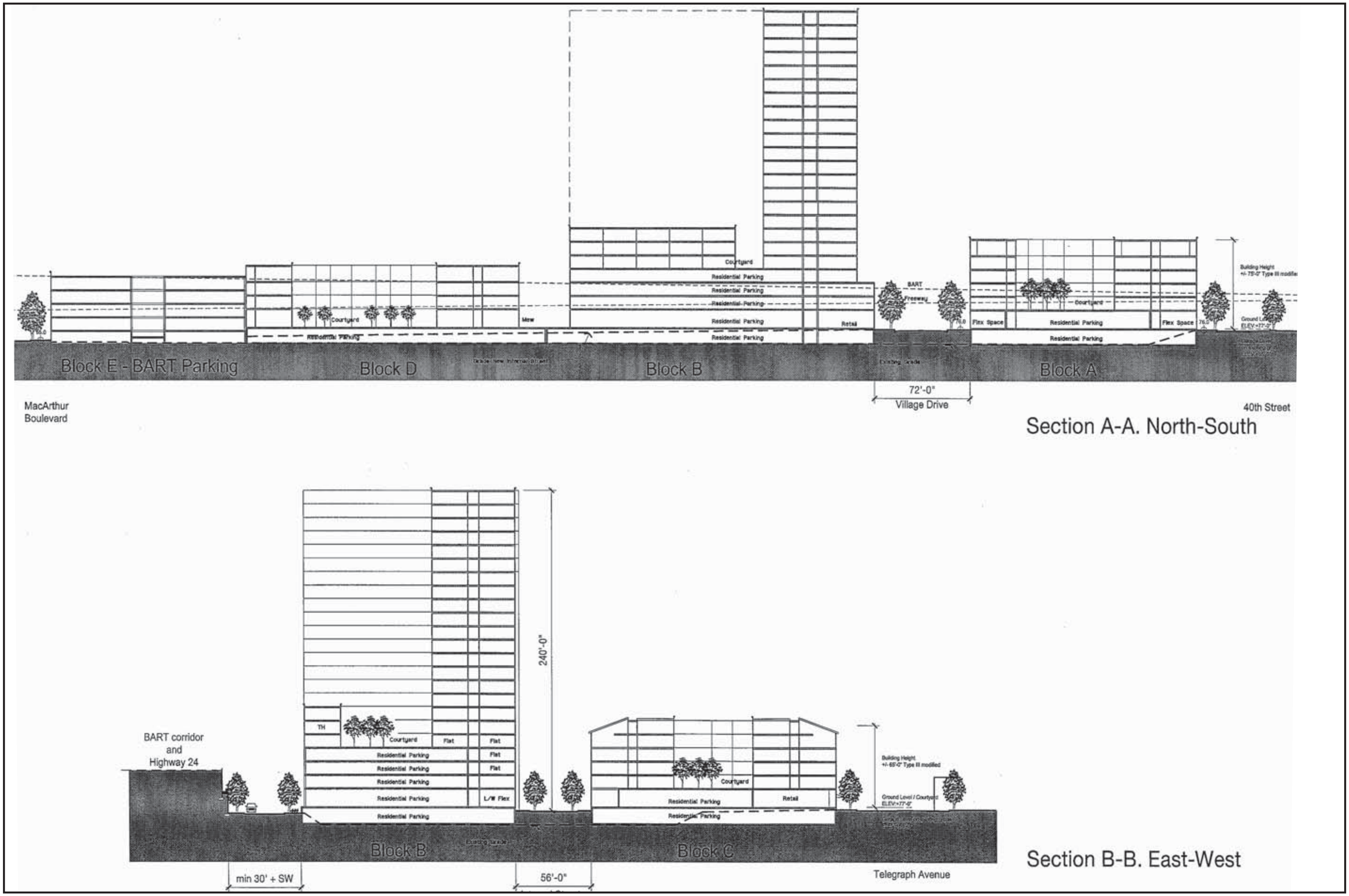


FIGURE V-4B

MacArthur Transit Village Project EIR
Conceptual Cross-Section, Tower Alternative

SOURCE: MacArthur Transit Community Partners, LLC. 2007

the S-15 zone upon approval of a Planned Unit Development permit. The increase in density would not be inconsistent with public policy, rather it would further the achievement of policies to incorporate more housing units on urban in-fill sites.

c. Transportation, Circulation and Parking. Table V-9 presents the trip generation for the Tower Alternative and compares it to the proposed project. As show in the table, the Tower Alternative would generate 406 daily, 41 AM peak hour and 48 PM peak hour trips more than the proposed project.

Tables V-10 through V-12 summarize the existing and Cumulative Years 2015 and 2030 Baseline intersection LOS at the 25 study intersections, respectively. Intersection LOS calculation sheets are provided in Appendix F.

Impacts and Mitigation Measures TRANS-1 through TRANS-9 would continue to be applicable to the Tower Alternative.

d. Air Quality. Air quality impacts associated with implementation of the Tower Alternative would be slightly greater than those associated with the proposed project. The Tower Alternative would have approximately the same amount of construction activity.

Implementation of the City's standard conditions of approval as part of the project would reduce construction activity impacts to a less-than-significant level. The Tower Alternative would not result in CO hot-spots, similar to the proposed project, as shown in Table V-13.

The Tower Alternative would not substantially increase pollutant or odor concentrations, and would not conflict with the Bay Area 2005 Ozone Strategy or the BAAQMD standards. The daily increase in emissions associated with the Tower Alternative operational and area sources is identified in Table V-14 for reactive organic gases (ROG) and nitrogen oxides (NOx) (two precursors of ozone) and coarse particle matter (PM10). The BAAQMD has established thresholds of significance for ozone precursors and PM10 of 80 pounds per day; however, they have not established a threshold for emissions of PM2.5 or CO2. Proposed project emissions shown in Table V-14 would not exceed these thresholds of significance for ROG, NOx, and PM10, and therefore, the Tower Alternative would not have a significant effect on regional air quality.

e. Noise and Vibration. Noise and vibration impacts related to the Tower Alternative would not differ substantially from the proposed project. Noise sensitive receptors would be located at the same approximate distance from SR-24 as the proposed project. As shown in Tables V-15 through V-17, modeled traffic noise levels for the Tower Alternative show that there would be slight increases in traffic noise levels over existing conditions, similar to the proposed project. Traffic volumes and noise levels for traffic on SR-24 and I-580 are

Table V-9 Tower Alternative Vehicle Trip Generation

Land Use	ITE Code	Amount	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Condominium[a]	230	868 DU	4,030	49	242	291	237	117	354
Residential Transit Reduction[b]		Daily19% Peak Hr. 38%	-766	-19	-92	-111	-90	-44	-134
Total Residential Trips			***3,264***	***30***	***150***	***180***	***147***	***72***	***220***
Commercial[c]	814	34 ksf	1,506	51	41	92	41	51	92
Commercial Transit Reduction[d]		5%	-76	-3	-2	-5	-2	-3	-5
Total Commercial Trips			***1,430***	***48***	***39***	***87***	***39***	***48***	***87***
Community Space[e]	565	7.5 ksf	594	51	45	96	46	52	99
BART Parking lot[f]		-300 spaces	0	0	0	0	0	0	0
Total Trip Generation			***5,288***	***129***	***234***	***363***	***232***	***174***	***406***
Proposed Project			***4,886***	***123***	***201***	***324***	***200***	***158***	***358***
Difference			***404***	***6***	***33***	***41***	***33***	***16***	***48***

Notes: du = dwelling unit; ksf = 1,000 square feet.

[a] Trip generation based on the regression equations for Residential Condominium/Townhouse (Land Use 230) in the Institute of Transportation Engineers' (ITE) *Trip Generation* (7th Edition, 2003), as presented below.

Daily Equation: Ln (T) = 0.85 Ln(X) + 2.55
AM Equation: Ln (T) = 0.80 Ln(X) + 0.26 (inbound = 17%, outbound = 83%)
PM Equation: Ln (T) = 0.82 Ln(X) + 0.32 (inbound = 67%, outbound = 33%)
Where: T = trip ends, Ln = natural logarithm, and X = number of dwelling units

[b] 38% peak hour residential transit reduction based on trip generation surveys at Bay Area TODs adjacent to BART stations; confirmed by data presented in *Recommended Trip Generation Adjustments for Transit-Oriented Developments in Oakland (Dowling Associates, April 2006),* as well as *Bay Area Transportation Surveys* (BATS) 2000 data for households within ½ mile of BART stations. Transit reduction for daily trip generation (19%) is lower to account for lower transit mode share for non-work trips.

[c] Daily and PM trip generation based on the rates for Specialty Commercial (Land Use 814) in the ITE *Trip Generation* (7th Edition), as presented below.

Daily Rate: (T) = 44.32 (X)
PM Rate: (T) = 2.71 (X) (inbound = 44%, outbound = 56%)
Where: T = trip ends and X = 1,000 square feet
AM trip generation based on PM trip rate, with reversed inbound/outbound splits.

[d] Commercial transit reduction based on TOD literature on commercial trips, including *Travel Characteristics of Transit-Oriented Development in California* (Lund, Cervero, and Wilson, 2004*),* and *Ridership Impacts of Transit-Focused Development in California (*Cervero, 1994).

[e] Trip generation based on the average rates for Day Care Center (Land Use 565) in the ITE) *Trip Generation* (7th Edition), as presented below.

Daily Rate: (T) = 79.26 (X)
AM Rate: (T) = 12.79 (X) (inbound = 53%, outbound = 47%)
PM Rate: (T) = 13.18 (X) (inbound = 47%, outbound = 53%)
Where: T = trip ends and X = 1,000 square feet

[f] The project includes removing approximately 300 of the existing 618 parking spaces in the BART lot. In the AM peak hour, any change in trips to the parking lot will most likely continue to occur before the peak hour. To be conservative, we assume that BART patrons currently entering and exiting the lot in the PM peak hour will continue to do so.

Source: Fehr & Peers, 2007.

Table V-10 Existing Plus Tower Alternative Intersection Level of Service Summary

No.	Intersection	Traffic Control	Time Period	Existing No Project		Existing Plus Tower Alternative		Significance Yes/No
				LOS	Delay	LOS	Delay	
1	Shattuck Avenue/52nd Street	Signal	AM PM	D D	54.3 51.3	D D	49.8 36.3	No No
2	Telegraph Avenue/52nd Street/ Claremont Avenue	Signal	AM PM	B B	17.7 18.8	B C	17.7 20.3	No No
3	Telegraph Avenue/51st Street	Signal	AM PM	D D	39.1 47.1	D D	39.2 47.4	No No
4	Martin Luther King Jr. Way/ 47th Street/Westbound SR-24 On-Ramp	Signal	AM PM	C B	26.8 11.0	C B	34.7 11.2	No No
5	Martin Luther King Jr. Way/ 45th Street	Signal	AM PM	A A	9.0 9.0	A A	9.0 9.1	No No
6	Telegraph Avenue/45th Street	Signal	AM PM	B A	10.3 6.8	A A	9.4 8.2	No No
7	Market Street/40th Street	Signal	AM PM	B C	17.6 25.0	B C	17.8 25.2	No No
8	West Street/40th Street	Signal	AM PM	B B	13.8 17.4	B B	13.9 18.0	No No
9	Martin Luther King Jr. Way/ 40th Street	Signal	AM PM	B B	13.9 19.9	B B	13.9 18.8	No No
10	Frontage Road/40th Street	SSSC/ Signal[a]	AM PM	B B	10.2 13.8	B B	12.4 7.8	No No
11	BART parking access (west)/ 40th Street	SSSC	AM PM	B B	13.8 17.5	N/A	N/A	No No
12	BART parking access (east)/ 40th Street	SSSC	AM PM	B C	14.6 17.9	N/A	N/A	No No
13	Telegraph Avenue/40th Street	Signal	AM PM	C C	23.8 28.6	C C	21.7 18.1	No No
14	BART parking access/ Telegraph Avenue	SSSC	AM PM	C C	19.3 21.4	N/A	N/A	No No
15	Telegraph Avenue/38th Street	SSSC	AM PM	B C	14.8 21.6	B C	15.0 22.0	No No
16	Market Street/ MacArthur Boulevard	Signal	AM PM	B C	16.8 31.6	B C	16.8 33.9	No No
17	West Street/ MacArthur Boulevard	Signal	AM PM	B B	12.3 14.1	B B	12.4 15.0	No No
18	Martin Luther King Jr. Way/ MacArthur Boulevard	Signal	AM PM	A B	9.0 11.5	A B	9.9 13.9	No No
19	Frontage Road/ MacArthur Boulevard	SSSC/ Signal[a]	AM PM	B C	14.6 15.7	A B	6.2 12.0	No No
20	Telegraph Avenue/ MacArthur Boulevard	Signal	AM PM	B B	18.8 14.4	B D	17.9 39.4	No No
21	Webster Street/ MacArthur Boulevard	Signal	AM PM	A B	8.7 11.4	A B	8.7 11.5	No No
22	Broadway/ MacArthur Boulevard	Signal	AM PM	D D	54.7 42.0	D D	54.5 42.0	No No

Table V-10 Existing Plus Tower Alternative Intersection Level of Service Summary

No.	Intersection	Traffic Control	Time Period	Existing No Project		Existing Plus Tower Alternative		Significance Yes/No
				LOS	Delay	LOS	Delay	
23	Telegraph Avenue/34th Street	Signal	AM PM	A B	6.8 13.0	A B	7.3 13.0	No No
24	Telegraph Avenue/27th Street	Signal	AM PM	C C	23.1 21.8	C C	23.9 20.7	No No
25	Telegraph Avenue/ Village Drive	Signal	AM PM	N/A	N/A	A B	9.8 13.5	No No

Notes: N/A = Intersection does not exist under this scenario.
Bold indicates significant impact.
The LOS/Delay for Side-Street Stop-Control (SSSC) intersections represents the worst movement or approach; for Signalized intersections, the LOS/Delay represents overall intersection.
[a] Intersection is currently side-street stop-controlled, but will be signalized as part of the project.

expected to remain the same as those of the proposed project. Similarly, BART noise and ground-borne vibration impacts would be the same as those associated with the proposed project. Short-term construction related impacts would also be similar to those associated with the proposed project. Although construction under the Tower Alternative would likely involve more pile driving, implementation of the City's standard conditions of approval as part of this alternative would reduce noise and vibration impacts to less-than-significant levels.

f. Hydrology and Water Quality. The Tower Alternative would involve the same development program as the proposed project with the exception of the shift from a five- to six-story residential structure to a 23-story residential tower. This alternative would then result in similar amount of runoff that could affect stormwater similar to the proposed project. As with the proposed project, construction workers and the public would be exposed to potential contaminants in the soil and groundwater related to dewatering on-site.

All hydrology and water quality related standard conditions for the proposed project would be applicable to the Tower Alternative. As is the case with the proposed project, the incorporation of the standard conditions, which are mandatory City requirements, would reduce Hydrology and Water Quality impacts to a less-than-significant level. No increase in significance to the hydrology and water impacts identified for the proposed project, and no significant hydrology and water impacts would result from this alternative.

g. Geology, Soils, and Seismicity. Under this alternative, grading activities and building foundations would be subject to geologic and seismic conditions and constraints similar to the proposed project. An earthquake on a nearby fault could result in strong seismic

Table V-11 Cumulative Year 2015 Baseline Intersection Level of Service Summary (Tower Alternative)

No.	Intersection	Traffic Control	Time Period	2015 No Project LOS	2015 No Project Delay	2015 Plus Tower Alternative LOS	2015 Plus Tower Alternative Delay	Significance Yes/No
1	Shattuck Avenue/ 52nd Street	Signal	AM PM	E D	61.1 42.5	E D	61.6 40.4	No No
2	Telegraph Avenue/ 52nd Street/ Claremont Avenue	Signal	AM PM	C D	25.1 37.3	C D	25.8 39.0	No No
3	Telegraph Avenue/ 51st Street	Signal	AM PM	E E	65.8 64.6	E **E**	66.9 **66.9***	No **Yes**
4	Martin Luther King Jr. Way/ 47th Street/ Westbound SR -24 On-Ramp	Signal	AM PM	C B	32.8 13.7	D B	41.0 14.6	No No
5	Martin Luther King Jr. Way/ 45th Street	Signal	AM PM	A A	9.5 9.7	A A	9.6 9.7	No No
6	Telegraph Avenue/ 45th Street	Signal	AM PM	B A	12.1 10.0	B B	11.7 12.1	No No
7	Market Street/ 40th Street	Signal	AM PM	C C	20.0 25.1	C C	20.4 25.3	No No
8	West Street/ 40th Street	Signal	AM PM	B C	16.4 20.0	B C	16.4 22.3	No No
9	Martin Luther King Jr. Way/ 40th Street	Signal	AM PM	B B	14.8 18.9	B C	15.1 23.7	No No
10	Frontage Road/40th Street	Signal	AM PM	A B	7.2 10.1	A A	9.4 8.6	No No
11	BART parking access (west)/ 40th Street	SSSC	AM PM	B C	12.8 15.3	N/A	N/A	No No
12	BART parking access (east)/ 40th Street	SSSC	AM PM	B C	13.9 15.4	N/A	N/A	No No
13	Telegraph Avenue/ 40th Street	Signal	AM PM	C D	29.1 44.2	C D	22.8 41.6	No No
14	BART parking access/ Telegraph Avenue	SSSC	AM PM	E D	40.4 28.2	N/A	N/A	No No
15	Telegraph Avenue/ 38th Street	SSSC	AM PM	C F	15.6 81.3	B F	16.8 89.1	No No
16	Market Street/ MacArthur Boulevard	Signal	AM PM	D D	38.9 53.6	D **E**	40.7 **55.2**	No **Yes**
17	West Street/ MacArthur Boulevard	Signal	AM PM	B B	14.7 17.0	B B	15.0 18.4	No No
18	Martin Luther King Jr. Way/ MacArthur Boulevard	Signal	AM PM	A B	9.1 14.7	B B	10.5 16.1	No No
19	Frontage Road/ MacArthur Boulevard	SSSC/ Signal[a]	AM PM	B C	14.8 21.6	A B	8.1 2.4	No No
20	Telegraph Avenue/ MacArthur Boulevard	Signal	AM PM	C E	21.7 39.5	C D	26.5 40.1	No No
21	Webster Street/ MacArthur Boulevard	Signal	AM PM	B B	10.3 12.2	B B	10.3 12.3	No No
22	Broadway/ MacArthur Boulevard	Signal	AM PM	D E	47.7 60.5	D E	47.8 60.6	No No

Table V-11 Cumulative Year 2015 Baseline Intersection Level of Service Summary (Tower Alternative)

No.	Intersection	Traffic Control	Time Period	2015 No Project		2015 Plus Tower Alternative		Significance Yes/No
				LOS	Delay	LOS	Delay	
23	Telegraph Avenue/ 34th Street	Signal	AM	A	9.4	A	9.8	No
			PM	B	15.5	B	18.6	No
24	Telegraph Avenue/ 27th Street	Signal	AM	C	24.8	C	24.8	No
			PM	C	23.7	C	24.0	No
25	Telegraph Avenue/ Village Drive	Signal	AM	N/A	N/A	B	13.5	No
			PM			A	9.9	No

Notes: N/A = Intersection does not exist under this scenario.
Bold indicates significant impact.
The LOS/Delay for Side-Street Stop-Control (SSSC) intersections represents the worst movement or approach; for Signalized intersections, the LOS/Delay represents overall intersection.
* The average delay of a critical movement would increase by more than 6 seconds.
[a] Intersection is currently side-street stop-controlled, but will be signalized as part of the project.

Source: Fehr & Peers, 2007.

shaking at the project site. The surface and near surface site materials are classified as Urban Land, which is a man-made soil type consisting of various grades of un-engineered fill, possibly containing debris. The primary geologic concerns for the site are direct damage to structures from seismic shaking, seismically induced liquefaction and attendant ground failure, expansive soils, and settlement or differential settlement. All geology, soils and seismicity related standard conditions for the proposed project would be applicable to the Tower Alternative. These standard conditions include Erosion and Sediment Control Plan, Soils Report, and Geotechnical Report. As is the case with the proposed project, the incorporation of the standard conditions, which are mandatory City requirements, would reduce Geology, Soils and Seismicity impacts to a less-than-significant level. No increase in significance to the geology, soils and seismicity impacts identified for the proposed project, and no significant geology, soils and seismicity impacts would result from this alternative.

h. Public Health and Hazards. The Tower Alternative would result in impacts similar to the proposed project related to public health and hazards via disposal of hazardous materials, or creation of a significant hazard to the public or the environment through reasonable foreseeable upset or accident conditions involving the release of hazardous materials into the environment.

Given the level of development that would occur under the Tower Alternative, all public health and hazards related standard conditions that apply to the proposed project would also apply to this alternative. These standard conditions include: Asbestos Removal, Lead-Based Paint/Coatings, Asbestos or PCB Occurrence Assessment, Hazards Best Management Practices, Phase I and/or Phase II reports Environmental Site Assessments Reports

Table V-12 Cumulative Year 2030 Baseline Intersection Level of Service Summary (Tower Alternative)

No.	Intersection	Traffic Control	Time Period	Cumulative (2030) Without Project		Cumulative (2030) Plus Tower Alternative		Significance Yes/No
				LOS	Delay	LOS	Delay	
1	Shattuck Avenue/52nd Street	Signal	AM	F	82.4	F	82.7	No
			PM	D	48.7	D	49.7	No
2	Telegraph Avenue/52nd Street/ Claremont Avenue	Signal	AM	F	>120	**F**	**>120**	**Yes**
			PM	E	70.1	**E**	**73.0***	**Yes**
3	Telegraph Avenue/51st Street	Signal	AM	F	>120	**F**	**>120***	**Yes**
			PM	F	110.3	**F**	**113.9**	**Yes**
4	Martin Luther King Jr. Way/ 47th Street/Westbound SR-24 On-Ramp	Signal	AM	D	39.3	D	48.0	No
			PM	C	31.6	D	35.7	No
5	Martin Luther King Jr. Way/ 45th Street	Signal	AM	B	10.6	B	10.7	No
			PM	B	11.1	B	11.2	No
6	Telegraph Avenue/45th Street	Signal	AM	B	16.8	B	17.3	No
			PM	C	26.7	C	31.6	No
7	Market Street/40th Street	Signal	AM	E	63.3	E	66.3	No
			PM	D	35.9	D	36.9	No
8	West Street/40th Street	Signal	AM	B	18.1	B	18.3	No
			PM	D	52.8	**E**	**59.1**	**Yes**
9	Martin Luther King Jr. Way/ 40th Street	Signal	AM	B	17.3	B	17.7	No
			PM	C	23.0	C	31.4	No
10	Frontage Road/40th Street	Signal	AM	A	9.0	C	16.3	No
			PM	B	13.0	A	7.2	No
11	BART parking access (west)/ 40th Street	SSSC	AM	B	13.5	N/A	N/A	No
			PM	C	15.7			No
12	BART parking access (east)/ 40th Street	SSSC	AM	B	14.6	N/A	N/A	No
			PM	C	15.6			No
13	Telegraph Avenue/40th Street	Signal	AM	E	74.9	D	**83.4**	**Yes**
			PM	F	92.2	**E**	**92.8***	**Yes**
14	BART parking access/ Telegraph Avenue	SSSC	AM	F	>90	N/A	N/A	No
			PM	E	47.0			No
15	Telegraph Avenue/38th Street	SSSC	AM	C	24.0	D	8.7	No
			PM	F	>90	F	>120	No
16	Market Street/ MacArthur Boulevard	Signal	AM	F	>120	**F**	**>120**	**Yes**
			PM	F	>120	**F**	**>120**	**Yes**
17	West Street/ MacArthur Boulevard	Signal	AM	D	36.7	D	37.2	No
			PM	C	26.6	C	26.5	No
18	Martin Luther King Jr. Way/ MacArthur Boulevard	Signal	AM	B	10.6	B	13.6	No
			PM	B	17.7	C	21.5	No
19	Frontage Road/ MacArthur Boulevard	SSSC/ Signal [a]	AM	C	15.3	A	6.4	No
			PM	C	17.1	B	3.4	No
20	Telegraph Avenue/ MacArthur Boulevard	Signal	AM	D	50.2	**E**	**66.1**	**Yes**
			PM	F	106.5	F	103.6	No
21	Webster Street/ MacArthur Boulevard	Signal	AM	B	12.7	B	12.8	No
			PM	B	14.1	B	14.2	No
22	Broadway/ MacArthur Boulevard	Signal	AM	F	82.5	**F**	**85.2**	**Yes**
			PM	F	119.7	F	>120	No

Table V-12 Cumulative Year 2030 Baseline Intersection Level of Service Summary (Tower Alternative)

No.	Intersection	Traffic Control	Time Period	Cumulative (2030) Without Project		Cumulative (2030) Plus Tower Alternative		Signifi-cance Yes/No
				LOS	Delay	LOS	Delay	
23	Telegraph Avenue/ 34th Street	Signal	AM	B	11.8	B	11.9	No
			PM	C	21.7	C	21.8	No
24	Telegraph Avenue/ 27th Street	Signal	AM	D	46.8	D	48.5	No
			PM	D	40.2	D	44.5	No
25	Telegraph Avenue/ Village Drive	Signal	AM	N/A	N/A	C	20.2	No
			PM			B	9.2	No

Notes: N/A = Intersection does not exist under this scenario.
Bold indicates significant impact.
The LOS/Delay for Side-Street Stop-Control (SSSC) intersections represents the worst movement or approach; for Signalized intersections, the LOS/Delay represents overall intersection.
* The average delay of a critical movement would increase by more than 6 seconds.
[a] Intersection is currently side-street stop-controlled, but will be signalized as part of the project.

Source: Fehr & Peers, 2007.

Remediation, Lead-based Paint Remediation, Asbestos Remediation, Other Materials Classified as Hazardous Waste, Health and Safety Plan per Assessment, Fire Safety and Fire Safety Phasing Plan. As is the case with the proposed project, the incorporation of the standard conditions, which are mandatory City requirements, would reduce Public Health and Hazard impacts to a less-than-significant level. No increase in significance to the public health and hazards impacts identified for the proposed project, and no significant public health and hazards impacts would result from this alternative.

i. Public Services. The Tower Alternative involves the same development program as the proposed project with the exception of replacing Building B, the five- to six-story residential building, with a 23-story residential tower and thereby increasing the dwelling units from 675 to 868 units. As such, this alternative may have slightly greater impacts on public services via increased demand for fire, police, school, parks and library services. However, an increase of 193 dwelling units would not create impacts beyond those identified in the Section IV.I, Public Services.

Given the level of development that would occur under the Tower Alternative, all public service related standard conditions that apply to the proposed project would also apply to this alternative. These standard conditions include: Fire Safety Phasing Plan and Conformance with Other Requirements (including all applicable federal, State, regional and/or local codes, requirements, regulations, and guidelines). As is the case with the proposed project, the incorporation of the standard conditions, which are mandatory City requirements, would reduce Public Health and Hazard impacts to less-than-significant. No

Table V-13 CO Concentrations for Tower Alternative Conditions

Intersection	Receptor Distance to Road Centerline (Meters)	Existing Plus Tower Alternative 1hr/8hr CO Concentration (ppm)	2015 Plus Tower Alternative 1hr/8hr CO Concentration (ppm)	2030 Plus Tower Alternative 1hr/8hr CO Concentration (ppm)	Exceeds State Standards 1-Hr	Exceeds State Standards 8-Hr
M.L. King Jr. Way and 45th Street	11	4.2/3.0	3.8/2.8	3.8/2.8	No	No
	11	4.1/3.0	3.8/2.8	3.8/2.8	No	No
	10	4.1/3.0	3.8/2.8	3.8/2.8	No	No
	10	4.1/3.0	3.7/2.7	3.7/2.7	No	No
Telegraph Avenue and 45th Street	11	5.0/3.6	4.4/3.2	4.4/3.2	No	No
	11	5.0/3.6	4.4/3.2	4.4/3.2	No	No
	10	5.0/3.6	4.3/3.1	4.3/3.1	No	No
	10	5.0/3.6	4.3/3.1	4.3/3.1	No	No
M.L. King Jr. Way and 40th Street	14	5.3/3.8	4.4/3.2	4.4/3.2	No	No
	14	5.2/3.7	4.3/3.1	4.3/3.1	No	No
	14	5.2/3.7	4.3/3.1	4.3/3.1	No	No
	14	5.2/3.7	4.3/3.1	4.3/3.1	No	No
BART Access and 40th Street	14	4.9/3.5	4.2/3.0	4.2/3.0	No	No
	14	4.7/3.4	4.1/3.0	4.1/3.0	No	No
	14	4.7/3.4	4.0/2.9	4.0/2.9	No	No
	12	4.6/3.3	4.0/2.9	4.0/2.9	No	No
Telegraph Avenue and 40th Street	14	5.3/3.8	4.6/3.3	4.6/3.3	No	No
	14	5.3/3.8	4.5/3.2	4.5/3.2	No	No
	14	5.3/3.8	4.5/3.2	4.5/3.2	No	No
	14	5.2/3.7	4.4/3.2	4.4/3.2	No	No
M.L. King Jr. Way and MacArthur Boulevard	14	4.6/3.3	4.2/3.0	4.2/3.0	No	No
	14	4.5/3.2	4.0/2.9	4.0/2.9	No	No
	14	4.5/3.2	4.0/2.9	4.0/2.9	No	No
	14	4.4/3.2	4.0/2.9	4.0/2.9	No	No
BART Access and MacArthur Boulevard	18	4.4/3.2	4.0/2.9	4.0/2.9	No	No
	17	4.4/3.2	4.0/2.9	4.0/2.9	No	No
	14	4.4/3.2	4.0/2.9	4.0/2.9	No	No
	14	4.4/3.2	3.9/2.8	3.9/2.8	No	No
Telegraph Avenue and MacArthur Boulevard	15	5.7/4.1	4.8/3.5	4.8/3.5	No	No
	14	5.6/4.0	4.7/3.4	4.7/3.4	No	No
	14	5.5/3.9	4.6/3.3	4.6/3.3	No	No
	14	5.4/3.9	4.5/3.2	4.5/3.2	No	No

Note: Includes ambient 1-hour concentration of 3.3 ppm and ambient 8-hour concentration of 2.4 ppm. Measured at the Alice Street, Oakland AQ Station for the years 2004 and 2005, and at the Chapel Way, Fremont AQ Station for the year 2006.
Source: LSA Associates, Inc., 2007.

Table V-14 Tower Alternative Regional Emissions in Pounds Per Day

	Reactive Organic Gases	Nitrogen Oxides	PM10	PM2.5	CO2
Operation (Vehicle) Emissions	30.4	29.3	64.6	12.3	36,534.4
Area Source Emissions	49.3	5.7	0.03	0.03	7,009.4
Total Regional Emissions	**79.7**	**35.0**	**64.6**	**12.3**	**43,543.8**
BAAQMD Significance Threshold	80.0	80.0	80.0	NA	NA
Exceed?	No	No	No	NA	NA

Source: LSA Associates, Inc., 2007.

Table V-15 Existing with Tower Alternative Traffic Noise Levels, dBA

Roadway Segment	ADT [a]	Center-line to 70 Ldn (feet)	Center-line to 65 Ldn (feet)	Center-line to 60 Ldn (feet)	Ldn (dBA) 50 Feet from Centerline of Outer-most Lane	Increase over Existing Conditions
M.L. King Jr. Way – 45th Street to 40th Street	8,400	< 50	< 50	90	61.9	0.1
Telegraph Avenue – 45th Street to 40th Street	21,000	< 50	64	129	63.9	0.2
40th Street – West Street to M.L. King Jr. Way	15,200	< 50	65	133	64.1	0.2
40th St. – M.L. King Jr. Way to BART Access	18,200	< 50	72	149	64.8	0.2
40th St. – BART Access to Telegraph Ave.	16,800	< 50	69	142	64.5	0.0
M.L. King Jr. Way – 40th St. to MacArthur Blvd.	8,500	< 50	< 50	90	62.0	0.3
Telegraph Avenue – 40th Street to 38th Street	19,000	< 50	60	121	63.4	0.3
Telegraph Ave. – 38th Street to MacArthur Blvd.	19,100	< 50	60	121	63.5	0.3
MacArthur Bld. – West St. to M.L. King Jr. Way	12,400	< 50	61	118	62.8	0.1
MacArthur Blvd. – BART Access to Telegraph Avenue	14,300	< 50	65	129	63.4	0.5

Note: The shaded areas in the tables indicate the roadway segments adjacent to the project site.

[a] ADT=Average Daily Trips calculated from traffic volumes in the Fehr & Peers TIA. Model rounds ADT up to 100 trips.
Source: LSA Associates, Inc., 2007.

increase in significance to the public service impacts identified for the proposed project, and no significant public service impacts would result from this alternative.

j. Utilities. The Tower Alternative would increase the residential units from 675 to 868 units. As such, this alternative would have slight greater impacts to utilities via increased demand for water, waste water, storm drainage, solid waste and energy. Although the Tower Alternative, like the proposed the project, would not result in significant impacts, it should be noted that the Tower Alternative would have an increased wastewater generation

Table V-16 Cumulative Year 2015 Baseline with Tower Alternative Traffic Noise Levels, dBA

Roadway Segment	ADT	Center-line to 70 Ldn (feet)	Center-line to 65 Ldn (feet)	Center-line to 60 Ldn (feet)	Ldn (dBA) 50 Feet from Centerline of Outermost Lane	Increase over Future 2015 w/o Project Conditions
M.L. King Jr. Way – 45th Street to 40th Street	10,300	< 50	< 50	102	62.8	0.2
Telegraph Avenue – 45th Street to 40th Street	27,000	< 50	74	152	65.0	0.2
40th Street - West Street to M.L. King Jr. Way	17,800	< 50	71	147	64.7	0.2
40th Street - M.L. King Jr. Way to BART Access	20,700	< 50	78	162	65.4	0.2
40th Street - BART Access to Telegraph Avenue	19,400	< 50	75	155	65.1	0.0
M.L. King Jr. Way - 40th St. to MacArthur Blvd.	10,100	< 50	< 50	101	62.7	0.2
Telegraph Avenue - 40th Street to 38th Street	24,300	< 50	69	142	64.5	0.3
Telegraph Ave. – 38th St. to MacArthur Blvd.	24,300	< 50	69	142	64.5	0.2
MacArthur Blvd. – West St. to M.L. King Jr. Way	17,600	< 50	73	147	64.3	0.1
MacArthur Blvd. - BART Access to Telegraph Avenue	19,600	< 50	78	157	64.8	0.5

Source: LSA Associates, Inc., 2007.

Table V-17 Cumulative Year 2030 Baseline with Tower Alternative Traffic Noise Levels, dBA

Roadway Segment	ADT	Center-line to 70 Ldn (feet)	Center-line to 65 Ldn (feet)	Center-line to 60 Ldn (feet)	Ldn (dBA) 50 feet from Centerline of Outer-most Lane	Increase over Future 2030 No Project Conditions
M.L. King Jr. Way – 45th Street to 40th Street	12,700	< 50	57	117	63.7	0.1
Telegraph Avenue – 45th Street to 40th Street	30,500	< 50	79	164	65.5	0.1
40th Street – West Street to M.L. King Jr. Way	23,500	< 50	85	176	66.0	0.1
40th St. – M.L. King Jr. Way to BART Access	26,900	< 50	92	193	66.5	0.1
40th Street – BART Access to Telegraph Ave.	25,600	< 50	89	186	66.3	0.0
M.L. King Jr. Way – 40th St. to MacArthur Blvd.	12,000	< 50	55	113	63.5	0.3
Telegraph Ave. – 40th St. to 38th Street	29,300	< 50	77	160	65.3	0.2
Telegraph Ave. – 38th St. to MacArthur Blvd.	29,800	< 50	78	162	65.4	0.2
MacArthur Blvd. – West St. to M.L. King Jr. Way	25,900	< 50	91	189	66.0	0.1
MacArthur Blvd. – BART Access to Telegraph Ave.	27,800	< 50	95	197	66.3	0.3

Source: LSA Associates, Inc., 2007.

rate. The additional 193 units, depending on actual bedroom count, could add as much as 28,950 gpd if all 193 units were one bedroom units, or 48,250 gpd if all 193 units were three-bedroom units. This alternative would also increase water demand, storm drainage and solid waste generation (at a rate of five pounds per unit, per day). increase in significance to the public service impacts identified for the proposed project, and no significant public service impacts would result from this alternative.

Given the level of development that would occur under the Tower Alternative, all utility related standard conditions that apply to the proposed project would also apply to this alternative. These standard conditions include: Fire Safety Phasing Plan and Conformance with Other Requirements (including all applicable federal, state, regional and/or local codes, requirements, regulations, and guidelines). As is the case with the proposed project, the incorporation of the standard conditions, which are mandatory City requirements, would reduce Public Health and Hazard impacts to a less-than-significant level. No increase in significance to the utility impacts identified for the proposed project, and no significant utility impacts would result from implementation of this alternative.

k. Cultural and Paleontological Resources. The Tower Alternative would result in a level of disturbance similar to the proposed project. As such, this alternative would have similar impacts to cultural resources via grading and other ground disturbing activities because, as described in Chapter IV.K, Cultural and Paleontological Resources, the project area is sensitive for subsurface historical, archaeological, or paleontological resources, which have the potential to be unearthed during site preparation and construction.

Because the Tower Alternative includes a similar level of development as the proposed project that would include grading and other ground disturbing activities, and further because the project area is sensitive for resources identified above, this alternative would be subject to the same standard conditions as the proposed project. As is the case with the proposed project, the incorporation of the standard conditions, which are mandatory City requirements, would reduce Public Health and Hazard impacts to less-than-significant. No increase in significance to the cultural impacts identified for the proposed project, and no significant cultural impacts would result from this alternative.

l. Aesthetic Resources, Shade/Shadow and Wind. The Tower Alternative includes a 23-story tower at Building B. Under the proposed project, Building B is a five- to six-story residential building. The potential impacts associated with aesthetic resources, shade and shadow, and wind would be greater than the proposed project due to the increased height. The impact on aesthetic resources for all of the site except for Building B would be the same as the proposed project.

Visual simulations showing the Tower Alternative's scale, massing and conceptual appearance as seen from six representative public viewing locations are presented in Figures V-7A through V-7F (at the end of this chapter). As shown in these simulations, this alternative would represent a substantial increase in the amount of visible building mass and street frontage seen on the site similar to the proposed project. The alternative would be highly visible from some locations along public streets within the project vicinity including 40th Street, West MacArthur Boulevard, Telegraph Avenue and SR-24.

The inclusion of a 23-story tower in the central portion of the site adjacent to SR-24 substantially increases the mass and height of this alternative as compared to the proposed project particularly as it is viewed from more distant locations as shown in Figures V-7B.

In relationship to surrounding development, the height of the new development, particularly the tower element and parking structure, could be overbearing when compared to existing development. However, the urban design fabric surrounding the site supports this scale of development including street widths, some of the taller historic and new developments located along the Telegraph Avenue corridor between Downtown and 51st Avenue, Including the Kaiser Hospital development which will include buildings approximately 200 feet tall.

Like the project, the development proposed under this alternative would provide additional sources of glare and light. Implementation of Standard Condition of Approval, AES-1: Lighting Plan would ensure that the use of reflective exterior materials is minimized and that proposed reflective material would not create additional daytime or nighttime glare.

The implementation of this alternative would minimally increase shade and shadow and wind impacts over those anticipated from the proposed project. A shadow analysis, see Figures V-8A through V-8F at the end of this chapter, was conducted to determine whether the Tower Alternative would cast new shadows on buildings, streets, and parking areas within and adjacent to the project site.

Overall the shadow impacts on adjacent properties from this alternative would not be substantial as the majority of the shadows will be cast towards the freeway and onto the project site.

Shadows created by the proposed project on December 21, winter solstice, would be the most extensive that would occur as a result this alternative. Because the existing shadow condition within and around the project site on this day is already significant, new shadows created by the project would minimally contribute to the existing shadow condition on this day and, as a result, would not be considered significant.

m. Alternative Variants. Below is a discussion of the Tower Alternative with two alternative variants: Full BART Replacement Parking and With a Residential Parking Permit Program (RPP).

- **Full BART Replacement Parking.** The traffic analysis for the proposed project (see Transportation and Circulation Section IV.C) did not reduce project trip generation to account for reduced BART parking. Thus, traffic conditions under the Tower Alternative with the Full BART Replacement Parking variant would be similar to the analyzed Tower Alternative. The inclusion of Full BART Replacement Parking option within this alternative would not result in any new or significantly different impacts than those identified for the Tower Alternative without full BART replacement parking except for the area of aesthetics. The impacts related to aesthetics if this variant is implemented would the same as what is described for the Full BART Replacement Parking Alternative described and analyzed below in Section C.1.

- **With a Residential Parking Permit Program (RPP).** As on-site BART parking is reduced, BART patrons who currently drive and park on-site may be attracted to park in the surrounding residential neighborhoods. This would reduce the on-street parking available for local residents. An RPP that would cover approximately a ¼-mile radius around the project site could be used as a tool to offset potential parking impacts in the surrounding neighborhood associated with the reduction in on-site BART parking. The RPP would restrict on-street parking by non-residents to fewer than two hours during the weekdays. Since BART commuters would park longer than two hours, on-street parking would no longer be available to them. Parking would still be available for Telegraph Avenue commercial district shoppers, since they typically park for less than two hours. Implementation of a RPP program would cause a significant reduction in off-site parking supply for BART patrons. It has been estimated that as many as 216 BART patrons currently park on residential streets adjacent to the station. It is estimated that about 25 percent of BART patrons who currently drive and park in the surrounding neighborhood would shift to other travel modes to access the BART Station if on-street parking is no longer available to them (see Appendix F). The rest may no longer use the MacArthur BART Station. The reduction in off-site parking supply for BART patrons would result in fewer vehicles driving to and from the MacArthur BART Station and a reduction in number and magnitude of the identified project impacts at intersections. The potential secondary impacts of this alternative variant would be the same as those described for the project variant. See pages 215 and 216 of Section IV.C, Transportation, Circulation and Parking for a discussion of potential secondary impacts associated with implementation of an RPP program.

3. Increased Commercial Alternative

The Increased Commercial Alternative, which assumes a 172,000 square feet of commercial office would be constructed in Building A. Under the proposed project, Building A is a five- to six-story mixed-use building with 230 market-rate units above 26,000 square feet of ground floor commercial and live/work flex space. Under the Commercial Alternative, 172,000 square feet of commercial office space is introduced onto the site. In addition to the commercial office area, the Increased Commercial Alternative would include 475 residential units (395 market-rate and 80 affordable units), 27,000 square feet of commercial area, 5,000 of community space, and 300 exclusive BART parking spaces. This alternative does not include implementation of an RPP Program. Variants which include 600

BART parking spaces and implementation of an RPP Program are also considered at the end of this section. Site improvements and circulation pattern are the same the proposed project. Table V-18 compares the Increased Commercial Alternative to the proposed project.

Table V-18 Increased Commercial Alternative Scenario Compared to the Proposed Project

Use	Increased Commercial Alternative	Proposed Project	Difference Between Project and Alternative
Dwelling Units	475	675	-200
Commercial (SqFt)	172,000	44,000	+128,000
Community Use (SqFt)	5,000	5,000	0
Exclusive BART Parking	300	300	0

Source: MacArthur Transit Community Partners, October 2007.

Infrastructure improvements for the Increased Commercial Alternative would be the same as the proposed project. Building layout, site circulation and improvements to the frontage road remain the same as the proposed project.

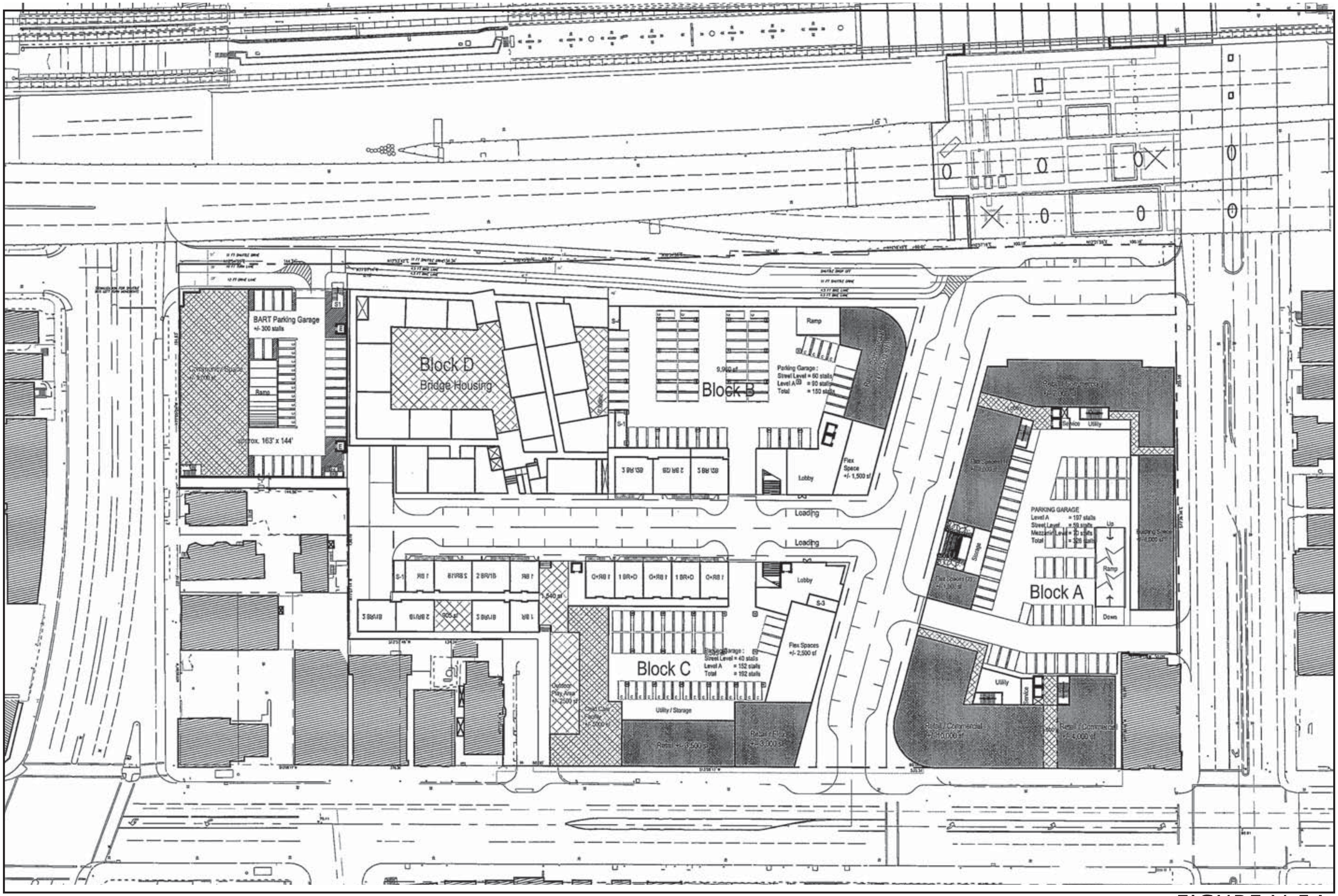
All existing buildings would be demolished and the all trees would be removed under this alternative. Remediation of hazardous materials would occur under this alternative, and residential parking permit program would be established for the surrounding neighborhood. This alternative would include the BART Plaza improvements.

Like the proposed project, the project site would be rezoned to S-15, TOD. The S-15 zone is compatible with the current Neighborhood Commercial Mixed-Use General Plan designation. The discretionary actions included in Chapter 3 would apply to the Increased Commercial Alternative.

Figures V-5A and V-5B show a conceptual plan and cross-sections for the Increased Commercial Alternative. The potential impacts of the Increased Commercial Alternative are described below.

a. Land Use. The land uses within the Increased Commercial Alternative differ from the proposed project with an increase in commercial area and decrease in residential units. These differences would not result in incompatible land uses nor would they create a physical divide within community project. Like the proposed project, no land use impacts would result from this alternative.

b. Public Policy. Implementation of the Increased Commercial Alternative would result in more commercial area and less residential development. This Alternative would be generally



NTS

FIGURE V-5A

MacArthur Transit Village Project EIR
Conceptual Plan, Increased Commercial Alternative

SOURCE: MacArthur Transit Community Partners, LLC. 2007

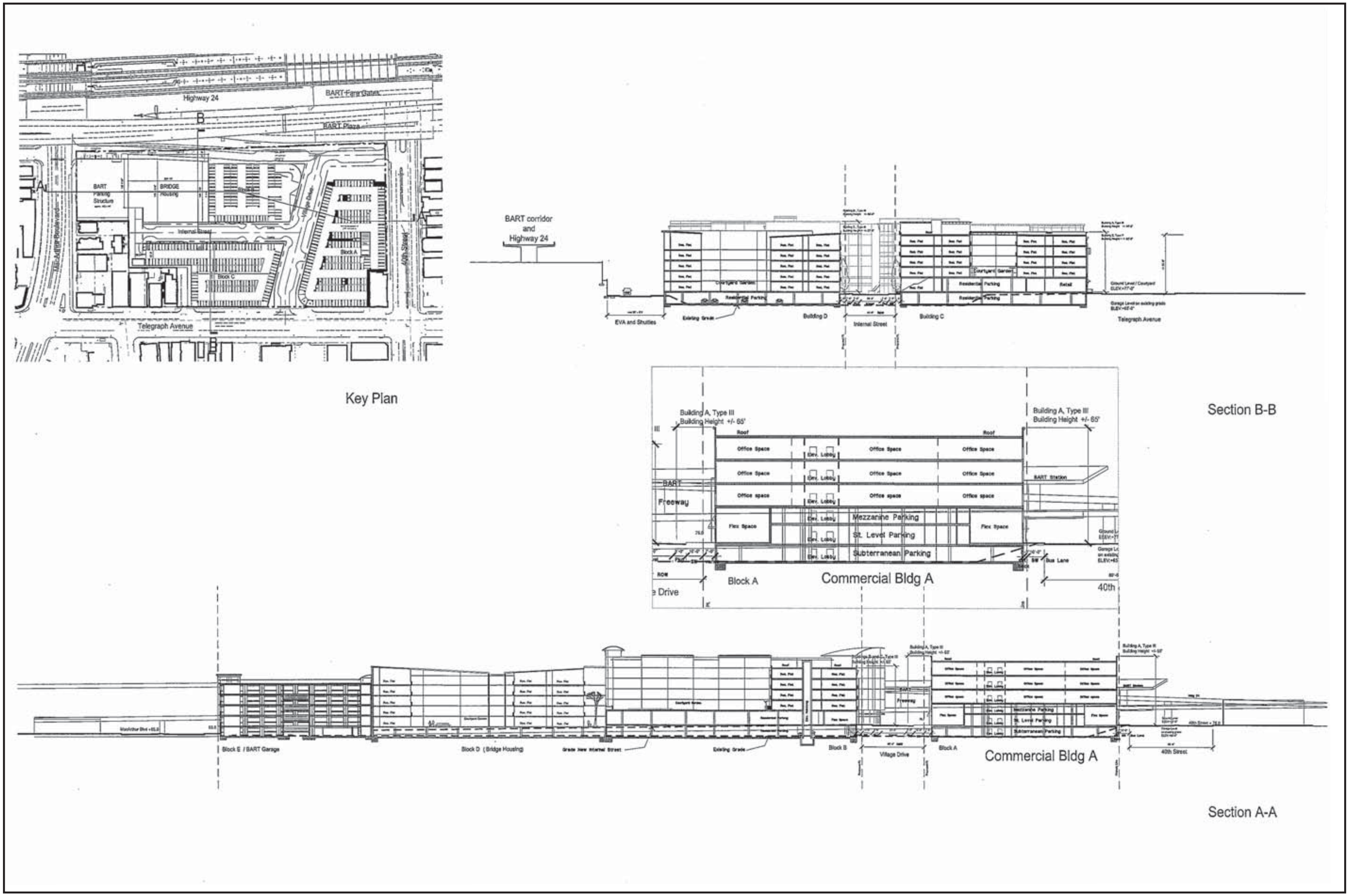


FIGURE V-5B

MacArthur Transit Village Project EIR

Conceptual Cross-Section, Increased Commercial Alternative

SOURCE: MacArthur Transit Community Partners, LLC. 2007

N:\2007\1407011 MacArthur BART Transit Village EIR\Graphics\MacArthur BART EIR Graphics Files\figures

consistent with City General Plan policies and BART polices for TODs by creating an active mixed-use development, and like the proposed project, no physical impacts related to inconsistencies with public policy would result from implementation of the Increased Commercial Alternative.

c. Transportation, Circulation and Parking. Table V-19 presents the trip generation for the Increased Commercial Alternative and compares it to the proposed project. As shown in the table, the Increased Commercial Alternative would generate 222 daily, 152 AM peak hour and 128 PM peak hour trips more than the proposed project. Since this alternative would replace office uses with residential uses, it would generate fewer outbound trips and more inbound trips than the proposed project during the AM peak hour and more outbound trips and fewer inbound trips during the PM peak hour.

Tables V-20 through V-22 summarize the Existing and Cumulative Years 2015 and 2030 Baseline intersection LOS at the 25 study intersections, respectively. Intersection LOS calculation sheets are provided in Appendix F.

Impacts and Mitigation Measures TRANS-1 through TRANS -9 would continue to be applicable to the Increased Commercial Alternative. In addition, the Increased Commercial Alternative would cause the following significant impact on intersection operations:

<u>Impact TRANS-1 (Increased Commercial Alternative)</u>: The addition of project traffic would cause a significant impact at the Market Street/40th Street intersection (#7) under Cumulative Year 2030 Baseline Plus Increased Commercial Alternative. The project would contribute to LOS E operations during the AM peak hour and increase critical movement average delay by more than 6 seconds. (S)

> <u>Mitigation Measure TRANS-1 (Increased Commercial Alternative)</u>: Optimize signal timing (i.e., adjust the allocation of green time for each intersection approach) at the Market Street/40th Street intersection. To implement this measure, the project sponsor shall submit a signal optimization plan to the City of Oakland's Transportation Services Division for review and approval. The Plan shall consist of signal turning parameters for the signals in the coordinating group. The project sponsor shall fund the cost of preparing and implementing the Plan. Signal timing parameters shall be reviewed and approved by the City of Oakland. (LTS)

d. Air Quality. Air quality impacts associated with the Increased Commercial Alternative would be similar to those associated with the proposed project. The Increased Commercial Alternative would have approximately the same amount of construction activity.

Implementation of the City's standard conditions of approval as part of the project would reduce construction activity impacts to a less-than-significant level. The Increased

Table V-19 Increased Commercial Alternative Vehicle Trip Generation

Land Use	ITE Code	Amount	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Condominium[a]	230	475 DU	2,412	31	149	180	145	71	216
Residential Transit Reduction[b]		Daily19% Peak Hr. 38%	-458	-12	-57	-68	-55	-27	-82
Total Residential Trips			***1,954***	***19***	***92***	***112***	***90***	***44***	***134***
Commercial[c]	814	27 ksf	1,198	41	32	73	32	41	73
Commercial Transit Reduction[d]		5%	-60	-2	-2	-4	-2	-2	-4
Total Commercial Trips			***1,138***	***39***	***30***	***69***	***30***	***39***	***69***
Office[e]	710	172 ksf	2,024	254	35	289	46	225	271
Office Transit Reduction[f]		20%	-404	-51	-7	-58	-9	-45	-54
Total Office Trips			***1,620***	***203***	***28***	***231***	***37***	***180***	***217***
Community Space[g]	565	5 ksf	396	34	30	64	31	35	66
BART Parking Lot[h]		-300 spaces	0	0	0	0	0	0	0
Total Trip Generation			***5,108***	***205***	***180***	***476***	***188***	***298***	***486***
Proposed Project			***4,886***	***123***	***201***	***324***	***200***	***158***	***358***
Difference			***222***	***142***	***-21***	***152***	***-12***	***140***	***128***

Notes: du = dwelling unit; ksf = 1,000 square feet.

[a] Trip generation based on the regression equations for Residential Condominium/Townhouse (Land Use 230) in the Institute of Transportation Engineers' (ITE) *Trip Generation* (7th Edition, 2003), as presented below.

Daily Equation: Ln (T) = 0.85 Ln(X) + 2.55
AM Equation: Ln (T) = 0.80 Ln(X) + 0.26 (inbound = 17%, outbound = 83%)
PM Equation: Ln (T) = 0.82 Ln(X) + 0.32 (inbound = 67%, outbound = 33%)
Where: T = trip ends, Ln = natural logarithm, and X = number of dwelling units

[b] 38% peak hour residential transit reduction based on trip generation surveys at Bay Area TODs adjacent to BART stations; confirmed by data presented in *Recommended Trip Generation Adjustments for Transit-Oriented Developments in Oakland (Dowling Associates, April 2006),* as well as *Bay Area Transportation Surveys* (BATS) 2000 data for households within ½ mile of BART stations. Transit reduction for daily trip generation (19%) is lower to account for lower transit mode share for non-work trips.

[c] Daily and PM trip generation based on the rates for Specialty Commercial (Land Use 814) in ITE *Trip Generation*, as presented below.

Daily Rate: (T) = 44.32 (X)
PM Rate: (T) = 2.71 (X) (inbound = 44%, outbound = 56%)
Where: T = trip ends and X = 1,000 square feet
AM trip generation based on PM trip rate, with reversed inbound/outbound splits.

[d] Commercial transit reduction based on TOD literature on commercial trips, including *Travel Characteristics of Transit-Oriented Development in California* (Lund, Cervero, and Wilson, 2004*)*, and *Ridership Impacts of Transit-Focused Development in California (*Cervero, 1994).

[e] Trip generation based on the regression equations for General Office (Land Use 710) in ITE *Trip Generation*, as presented below.

Daily Equation: Ln (T) = 0.77 Ln(X) + 3.65
AM Equation: Ln (T) = 0.80 Ln(X) + 1.55 (inbound = 88%, outbound = 12%)
PM Equation: (T) = 1.12(X) + 78.81 (inbound = 17%, outbound = 83%)
Where: T = trip ends, Ln = natural logarithm, and X = Thousands of square feet.

[f] Office transit reduction based on TOD literature on office trips, including *Travel Characteristics of Transit-Oriented Development in California (*Lund, Cervero, and Wilson, 2004)*,* and *Ridership Impacts of Transit-Focused Development in California (*Cervero, 1993).

[g] Trip generation based on the average rates for Day Care Center (Land Use 565) in ITE *Trip Generation*, as presented below.

Daily Rate: (T) = 79.26 (X)
AM Rate: (T) = 12.79 (X) (inbound = 53%, outbound = 47%)
PM Rate: (T) = 13.18 (X) (inbound = 47%, outbound = 53%)
Where: T = trip ends and X = 1,000 square feet

[h] The project includes removing approximately 300 of the existing 618 parking spaces in the BART lot. In the AM peak hour, any change in trips to the parking lot will most likely continue to occur before the peak hour. To be conservative, we assume that BART patrons currently entering and exiting the lot in the PM peak hour will continue to do so.

Source: Fehr & Peers, 2007.

Table V-20 Existing Plus Increased Commercial Alternative Intersection Level of Service Summary

No.	Intersection	Traffic Control	Time Period	Existing No Project		Existing Plus Commercial Alternative		Significance Yes/No
				LOS	Delay	LOS	Delay	
1	Shattuck Avenue/52nd Street	Signal	AM PM	D D	54.3 51.3	D D	49.9 36.1	No No
2	Telegraph Avenue/52nd Street/ Claremont Avenue	Signal	AM PM	B B	17.7 18.8	B C	17.8 20.2	No No
3	Telegraph Avenue/51st Street	Signal	AM PM	D D	39.1 47.1	D D	39.2 47.5	No No
4	Martin Luther King Jr. Way/ 47th Street/Westbound SR-24 On-Ramp	Signal	AM PM	C B	26.8 11.0	C B	32.2 11.3	No No
5	Martin Luther King Jr. Way/ 45th Street	Signal	AM PM	A A	9.0 9.0	A A	9.0 9.1	No No
6	Telegraph Avenue/45th Street	Signal	AM PM	A A	9.4 6.6	A A	9.2 6.6	No No
7	Market Street/40th Street	Signal	AM PM	B C	17.6 25.0	B C	17.8 25.3	No No
8	West Street/40th Street	Signal	AM PM	B B	13.8 17.4	B B	13.8 17.6	No No
9	Martin Luther King Jr. Way/ 40th Street	Signal	AM PM	B C	13.9 19.9	B B	14.0 16.7	No No
10	Frontage Road/40th Street	SSSC/ Signal[a]	AM PM	B B	10.2 13.8	B B	12.0 11.2	No No
11	BART parking access (west)/ 40th Street	SSSC	AM PM	B B	13.8 17.5	N/A	N/A	No No
12	BART parking access (east)/ 40th Street	SSSC	AM PM	B B	14.6 17.9	N/A	N/A	No No
13	Telegraph Avenue/40th Street	Signal	AM PM	C C	23.8 28.6	B B	17.8 19.7	No No
14	BART parking access/ Telegraph Avenue	SSSC	AM PM	C C	19.3 21.4	N/A	N/A	No No
15	Telegraph Avenue/38th Street	SSSC	AM PM	B C	14.8 21.6	B C	14.6 20.8	No No
16	Market Street/ MacArthur Boulevard	Signal	AM PM	B C	16.8 31.6	B C	16.9 34.7	No No
17	West Street/ MacArthur Boulevard	Signal	AM PM	B B	12.3 14.1	B B	12.6 14.5	No No
18	Martin Luther King Jr. Way/ MacArthur Boulevard	Signal	AM PM	A B	9.0 11.5	B B	10.0 13.3	No No
19	Frontage Road/ MacArthur Boulevard	SSSC/ Signal[a]	AM PM	B B	14.6 15.7	A B	6.4 12.4	No No
20	Telegraph Avenue/ MacArthur Boulevard	Signal	AM PM	B B	18.8 14.4	B B	18.7 19.0	No No
21	Webster Street/ MacArthur Boulevard	Signal	AM PM	A B	8.7 11.4	A B	8.8 11.5	No No
22	Broadway/ MacArthur Boulevard	Signal	AM PM	D D	54.7 42.0	D D	54.5 42.0	No No

Table V-20 Existing Plus Increased Commercial Alternative Intersection Level of Service Summary

No.	Intersection	Traffic Control	Time Period	Existing No Project		Existing Plus Commercial Alternative		Significance Yes/No
				LOS	Delay	LOS	Delay	
23	Telegraph Avenue/34th Street	Signal	AM PM	A B	6.8 13.0	A B	7.8 13.8	No No
24	Telegraph Avenue/27th Street	Signal	AM PM	C C	23.1 21.8	C C	24.0 20.6	No No
25	Telegraph Avenue/ Village Drive	Signal	AM PM	N/A	N/A	A B	9.6 15.6	No No

Notes: N/A = Intersection does not exist under this scenario.
Bold indicates significant impact.
The LOS/Delay for Side-Street Stop-Control (SSSC) intersections represents the worst movement or approach; for Signalized intersections, the LOS/Delay represents overall intersection.
* The average delay of a critical movement would increase by more than 6 seconds.
[a] Intersection is currently side-street stop-controlled, but will be signalized as part of the project.
Source: Fehr & Peers, 2007.

Commercial Alternative would not result in CO hot-spots, similar to the proposed project, as shown in Table V-23.

The Increased Commercial Alternative would not conflict with the Bay Area 2005 Ozone Strategy. The daily increase in emissions associated with the Increased Commercial Alternative operational and area sources is identified in Table V-24 for reactive organic gases (ROG) and nitrogen oxides (NOx) (two precursors of ozone) and coarse particle matter (PM10). The BAAQMD has established thresholds of significance for ozone precursors and PM10 of 80 pounds per day; however, they have not established a threshold for emissions of PM2.5 or CO2. Emissions for this alternative shown in Table V-24 would not exceed these thresholds of significance for ROG, NOx, and PM10, and therefore, the Increased Commercial Alternative would not have a significant effect on regional air quality.

e. Noise and Vibration. Noise and vibration impacts related to the Increased Commercial Alternative would not differ substantially from the proposed project. Noise sensitive receptors would be located at approximately the same distance from SR-24 as the proposed project. As shown in Tables V-25 through V-27, modeled traffic noise levels of affected roadway segments for this alternative would increase slightly over without the project conditions, similar to the proposed project. Traffic volumes and noise levels for traffic on SR-24 and I-580 are expected to remain the same as those of the proposed project. This alternative would result in similar BART noise and ground-borne vibration impacts as the proposed project. Short-term construction related noise impacts would also be similar to those associated with the proposed project. Implementation of the City's standard conditions of approval as part of the project would reduce the Increased Commercial Alternative's noise and vibration impacts to a less-than-significant level.

Table V-21 Cumulative Year 2015 Baseline Intersection Level of Service Summary (Increased Commercial Alternative)

No.	Intersection	Traffic Control	Time Period	2015 No Project LOS	2015 No Project Delay	2015 Plus Commercial Alternative LOS	2015 Plus Commercial Alternative Delay	Significance Yes/No
1	Shattuck Avenue/ 52nd Street	Signal	AM PM	E D	61.1 42.5	E D	61.5 40.2	No No
2	Telegraph Avenue/ 52nd Street/Claremont Avenue	Signal	AM PM	C D	25.1 37.3	C D	26.3 40.7	No No
3	Telegraph Avenue/ 51st Street	Signal	AM PM	E E	65.5 64.6	E **E**	68.1 **67.9***	No **Yes**
4	Martin Luther King Jr. Way/ 47th Street/ Westbound SR-24 On-Ramp	Signal	AM PM	C B	32.8 13.7	D B	38.5 15.1	No No
5	Martin Luther King Jr. Way/ 45th Street	Signal	AM PM	A A	9.5 9.7	A A	9.6 9.8	No No
6	Telegraph Avenue/ 45th Street	Signal	AM PM	B A	12.1 10.0	B B	11.7 10.4	No No
7	Market Street/40th Street	Signal	AM PM	C C	20.0 25.1	C C	20.4 25.4	No No
8	West Street/40th Street	Signal	AM PM	B C	16.4 20.0	B C	15.8 21.7	No No
9	Martin Luther King Jr. Way/ 40th Street	Signal	AM PM	B B	14.8 18.9	B C	14.1 20.6	No No
10	Frontage Road/40th Street	Signal	AM PM	A B	7.2 10.1	B B	11.1 12.1	No No
11	BART parking access (west)/ 40th Street	SSSC	AM PM	B C	12.8 15.3	N/A	N/A	No No
12	BART parking access (east)/40th Street	SSSC	AM PM	B C	13.9 15.4	N/A	N/A	No No
13	Telegraph Avenue/ 40th Street	Signal	AM PM	C D	29.1 44.2	C D	28.0 41.6	No No
14	BART parking access/ Telegraph Avenue	SSSC	AM PM	E D	40.4 28.2	N/A	N/A	No No
15	Telegraph Avenue/ 38th Street	SSSC	AM PM	C F	15.6 81.3	C F	17.2 92.1	No No
16	Market Street/ MacArthur Boulevard	Signal	AM PM	D D	38.9 53.6	D **E**	41.5 **56.2**	No **Yes**
17	West Street/ MacArthur Boulevard	Signal	AM PM	B B	14.7 17.0	B B	14.6 18.4	No No
18	Martin Luther King Jr. Way/ MacArthur Boulevard	Signal	AM PM	A B	9.1 14.7	B B	11.1 16.1	No No
19	Frontage Road/ MacArthur Boulevard	SSSC/ Signal [a]	AM PM	B C	14.8 21.6	A B	5.0 12.7	No No
20	Telegraph Avenue/ MacArthur Boulevard	Signal	AM PM	C D	21.7 39.5	C D	25.7 42.0	No No
21	Webster Street/ MacArthur Boulevard	Signal	AM PM	B B	10.3 12.2	B B	10.3 12.3	No No

Table V-21 Cumulative Year 2015 Baseline Intersection Level of Service Summary (Increased Commercial Alternative)

No.	Intersection	Traffic Control	Time Period	2015 No Project		2015 Plus Commercial Alternative		Signifi-cance Yes/No
				LOS	Delay	LOS	Delay	
22	Broadway/ MacArthur Boulevard	Signal	AM PM	D E	47.7 60.5	D E	47.8 60.6	No No
23	Telegraph Avenue/ 34th Street	Signal	AM PM	A B	9.4 15.5	B B	10.1 14.9	No No
24	Telegraph Avenue/ 27th Street	Signal	AM PM	C C	24.8 23.7	C C	24.9 24.0	No No
25	Telegraph Avenue/ Village Drive	Signal	AM PM	N/A	N/A	B B	15.8 10.1	No No

Notes: N/A = Intersection does not exist under this scenario.
Bold indicates significant impact.
The LOS/Delay for Side-Street Stop-Control (SSSC) intersections represents the worst movement or approach; for Signalized intersections, the LOS/Delay represents overall intersection.
* The average delay of a critical movement would increase by more than 6 seconds.
[a] Intersection is currently side-street stop-controlled, but will be signalized as part of the project.

Source: Fehr & Peers, 2007.

f. Hydrology and Water Quality. The Increased Commercial Alternative involves the same development program as the proposed project with the exception of removing 200 residential units and introducing 172,000 square feet commercial office uses within the Building A, a four- to six-story building. This alternative would result in similar amount of runoff that could affect stormwater conveyance systems. As with the proposed project, construction workers and the public would be exposed to potential contaminants in the soil and groundwater related to dewatering on-site.

All hydrology and water quality related standard conditions for the proposed project would be applicable to the Increased Commercial Alternative. As is the case with the proposed project, the incorporation of the standard conditions, which are mandatory City requirements, would reduce Hydrology and Water Quality impacts to less than significant.

No increase in significance to the hydrology and water impacts identified for the proposed project, and no significant hydrology and water impacts would result from this alternative.

g. Geology, Soils, and Seismicity. Under this alternative, grading activities and building foundations would be subject to similar geologic and seismic conditions and constraints as the proposed project. An earthquake on a nearby fault could result in strong seismic shaking at the project site. The surface and near surface site materials are classified as Urban Land, which is a man-made soil type consisting of various grades of un-engineered fill, possibly containing debris. The primary geologic concerns for the site are direct damage

Table V-22 Cumulative Year 2030 Baseline Intersection Level of Service Summary (Increased Commercial Alternative)

No.	Intersection	Traffic Control	Time Period	Cumulative (2030) Without Project		Cumulative (2030) Plus Commercial Alternative		Significance Yes/No
				LOS	Delay	LOS	Delay	
1	Shattuck Avenue/52nd Street	Signal	AM PM	F D	82.4 48.7	F D	83.4 49.4	No No
2	Telegraph Avenue/52nd Street/ Claremont Avenue	Signal	AM PM	F E	>120 70.1	**F** **E**	**>120** **75.2**	**Yes** **Yes**
3	Telegraph Avenue/51st Street	Signal	AM PM	F F	>120 110.3	**F** **F**	**>120** **115.2**	**Yes** **Yes**
4	Martin Luther King Jr. Way/ 47th Street/Westbound SR-24 On-Ramp	Signal	AM PM	D C	39.3 31.6	D D	45.2 38.0	No No
5	Martin Luther King Jr. Way/ 45th Street	Signal	AM PM	B B	10.6 11.1	B B	10.7 11.2	No No
6	Telegraph Avenue/45th Street	Signal	AM PM	B C	16.8 26.7	B C	17.5 32.6	No No
7	Market Street/40th Street	Signal	AM PM	E D	63.3 35.9	**E** D	**65.9*** 37.0	**Yes** No
8	West Street/40th Street	Signal	AM PM	B D	18.1 52.8	B **E**	18.3 **59.0**	No **Yes**
9	Martin Luther King Jr. Way/ 40th Street	Signal	AM PM	B C	17.3 23.0	B C	17.8 30.8	No No
10	Frontage Road/40th Street	Signal	AM PM	A B	9.0 13.0	B B	10.7 15.2	No No
11	BART parking access (west)/ 40th Street	SSSC	AM PM	B C	13.5 15.7	N/A	N/A	No No
12	BART parking access (east)/ 40th Street	SSSC	AM PM	B C	14.6 15.6	N/A	N/A	No No
13	Telegraph Avenue/40th Street	Signal	AM PM	E F	74.9 92.2	**F** **F**	**86.1** **89.0***	**Yes** **Yes**
14	BART parking access/ Telegraph Avenue	SSSC	AM PM	F E	>90 47.0	N/A	N/A	No No
15	Telegraph Avenue/38th Street	SSSC	AM PM	C F	24.0 >90	D F	28.5 >120	No No
16	Market Street/ MacArthur Boulevard	Signal	AM PM	F F	>120 >120	**F** **F**	**>120** **>120**	**Yes** **Yes**
17	West Street/ MacArthur Boulevard	Signal	AM PM	D C	36.7 26.6	D C	37.1 26.9	No No
18	Martin Luther King Jr. Way/ MacArthur Boulevard	Signal	AM PM	B B	10.6 17.7	B C	13.9 25.3	No No
19	Frontage Road/ MacArthur Boulevard	SSSC/ Signal [a]	AM PM	C C	15.3 17.1	A B	6.2 18.7	No No
20	Telegraph Avenue/ MacArthur Boulevard	Signal	AM PM	D F	50.2 106.5	**E** **F**	**66.9** **111.4**	**Yes** **Yes**
21	Webster Street/ MacArthur Boulevard	Signal	AM PM	B B	12.7 14.1	B B	12.8 14.2	No No

Table V-22 Cumulative Year 2030 Baseline Intersection Level of Service Summary (Increased Commercial Alternative)

No.	Intersection	Traffic Control	Time Period	Cumulative (2030) Without Project LOS	Cumulative (2030) Without Project Delay	Cumulative (2030) Plus Commercial Alternative LOS	Cumulative (2030) Plus Commercial Alternative Delay	Significance Yes/No
22	Broadway/ MacArthur Boulevard	Signal	AM	F	82.5	**F**	**84.3***	**Yes**
			PM	F	119.7	F	>120	No
23	Telegraph Avenue/34th Street	Signal	AM	B	11.8	B	12.0	No
			PM	C	21.7	C	21.7	No
24	Telegraph Avenue/27th Street	Signal	AM	D	46.8	D	50.1	No
			PM	D	40.2	D	45.4	No
25	Telegraph Avenue/ Village Drive	Signal	AM	N/A	N/A	B	19.8	No
			PM			C	20.5	No

Notes: N/A = Intersection does not exist under this scenario.
Bold indicates significant impacts.
The LOS/Delay for Side-Street Stop-Control (SSSC) intersections represents the worst movement or approach; for Signalized intersections, the LOS/Delay represents overall intersection.
* The average delay of a critical movement would increase by more than 4 seconds.
[a] Intersection is currently side-street stop-controlled, but will be signalized as part of the project.

Source: Fehr & Peers, 2007.

to structures from seismic shaking, seismically induced liquefaction and attendant ground failure, expansive soils, and settlement or differential settlement.

All geology, soils and seismicity related standard conditions for the proposed project would be applicable to the Increased Commercial Alternative. These standard conditions include Erosion and Sediment Control Plan, Soils Report, and Geotechnical Report. As is the case with the proposed project, the incorporation of the standard conditions, which are mandatory City requirements, would reduce Geology, Soils and Seismicity impacts to less-than-significant. No increase in significance to the geology, soils and seismicity impacts identified for the proposed project, and no significant geology, soils and seismicity impacts would result from this alternative.

h. Public Health and Hazards. The Increased Commercial Alternative involves the same development program as the proposed project with the exception of removing 200 residential units and introducing 172,000 square feet commercial office uses within the Building A, a four- to six-story building. As such, this alternative would have similar impacts to public health and hazards via disposal of hazardous materials, or creation of a significant hazard to the public or the environment through reasonable foreseeable upset or accident conditions involving the release of hazardous materials into the environment.

Table V-23 CO Concentrations for Increase Commercial Alternative Conditions

Intersection	Receptor Distance to Road Centerline (Meters)	Existing Plus Tower Alternative 1-Hr/8-Hr CO Concentration (ppm)	Cumulative Year 2015 Baseline Plus Tower Alternative 1-Hr/8-Hr CO Concentration (ppm)	Cumulative Year 2030 Baseline Plus Tower Alternative 1-Hr/8-Hr CO Concentration (ppm)	Exceeds State Standards	
					1-Hr	8-Hr
M.L. King Jr. Way and 45th Street	11	4.2/3.0	3.8/2.8	3.6/2.6	No	No
	11	4.1/3.0	3.8/2.8	3.5/2.5	No	No
	11	4.1/3.0	3.8/2.8	3.5/2.5	No	No
	10	4.1/3.0	3.7/2.7	3.5/2.5	No	No
Telegraph Avenue and 45th Street	11	5.0/3.6	4.4/3.2	3.8/2.8	No	No
	11	5.0/3.6	4.4/3.2	3.8/2.8	No	No
	10	5.0/3.6	4.3/3.1	3.8/2.8	No	No
	10	5.0/3.6	4.3/3.1	3.8/2.8	No	No
M.L. King Jr. Way and 40th Street	14	5.2/3.7	4.4/3.2	3.8/2.8	No	No
	14	5.2/3.7	4.4/3.2	3.8/2.8	No	No
	14	5.2/3.7	4.4/3.2	3.8/2.8	No	No
	14	5.2/3.7	4.3/3.1	3.8/2.8	No	No
BART Access and 40th Street	14	4.9/3.5	4.2/3.0	3.7/2.7	No	No
	14	4.7/3.4	4.0/2.9	3.7/2.7	No	No
	12	4.7/3.4	4.0/2.9	3.7/2.7	No	No
	12	4.6/3.3	4.0/2.9	3.7/2.7	No	No
Telegraph Avenue and 40th Street	14	5.4/3.9	4.6/3.3	3.9/2.8	No	No
	14	5.3/3.8	4.6/3.3	3.9/2.8	No	No
	14	5.3/3.8	4.5/3.2	3.9/2.8	No	No
	14	5.2/3.7	4.5/3.2	3.9/2.8	No	No
M.L. King Jr. Way and MacArthur Boulevard	14	4.5/3.2	4.2/3.0	3.8/2.8	No	No
	14	4.4/3.2	4.0/2.9	3.7/2.7	No	No
	14	4.4/3.2	4.0/2.9	3.7/2.7	No	No
	14	4.3/3.1	4.0/2.9	3.7/2.7	No	No
BART Access and MacArthur Boulevard	17	4.4/3.2	4.0/2.9	3.7/2.7	No	No
	14	4.4/3.2	4.0/2.9	3.7/2.7	No	No
	14	4.4/3.2	4.0/2.9	3.7/2.7	No	No
	14	4.4/3.2	3.9/2.8	3.7/2.7	No	No
Telegraph Avenue and MacArthur Boulevard	17	5.7/4.1	4.7/3.4	4.0/2.9	No	No
	14	5.6/4.0	4.7/3.4	4.0/2.9	No	No
	14	5.5/3.9	4.6/3.3	4.0/2.9	No	No
	14	5.4/3.9	4.5/3.2	3.9/2.8	No	No

Note: Includes ambient 1-hour concentration of 3.3 ppm and ambient 8-hour concentration of 2.4 ppm. Measured at the Alice Street, Oakland AQ Station for the years 2004 and 2005, and at the Chapel Way, Fremont AQ Station for the year 2006.
Source: LSA Associates, Inc., 2007.

Table V-24 Increased Commercial Alternative Regional Emissions in Pounds Per Day

	Reactive Organic Gases	Nitrogen Oxides	PM10	PM2.5	CO2
Operation (Vehicle) Emissions	27.5	19.3	42.4	8.1	23,994.4
Area Source Emissions	19.4	3.3	0.03	0.03	4,093.1
Total Regional Emissions	**46.9**	**22.6**	**42.5**	**8.1**	**28,087.5**
BAAQMD Significance Threshold	80.0	80.0	80.0	NA	NA
Exceed?	No	No	No	NA	NA

Source: LSA Associates, Inc., 2007.

Table V-25 Existing with Increased Commercial Alternative Traffic Noise Levels, dBA

Roadway Segment	ADT [a]	Center-line to 70 Ldn (feet)	Center-line to 65 Ldn (feet)	Center-line to 60 Ldn (feet)	Ldn (dBA) 50 Feet from Centerline of Outer-most Lane	Increase over Existing Conditions
M.L. King Jr. Way – 45th Street to 40th Street	8,600	< 50	< 50	91	62.0	0.2
Telegraph Avenue – 45th Street to 40th Street	21,000	< 50	64	129	63.9	0.2
40th Street - West Street to M.L. King Jr. Way	15,300	< 50	65	133	64.1	0.2
40th Street - M.L. King Jr. Way to BART Access	18,400	< 50	73	150	64.9	0.3
40th Street - BART Access to Telegraph Avenue	17,000	< 50	70	143	64.5	0.0
M.L. King Jr. Way – 40th Street to MacArthur Boulevard	8,500	< 50	< 50	90	62.0	0.3
Telegraph Avenue – 40th Street to 38th Street	19,100	< 50	60	121	63.5	0.4
Telegraph Avenue – 38th Street to MacArthur Boulevard	19,400	< 50	61	123	63.5	0.3
MacArthur Boulevard - West Street to M.L. King Jr. Way	12,500	< 50	61	118	62.8	0.1
MacArthur Boulevard - BART Access to Telegraph Avenue	14,400	< 50	66	129	63.4	0.5

Note: The shaded areas in the tables indicate the roadway segments adjacent to the project site.

[a] ADT=Average Daily Trips calculated from traffic volumes in the Fehr & Peers TIA. Model rounds ADT up to 100 trips.

Source: LSA Associates, Inc., 2007.

Table V-26 Cumulative Year 2015 Baseline Plus Increased Commercial Alternative Traffic Noise Levels, dBA

Roadway Segment	ADT	Center-line to 70 Ldn (feet)	Center-line to 65 Ldn (feet)	Center-line to 60 Ldn (feet)	Ldn (dBA) 50 Feet from Centerline of Outer-most Lane	Increase Over Cumulative Year 2015 Baseline Without Project Conditions
M.L. King Jr. Way – 45th Street to 40th Street	10,400	< 50	< 50	103	62.8	0.2
Telegraph Avenue – 45th Street to 40th Street	27,100	< 50	74	152	65.0	0.2
40th Street – West Street to M.L. King Jr. Way	17,900	< 50	72	148	64.8	0.3
40th Street – M.L. King Jr. Way to BART Access	20,900	< 50	79	163	65.4	0.2
40th Street – BART Access to Telegraph Avenue	19,500	< 50	75	156	65.1	0.0
M.L. King Jr. Way – 40th Street to MacArthur Boulevard	10,100	< 50	< 50	101	62.7	0.2
Telegraph Avenue – 40th Street to 38th Street	24,400	< 50	69	142	64.5	0.3
Telegraph Avenue – 38th Street to MacArthur Boulevard	24,700	< 50	70	143	64.6	0.3
MacArthur Boulevard – West Street to M.L. King Jr. Way	17,600	< 50	73	147	64.3	0.1
MacArthur Boulevard – BART Access to Telegraph Avenue	19,600	< 50	78	157	64.8	0.5

Source: LSA Associates, Inc., 2007.

i. Public Services. Although the Increased Commercial Alternative, like the proposed the project, would not result in significant impacts, it should be noted that the Increased Commercial Alternative would still have less impacts on public services due to the decrease in units, which would result in a decrease in students generated by the project, a decrease in demand for park and recreation activities and a decrease in domestic calls for police and fire service.

The Increased Commercial Alternative would result in a significant amount of development on the project site and all public service related standard conditions that apply to the proposed project would also apply to this alternative. These standard conditions include: Fire Safety Phasing Plan and Conformance with Other Requirements (including all applicable federal, state, regional and/or local codes, requirements, regulations, and guidelines). As is the case with the proposed project, the incorporation of the standard conditions, which are mandatory City requirements, would reduce public service impacts to less-than-significant.

Table V-27 Cumulative Year 2030 Baseline with Increased Commercial Alternative Traffic Noise Levels, dBA

Roadway Segment	ADT	Center-line to 70 Ldn (feet)	Center-line to 65 Ldn (feet)	Center-line to 60 Ldn (feet)	Ldn (dBA) 50 feet from Centerline of Outermost Lane	Increase over Cumulative Year 2030 Baseline No Project Conditions
M.L. King Jr. Way – 45th Street to 40th Street	12,800	< 50	57	118	63.7	0.1
Telegraph Avenue – 45th Street to 40th Street	30,600	< 50	79	165	65.5	0.1
40th Street – West Street to M.L. King Jr. Way	24,200	< 50	86	180	66.1	0.2
40th Street – M.L. King Jr. Way to BART Access	27,100	< 50	92	193	66.6	0.2
40th Street – BART Access to Telegraph Avenue	25,700	< 50	89	187	66.3	0.0
M.L. King Jr. Way – 40th Street to MacArthur Boulevard	12,000	< 50	55	113	63.5	0.3
Telegraph Avenue – 40th Street to 38th Street	29,400	< 50	78	161	65.3	0.2
Telegraph Avenue – 38th Street to MacArthur Boulevard	30,100	< 50	79	163	65.4	0.2
MacArthur Boulevard – West Street to M.L. King Jr. Way	25,900	< 50	91	189	66.0	0.1
MacArthur Boulevard – BART Access to Telegraph Avenue	27,800	< 50	95	197	66.3	0.3

Source: LSA Associates, Inc., 2007.

No increase in significance to the public service impacts identified for the proposed project, and no significant public service impacts would result from this alternative.

j. Utilities. The Increased Commercial Alternative involves the same development program as the proposed project with the exception of removing 230 residential units and introducing 172,000 square feet of commercial office uses within Building A, a four- to six-story building.

Although the Increased Commercial Alternative, like the proposed the project, would not result in significant impacts, it should be noted that the Increased Commercial Alternative would generate less wastewater (see Table V-28), water demand, and solid waste (commercial uses generate half of the daily generation of residential uses). The project would have similar impacts on energy and storm drainage.

Table V-28 Increased Commercial Alternative Projected Wastewater Generation

Proposed Use	Number of Units/ Square Footage	Generation Rate	Total GPD[a]
1-Bedroom Condo	110 Units	150 gpd per unit	16,500
2-Bedroom Condo	275 Units	200 gpd per unit	55,000
3-Bedroom Condo	90 Units	250 gpd per unit	22,500
Commercial	27,000 Sq.Ft.	100 gpd per 1,000 Sq.Ft.	2,700
Community Space	5,000 Sq.Ft.	100 gpd per 1,000 Sq.Ft.	500
Commercial Office	172,000	200 gpd per 1,000 Sq.Ft.	34,400
Total			***131,600***

Source: RRM Design Group, 2007.

Given the level of development that would occur under the Increased Commercial Alternative, all utility related standard conditions that apply to the proposed project would also apply to this alternative. These standard conditions include: Fire Safety Phasing Plan and Conformance with Other Requirements (including all applicable federal, State, regional and/or local codes, requirements, regulations, and guidelines). As is the case with the proposed project, the incorporation of the standard conditions, which are mandatory City requirements, would reduce utility impacts to a less-than-significant level. No increase in significance to the utility impacts identified for the proposed project, and no significant utility impacts would result from this alternative.

k. Cultural and Paleontological Resources. The Increased Commercial Alternative would have impacts similar to the proposed project for cultural resources via grading and other ground disturbing activities because, as described in Chapter IV.K, Cultural and Paleontological Resources, the project area is sensitive for subsurface historical, archaeological, or paleontological resources, which have the potential to be unearthed during site preparation and construction.

Because the Increased Commercial Alternative would include grading and other ground disturbing activities, and further because the project area is sensitive for resources identified above, this alternative would be subject to the same standard conditions as the proposed project. As is the case with the proposed project, the incorporation of the standard conditions, which are mandatory City requirements, would reduce cultural and paleontological resource impacts to less-than-significant. No increase in significance to the cultural impacts identified for the proposed project, and no significant cultural impacts would result from this alternative.

l. Aesthetic Resources. The physical development of the Increased Commercial alternative would be essentially the same as the proposed project.

Visual simulations showing the Increased Commercial alternative's scale, massing and conceptual appearance as seen from six representative public viewing locations are presented in Figures V-9A through V-9F (at the end of this chapter). As shown in these simulations, this alternative would represent a substantial increase in the amount of visible building mass and street frontage seen on the site similar to the proposed project. The alternative would be highly visible from some locations along public streets within the project vicinity including 40th Street, West MacArthur Boulevard, Telegraph Avenue and SR-24.

As with the proposed project, the height of the new development, particularly the garage, could be somewhat overbearing when compared to existing development. However, the urban design fabric surrounding the site supports this scale of development including street widths, some of the taller historic and new developments located along the Telegraph Avenue corridor between Downtown and 51st Avenue.

Like the project, the development proposed under this alternative would provide additional sources of glare and light. Implementation of Standard Condition of Approval, AES-1: Lighting Plan would ensure that the use of reflective exterior materials is minimized and that proposed reflective material would not create additional daytime or nighttime glare.

m. Alternative Variants. Below is a discussion of Increased Commercial Alternative with two alternative variants: Full BART Replacement Parking and With a Residential Parking Permit Program (RPP).

- **Full BART Replacement Parking**. The traffic analysis for the proposed project (see Transportation and Circulation Section IV.C) did not reduce project trip generation to account for reduced BART parking. Thus, traffic conditions under the Increased Commercial Alternative with the Full BART Replacement Parking variant would be similar to the analyzed Increased Commercial Alternative. The inclusion of Full BART Replacement Parking option within this alternative would not result in any new or significantly different impacts than those identified for the Tower Alternative without full BART replacement parking except for the area of aesthetics. The impacts related to aesthetics if this variant is implemented would the same as what is described for the Full BART Replacement Alternative described and analyzed below in Section C.1.
- **With a Residential Parking Permit Program (RPP).** As on-site BART parking is reduced, BART patrons who currently drive and park on-site may be attracted to park in the surrounding residential neighborhoods. This would reduce the on-street parking available for local residents. A Residential Parking Permit program (RPP) that would cover approximately a ¼-mile radius around the project site could be used as a tool to offset potential parking impacts in the surrounding neighborhood associated with the reduction in on-site BART parking. The RPP would restrict on-street parking by non-residents to fewer than two hours during the weekdays. Since BART commuters would park longer than two hours, on-street parking would no longer be available to them.

Parking would still be available for Telegraph Avenue commercial district shoppers, since they typically park for less than two hours. Implementation of a RPP program would cause a significant reduction in off-site parking supply for BART patrons. It has been estimated that as many as 216 BART patrons currently park on residential streets adjacent to the station. It is estimated that about 25 percent of BART patrons who currently drive and park in the surrounding neighborhood would shift to other travel modes to access the BART Station if on-street parking is no longer available to them (see Appendix F. The rest may no longer use the MacArthur BART Station. The reduction in off-site parking supply for BART patrons would result in fewer vehicles driving to and from the MacArthur BART Station and a reduction in number and magnitude of the identified project impacts at intersections. The potential secondary impacts of this alternative variant would be the same as those described for the project variant. See pages 215 and 216 of Section IV.C, Transportation, Circulation and Parking for a discussion of potential secondary impacts associated with implementation of an RPP program.

D. ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires the identification of the environmentally superior alternative in an EIR. The No Project/No Build Alternative is considered the environmentally superior alternative in the strict sense that environmental impacts associated with its implementation would be the least of all the scenarios examined (including the proposed project). To maintain the project site at baseline conditions would avoid each of the significant impacts that would result from the proposed project. It is also important to note that while this alternative would be environmentally superior in the technical sense that contribution to these aforementioned impacts would not occur, the No Project/No Build Alternative would also fail to achieve any of the project's objectives. Redevelopment of the BART surface parking lot and surrounding underutilized parcels, with a high quality transit village development would be consistent with the City's General Plan and the Broadway/MacArthur/San Pablo Redevelopment Plan. The redevelopment of the site would improve the image and quality of life in the City of Oakland, enhance the City's economic base, complement the existing and proposed uses in the North Oakland Neighborhood, provide improved access to the MacArthur BART Station, and contribute to employment opportunities during construction.

In cases like this where the No Project/No Build Alternative is the environmentally superior alternative, CEQA requires that the second most environmentally superior alternative be identified. Comparison of the environmental impacts associated with each alternative as described above, indicates that the Mitigated Reduced Building/Site Alternative would generally represent the next-best alternative in terms of the fewest impacts.

Table V-29 Summary of Project and Alternative Impacts

Environmental Impacts	Level of Significance Without Mitigation							Level of Significance With Mitigation or Standard COA						
	Project	No Project/ No Build	Existing Zoning	Mitigated Reduced Building/ Site	Proposed Project w/Full BART	Tower	Inc. Com.	Project	No Project/ No Build	Existing Zoning	Mitigated Reduced Building/ Site	Proposed Project w/Full BART	Tower	Inc. Com.
A. LAND USE														
No significant land use impacts would occur.														
B. PUBLIC POLICY														
No significant public policy impacts would occur.														
C. TRANSPORTATION, CIRCULATION AND PARKING														
No significant construction period transportation-related impacts would occur with implementation of the City Standard Conditions of Approval.	--	--	--	--	--	--	--	LTS	LTS	LTS	LTS	LTS	LTS	LTS
TRANS-1: The addition of project traffic would cause a significant impact at the Telegraph Avenue/51st Street intersection (#3) under Cumulative Year 2015 Baseline Plus Project conditions. The project would contribute to LOS E operations during the PM peak hour and increase critical movement average delay by more than 6 seconds.	S	--	S	S	S	S	S	LTS	--	LTS	LTS	LTS	LTS	LTS
TRANS-2: The addition of project traffic would cause a significant impact at the Market Street/MacArthur Boulevard intersection (#16) under Cumulative Year 2015 Baseline Plus Project conditions. The project would degrade intersection operations from LOS D to LOS E during the PM peak hour.	S	--	S	--	S	S	S	LTS	--	LTS	--	LTS	LTS	LTS
TRANS-3: The addition of project traffic would cause a significant impact at the Telegraph Avenue/52nd Street and Claremont Avenue intersection (#2) under Cumulative 2030 Baseline Plus Project conditions. The project would contribute to LOS F operations and increase intersection average delay by more than 2 seconds during the AM peak hour; would contribute to LOS E operations and increase critical movement average delay by more than 6 seconds during the PM peak hour.	S	--	S	S	S	S	S	LTS	--	LTS	LTS	LTS	LTS	LTS

Table V-29 Summary of Project and Alternative Impacts

Environmental Impacts	Level of Significance Without Mitigation							Level of Significance With Mitigation or Standard COA						
	Project	No Project/ No Build	Existing Zoning	Mitigated Reduced Building/ Site	Proposed Project w/Full BART	Tower	Inc. Com.	Project	No Project/ No Build	Existing Zoning	Mitigated Reduced Building/ Site	Proposed Project w/Full BART	Tower	Inc. Com.
TRANS-4: The addition of project traffic would cause a significant impact at the Telegraph Avenue/51st Street intersection (#3) under Cumulative Year 2030 Baseline Plus Project conditions. The project would contribute to LOS F operations during both AM and PM peak hours; would increase critical movement average delay by more than 4 seconds during the AM peak hour; and would increase intersection average delay by more than 2 seconds during the PM peak hour.	S	--	S	S	S	S	S	SU	--	SU	LTS	SU	SU	SU
TRANS-5: The addition of project traffic would cause a significant impact at the West Street/40th Street intersection (#8) under Cumulative Year 2030 Baseline Plus Project conditions. The project would degrade intersection operations from LOS D to LOS E in the PM peak hour.	S	--	S	S	S	S	S	LTS	--	LTS	LTS	LTS	LTS	LTS
TRANS-6: The addition of project traffic would cause a significant impact at the Telegraph Avenue/40th Street intersection (#13) under Cumulative Year 2030 Baseline Plus Project conditions. During the PM peak hour, the project would contribute to LOS F operations and would increase critical movement average delay by more than 4 seconds.	S	--	S	S	S	S	S	LTS	--	LTS	LTS	LTS	LTS	LTS
TRANS-7: The addition of project traffic would cause a significant impact at the Market Street/MacArthur Boulevard intersection (#16) under Cumulative Year 2030 Baseline Plus Project conditions. The project would contribute to LOS F operations, and would increase intersection average delay by more than 2 seconds, during both AM and PM peak hours.	S	--	S	S	S	S	S	LTS	--	LTS	LTS	LTS	LTS	LTS
TRANS-8: The addition of project traffic would cause a significant impact at the Telegraph Avenue/MacArthur Boulevard intersection (#20) under Cumulative Year 2030 Baseline Plus Project conditions. The project would degrade intersection operations from LOS D to LOS E in the AM peak hour.	S	--	S	S	S	S	S	LTS	--	LTS	LTS	LTS	LTS	LTS

Table V-29 Summary of Project and Alternative Impacts

Environmental Impacts	Level of Significance Without Mitigation							Level of Significance With Mitigation or Standard COA						
	Project	No Project/ No Build	Existing Zoning	Mitigated Reduced Building/ Site	Proposed Project w/Full BART	Tower	Inc. Com.	Project	No Project/ No Build	Existing Zoning	Mitigated Reduced Building/ Site	Proposed Project w/Full BART	Tower	Inc. Com.
TRANS-9: The addition of project traffic would cause a significant impact at the Broadway/ MacArthur Boulevard intersection (#22) under Cumulative Year 2030 Baseline Plus Project conditions. The project would contribute to LOS F operations and would increase intersection average delay by more than 2 seconds during the AM peak hour.	S	--	S	S	S	S	S	SU	--	SU	LTS	SU	SU	SU
D. Air Quality														
No significant construction-related air quality impacts would occur with implementation of the City Standard Conditions of Approval.	--	--	--	--	--	--	--	LTS	LTS	LTS	LTS	LTS	LTS	LTS
E. Noise and Vibration														
No significant construction-related noise and vibration impacts would occur with implementation of the City Standard Conditions of Approval.	--	--	--	--	--	--	--	LTS	LTS	LTS	LTS	LTS	LTS	LTS
F. Hydrology and Water Quality														
No significant hydrology and water quality impacts would occur with implementation of the City Standard Conditions of Approval.	--	--	--	--	--	--	--	LTS	LTS	LTS	LTS	LTS	LTS	LTS
G. Geology, Soils and Seismicity														
No significant geology, soils and seismicity impacts would occur with implementation of the City Standard Conditions of Approval.	--	--	--	--	--	--	--	LTS	LTS	LTS	LTS	LTS	LTS	LTS
H. Public Health and Hazards														
No significant public health and hazards impacts would occur with implementation of the City Standard Conditions of Approval.	--	--	--	--	--	--	--	LTS	LTS	LTS	LTS	LTS	LTS	LTS
I. Public Services														
No significant public services impacts would occur with implementation of the City Standard Conditions of Approval listed.	--	--	--	--	--	--	--	LTS	LTS	LTS	LTS	LTS	LTS	LTS

Table V-29 Summary of Project and Alternative Impacts

Environmental Impacts	Level of Significance Without Mitigation							Level of Significance With Mitigation or Standard COA						
	Project	No Project/ No Build	Existing Zoning	Mitigated Reduced Building/ Site	Proposed Project w/Full BART	Tower	Inc. Com.	Project	No Project/ No Build	Existing Zoning	Mitigated Reduced Building/ Site	Proposed Project w/Full BART	Tower	Inc. Com.
J. Utilities and Infrastructure														
No significant utilities and infrastructure impacts would occur with implementation of the City Standard Conditions of Approval.	--	--	--	--	--	--	--	LTS	LTS	LTS	LTS	LTS	LTS	LTS
K. Cultural and Paleontological Resources														
No significant cultural and paleontological resources impacts would occur with implementation of the City Standard Conditions of Approval.	--	--	--	--	--	--	--	LTS	LTS	LTS	LTS	LTS	LTS	LTS
L. Aesthetic Resources														
No significant lighting impacts would occur with implementation of the City Standard Conditions of Approval.	--	--	--	--	--	--	--	LTS	LTS	LTS	LTS	LTS	LTS	LTS

Existing view from West MacArthur Boulevard looking north to Entry Drive (Viewpoint 4)

Conceptual visual simulation of Full BART Replacement Parking Alternative

FIGURE V-6A

MacArthur Transit Village Project EIR
Full BART Replacement Parking Alternative Conceptual Visual Simulation

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

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Existing View from Highway 24 southbound towards the project site (Viewpoint 6)

Conceptual visual simulation of Full BART Replacement Parking Alternative

FIGURE V-6B

MacArthur Transit Village Project EIR
Full BART Replacement Parking Alternative Conceptual Visual Simulation

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

Existing View towards site from the MacArthur BART station platform (Viewpoint 5)

Conceptual visual simulation of Full BART Replacement Parking Alternative

FIGURE V-6C

MacArthur Transit Village Project EIR
Full BART Replacement Parking Alternative Conceptual Visual Simulation

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

Existing view of project site from the intersection of Telegraph Avenue and 40th Street (Viewpoint 1)

Conceptual visual simulation of Full BART Replacement Parking Alternative

FIGURE V-6D

MacArthur Transit Village Project EIR

Full BART Replacement Parking Alternative Conceptual Visual Simulation

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

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Existing view of site from Telegraph Avenue (viewport 2)

Conceptual visual simulation of Full BART Replacement Parking Alternative

FIGURE V-6E

MacArthur Transit Village Project EIR
Full BART Replacement Parking Alternative Conceptual Visual Simulation

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

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Existing view of site from the intersection of MacArthur Blvd. and Telegraph Avenue. (Viewport 3)

Conceptual visual simulation of Full BART Replacement Parking Alternative

FIGURE V-6F

MacArthur Transit Village Project EIR
Full BART Replacement Parking Alternative Conceptual Visual Simulation

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

Existing view from West MacArthur Boulevard looking north to Entry Drive (viewport 4)

Conceptual visual simulation of Tower Alternative

FIGURE V-7A

MacArthur Transit Village Project EIR
Tower Alternative Conceptual Visual Simulation

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

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Existing View from Highway 24 southbound towards the project site (Viewpoint 6)

Conceptual visual simulation of Tower Alternative

FIGURE V-7B

MacArthur Transit Village Project EIR
Tower Alternative Conceptual Visual Simulation

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

Existing view towards site from the MacArthur BART Station platform (Viewport 5)

Conceptual visual simulation of Tower Alternative

FIGURE V-7C

MacArthur Transit Village Project EIR
Tower Alternative Conceptual Visual Simulation

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

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Existing view of project site from the intersection of Telegraph Avenue and 40th Street (Viewpoint 1)

Conceptual visual simulation of Tower Alternative

FIGURE V-7D

MacArthur Transit Village Project EIR
Tower Alternative Conceptual Visual Simulation

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

Existing view of site from Telegraph Avenue (viewport 2)

Conceptual visual simulation of Tower Alternative

FIGURE V-7E

MacArthur Transit Village Project EIR
Tower Alternative Conceptual Visual Simulation

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

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Existing view of site from the intersection of MacArthur Blvd. and Telegraph Avenue. (Viewport 3)

Conceptual visual simulation of Tower Alternative

FIGURE V-7F

MacArthur Transit Village Project EIR
Tower Alternative Conceptual Visual Simulation

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

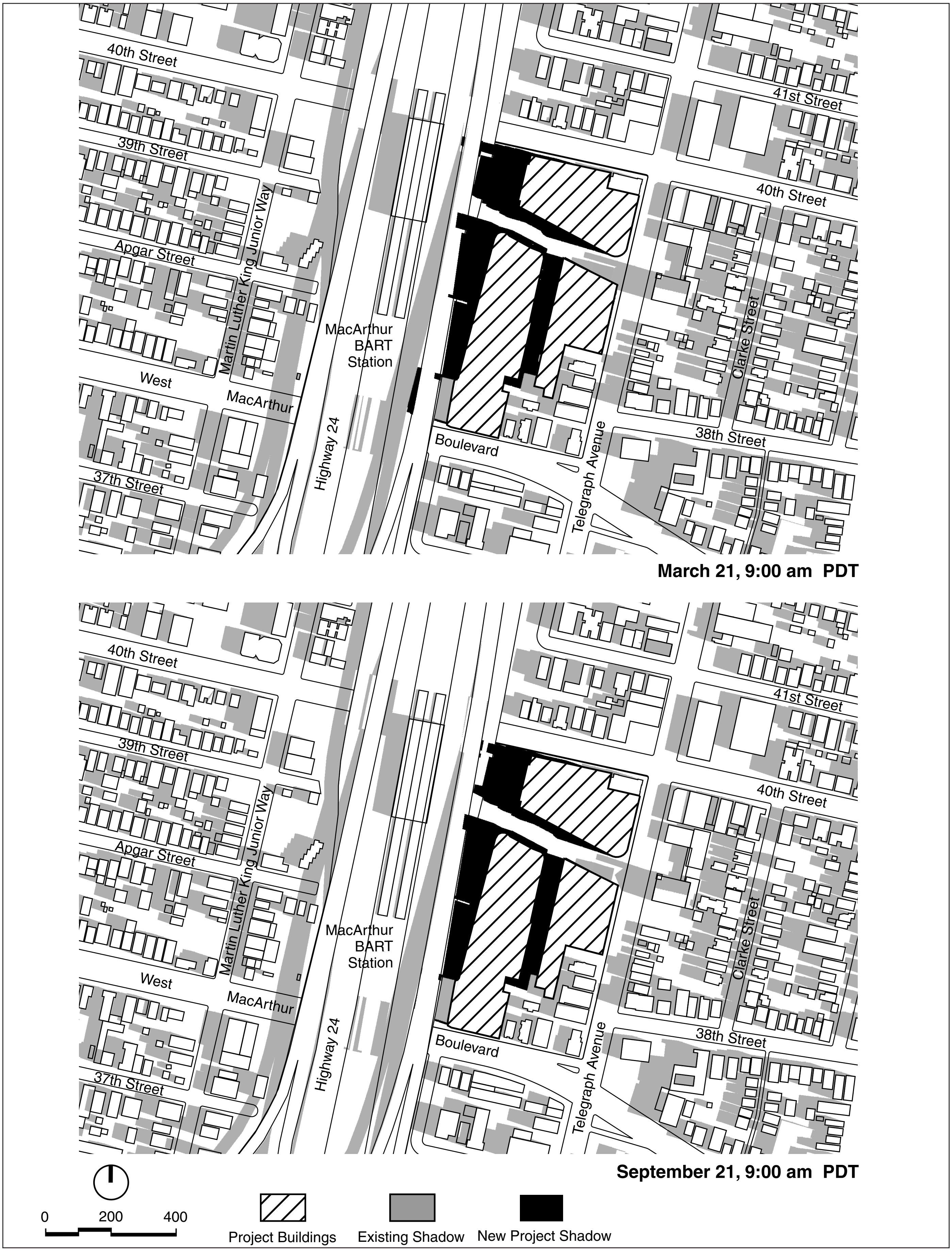

FIGURE V-8A

MacArthur Transit Village Project EIR
Tower Alternative Shadow Patterns

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

N:\2007\1407011 MacArthur BART Transit Village EIR\Documents\Background\Visual

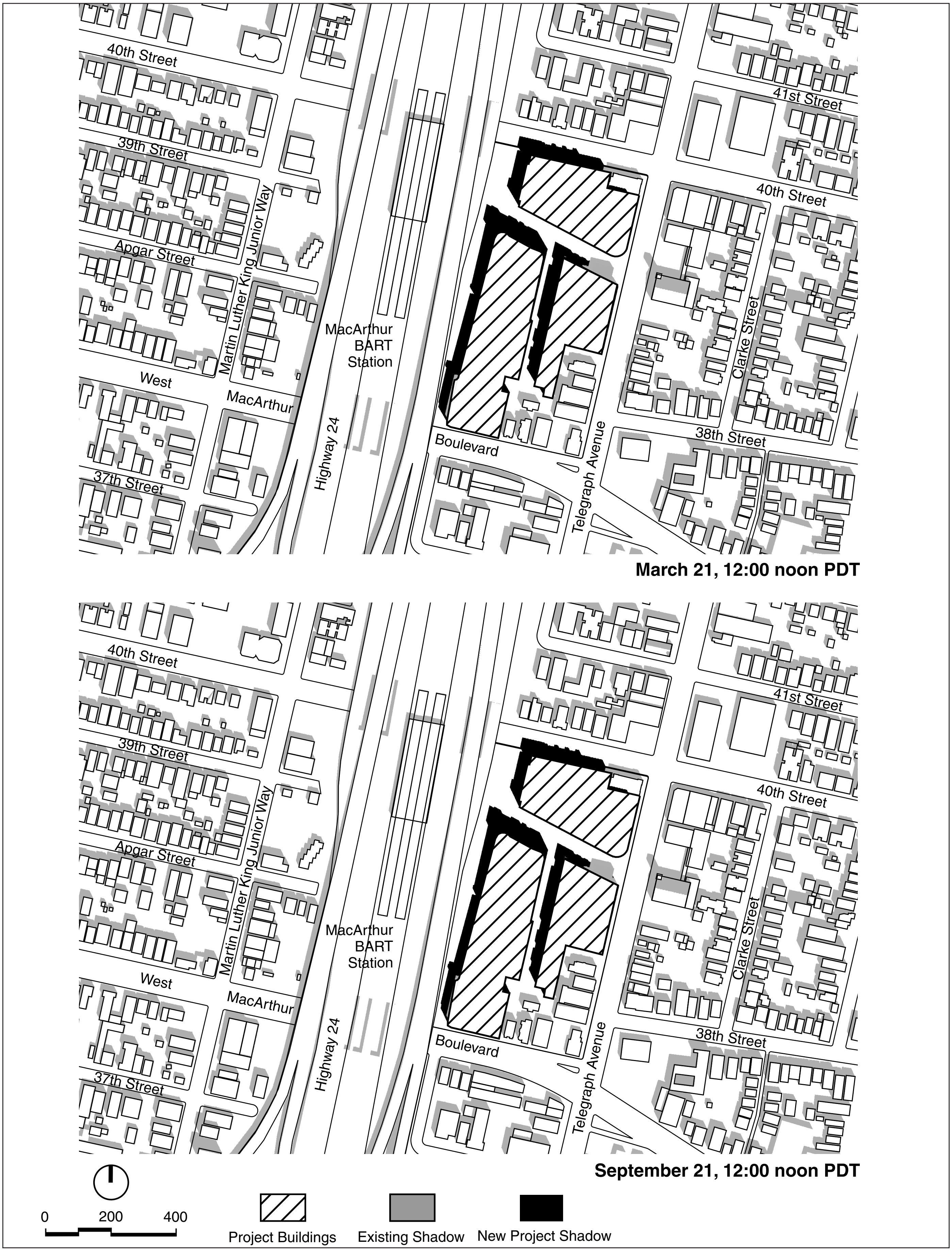

FIGURE V-8B

MacArthur Transit Village Project EIR
Tower Alternative Shadow Patterns

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

FIGURE V-8C

MacArthur Transit Village Project EIR

Tower Alternative Shadow Patterns

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

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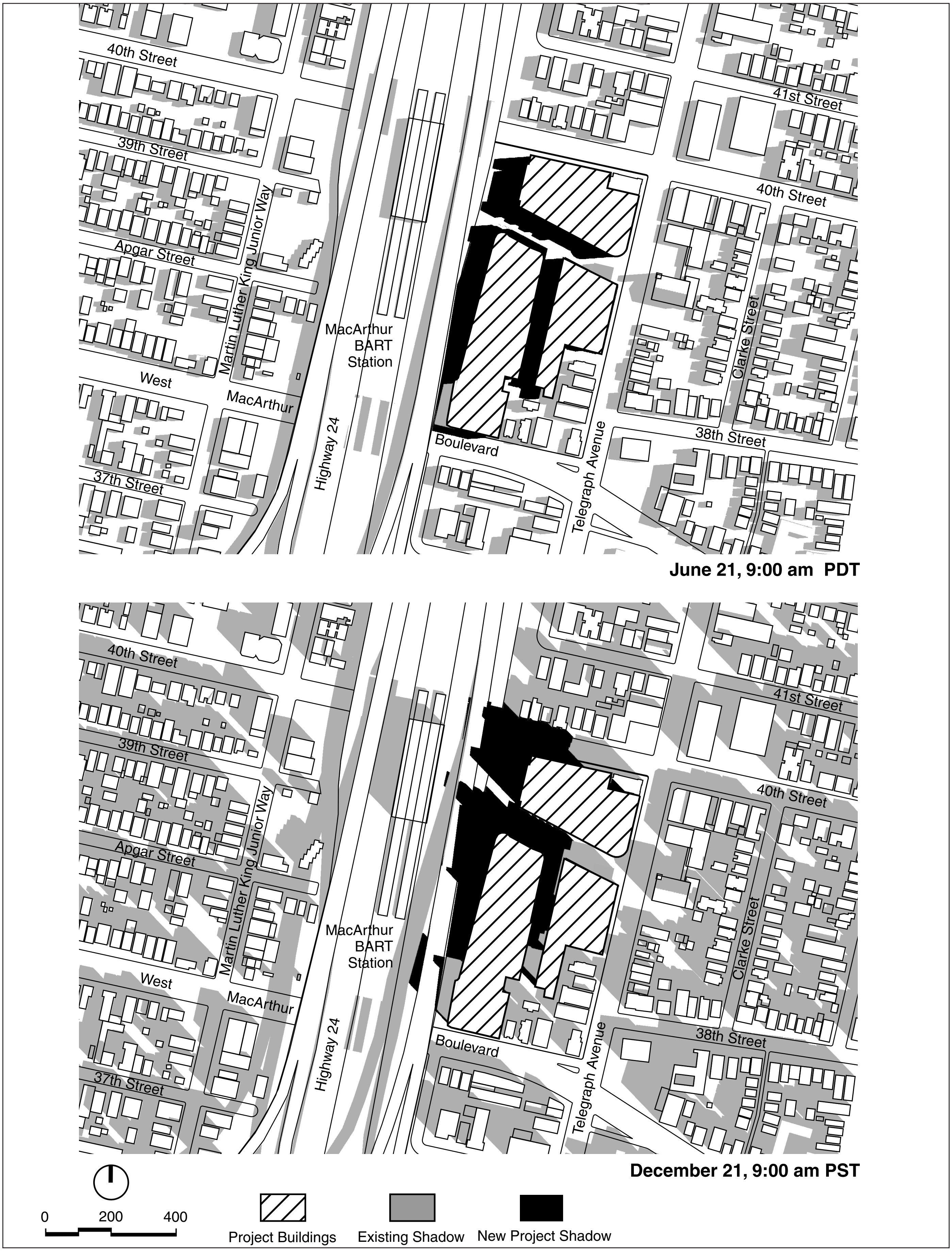

FIGURE V-8D

MacArthur Transit Village Project EIR

Tower Alternative Shadow Patterns

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

N:\2007\1407011 MacArthur BART Transit Village EIR\Documents\Background\Visual

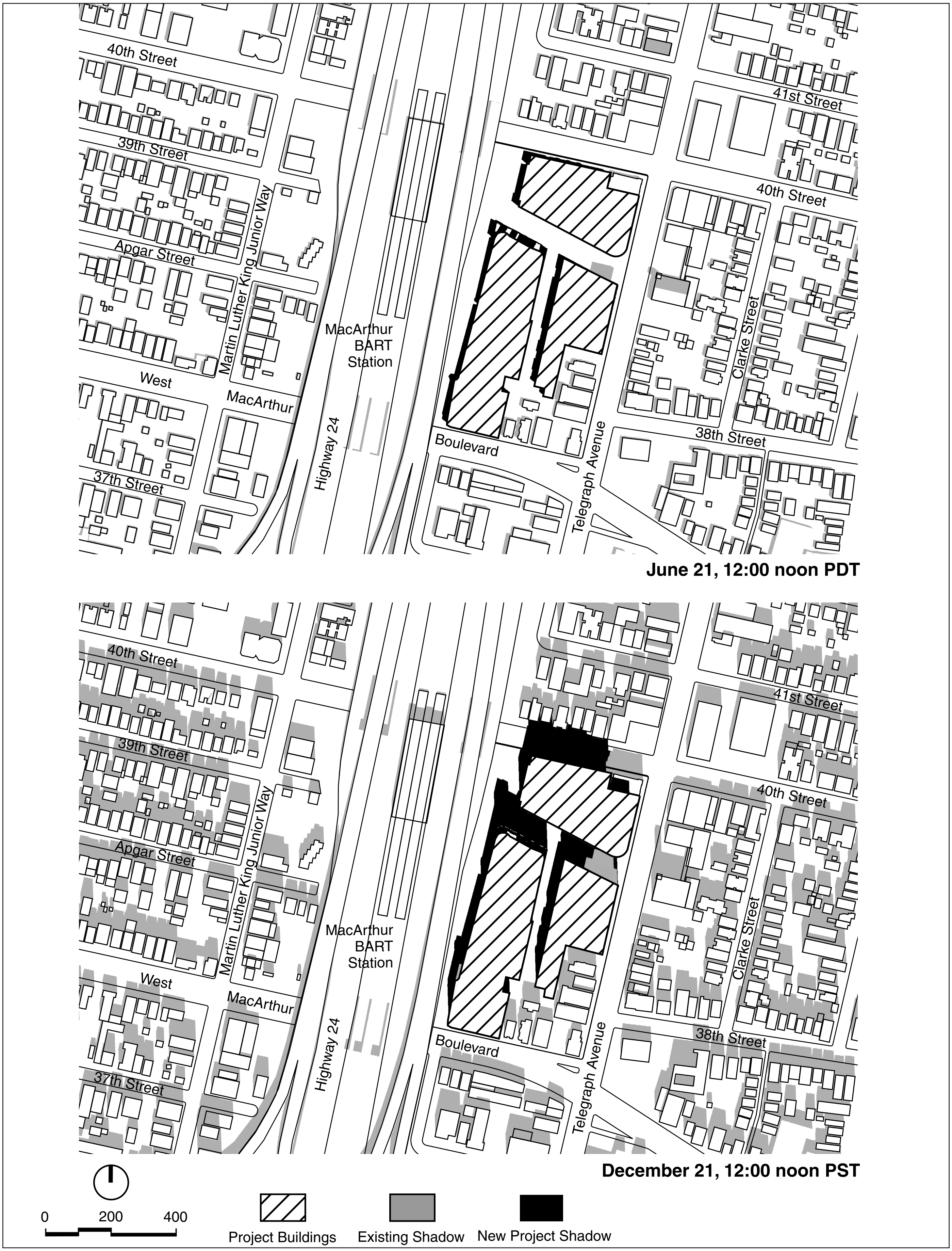

FIGURE V-8E

MacArthur Transit Village Project EIR

Tower Alternative Shadow Patterns

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

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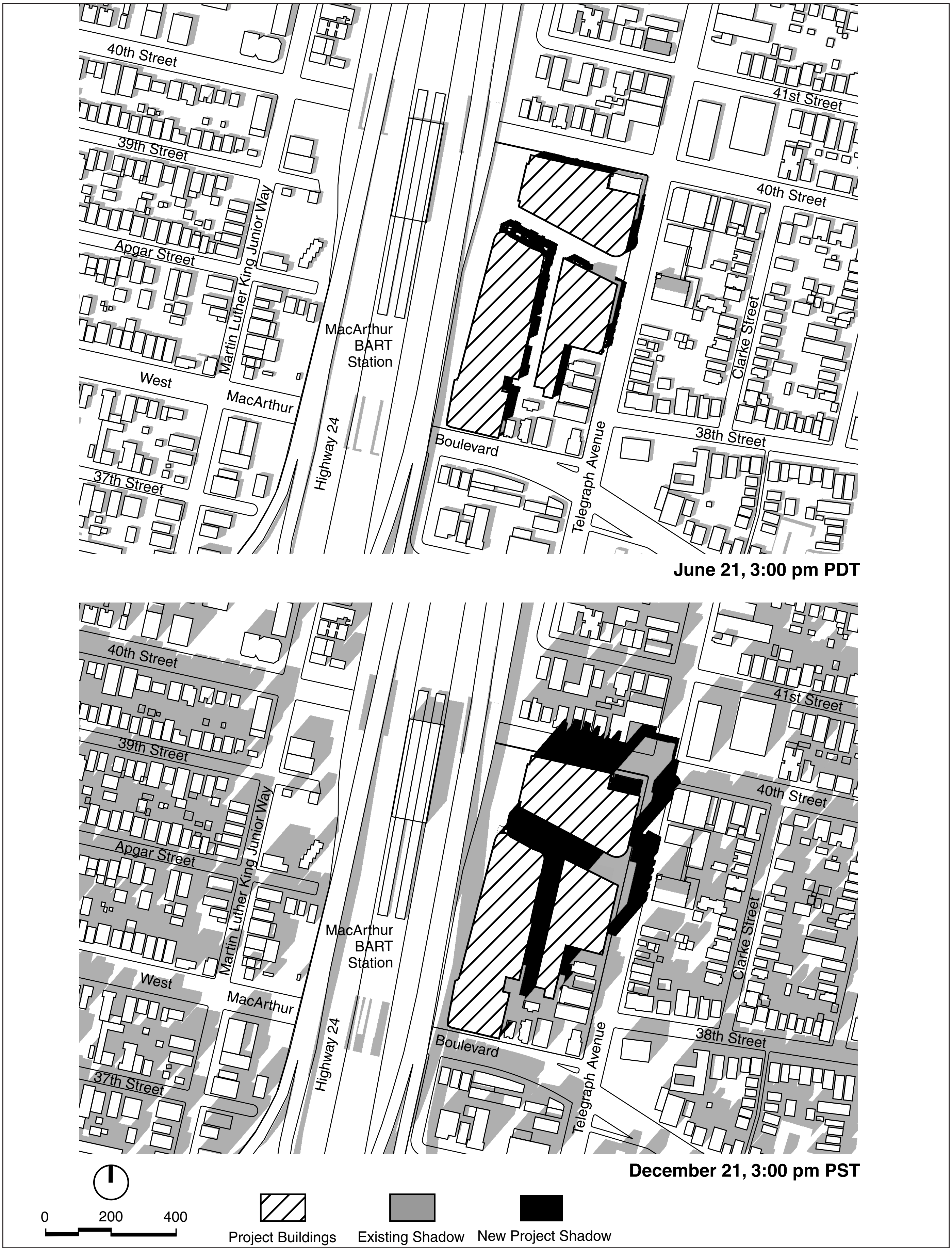

FIGURE V-8F

MacArthur Transit Village Project EIR

Tower Alternative Shadow Patterns

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

Existing view from West MacArthur Boulevard looking north to Entry Drive (viewport 4)

Conceptual visual simulation of Increased Commercial Alternative

FIGURE V-9A

MacArthur Transit Village Project EIR
Increased Commercial Conceptual Visual Simulation

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

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Existing View from Highway 24 southbound towards the project site (Viewpoint 6)

Conceptual visual simulation of Increased Commercial Alternative

FIGURE V-9B

MacArthur Transit Village Project EIR
Increased Commercial Conceptual Visual Simulation

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

Existing view towards site from the MacArthur BART Station platform (Viewport 5)

Conceptual visual simulation of Increased Commercial Alternative

FIGURE V-9C

MacArthur Transit Village Project EIR
Increased Commercial Conceptual Visual Simulation

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

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Existing view of project site from the intersection of Telegraph Avenue and 40th Street (Viewpoint 1)

Conceptual visual simulation of Increased Commercial Alternative

FIGURE V-9D

MacArthur Transit Village Project EIR
Increased Commercial Conceptual Visual Simulation

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

Existing view of site from Telegraph Avenue (viewport 2)

Conceptual visual simulation of Increased Commercial Alternative

FIGURE V-9E

MacArthur Transit Village Project EIR

Increased Commercial Conceptual Visual Simulation

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

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Existing view of site from the intersection of MacArthur Blvd. and Telegraph Avenue. (Viewport 3)

Conceptual visual simulation of Increased Commercial Alternative

FIGURE V-9F

MacArthur Transit Village Project EIR

Increased Commercial Conceptual Visual Simulation

SOURCE: ENVIRONMENTAL VISION, RRM DESIGN GROUP., 2007

VI. CEQA REQUIRED ASSESSMENT CONCLUSIONS

As required by the California Environmental Quality Act (CEQA), this chapter discusses the following types of impacts that could result from implementation of the proposed MacArthur Transit Village project: growth-inducing impacts; significant irreversible changes; significant unavoidable environmental impacts; cumulative impacts; and effects found not to be significant.

A. GROWTH-INDUCING IMPACTS

A project is considered growth inducing if it would directly or indirectly foster economic or population growth or the construction of additional housing.[1] Examples of projects likely to have significant growth-inducing impacts include extensions or expansions of infrastructure systems beyond what is needed to serve project-specific demand, and development of new residential subdivisions or industrial parks in areas that are currently only sparsely developed or are undeveloped. Typically, redevelopment projects on infill sites that are surrounded by existing urban uses are not considered growth-inducing because redevelopment by itself usually does not facilitate development intensification on adjacent sites.

The proposed project would not have any growth inducement effects. The project site is in a developed area fully served by public utilities. There are no significant areas that are undeveloped adjacent to the project site. Additionally, the project would not remove any obstacles that would help facilitate growth that could significantly affect the physical environment.

Indirect population growth associated with the proposed project could also occur in association with job creation. The economic stimulus generated by construction of the proposed project could result in the creation of new construction-related jobs. In addition, commercial square footage that would be built as part of the project could generate approximately 125 employees. However, the jobs created during both the construction and operation phases of the project would not be substantial in the context of job growth in Oakland and the region in the next 10 years. Although some of the employees generated by the proposed project may decide to live in Oakland, the migration of these employees into the City would not result in a substantial population increase.

[1] *CEQA Guidelines*, 2005, Section 15162.2(d).

Implementation of the proposed project would result in an estimated residential population of 1,845 people, based on a projected 2005 household size of 2.66 residents per household. According to ABAG,[2] the population of Oakland is expected to increase by 35,100 residents between the years 2005 and 2015. The proposed project's associated increase in population would account for approximately 5 percent of this increase. This residential growth is well within the anticipated population growth for the City of Oakland and would not be considered substantial.

In addition, 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 immediately adjacent to a major transit station, anticipated growth would benefit the existing transit system and could reduce adverse impacts associated with automobile use, such as air pollution and noise. In addition, the provision of additional housing in Oakland would allow more people to live in an existing urbanized area and could reduce development pressures on farmland and open space in the greater Bay Area. Therefore, the population growth that would occur as a result of project implementation would be largely beneficial and not considered substantial and adverse.

B. SIGNIFICANT IRREVERSIBLE CHANGES

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.[3] The *CEQA Guidelines* describe 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 non-renewable resources.

1. Changes in Land Use Which Would Commit Future Generations

The proposed project would allow for the redevelopment of approximately 8.2 acres of land immediately adjacent to the MacArthur BART station. The project site, which is surrounded by urban development on all sides, is designated for additional growth, especially housing, commercial and mixed-use development in the plans and policies of the City of Oakland, including the General Plan and Planning Code. Because the proposed project would occur on

[2] Association of Bay Area Governments, 2007. *Projections 2007, Forecasts for the San Francisco Bay Area to the Year 2035.*

[3] *CEQA Guidelines*, 2003. § 15126.2(c).

an infill site on land designated for a mixture of land uses, it would not commit future generations to a significant change in land use.

2. Irreversible Changes from Environmental Accidents

No significant irreversible environmental damage, such as what could occur as a result of an accidental spill or explosion of hazardous materials, is anticipated due to implementation of the proposed project. Furthermore, compliance with federal, State and local regulations, the City of Oakland's Standard Conditions of Approval, and the implementation of mitigation measures identified in Chapter IV.H, Public Health and Hazards, would reduce to a less-than-significant level the possibility that hazardous substances within the project site would cause significant environmental damage.

3. Consumption of Nonrenewable Resources

Consumption of nonrenewable 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 the 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 and appliances. However, the proposed project would incorporate energy-conserving features, as required by the Uniform Building Code and CA Energy Code Title 24. The proposed project would also be a sustainable development that meets the LEED ND Program over the long-term, resulting in a more energy efficient development and reduced consumption using local materials and labor. Additionally, the placement of the project site immediately adjacent to the MacArthur BART station would facilitate the increased use of public transit, further reducing non-renewable energy consumption associated with the single-occupant vehicles.

C. SIGNIFICANT UNAVOIDABLE AND CUMULATIVE IMPACTS

As discussed at the end of each topical section in Chapter IV, Setting, Impacts and Mitigation Measures, the project would not significantly contribute to any significant cumulative impacts for any topics other than transportation. The project would significantly contribute to cumulative impacts at the following intersections:

- Telegraph Avenue/52nd Street and Claremont Avenue intersection (#2)
- Telegraph Avenue/51st Street intersection (#3)
- West Street/40th Street intersection (#8)
- the Telegraph Avenue/40th Street intersection (#13)

- Market Street/MacArthur Boulevard intersection (#16)
- Telegraph Avenue/MacArthur Boulevard intersection (#20)
- Broadway/MacArthur Boulevard intersection (#22)

The project's contribution to the cumulative impact at each of the above intersections can be mitigated to a less-than-significant level except for intersection #3 and intersection #22, which will remain significant unavoidable. No other significant and unavoidable impacts would result.

D. 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 MacArthur BART Transit Project EIR. In addition to these meetings, Notices of Preparation (NOPs) were circulated on February 15, 2006 and June 13, 2007, and a public scoping meeting was held on March 15, 2006 to solicit comments from the public about the scope of this EIR. 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 environmental topics analyzed in Chapter IV, Setting, Impacts and Mitigation Measures, represent those topics which generated the greatest potential controversy and expectation of adverse impacts among the project team and members of the public. The following topics were excluded from discussion in the EIR because it was determined during the scoping phase that these impacts would be less-than-significant: Agricultural Resources; Biological Resources: Energy; Mineral Resources; and Population and Housing.

1. Agricultural Resources

The project site is currently developed with a BART parking lot and commercial buildings. No agriculture uses or farmland are present within or adjacent to the project site.

2. Biological Resources

The project site is located within a developed area, the majority of which is covered with impervious surfaces. Wildlife and botanical resources present within the project site are adapted to disturbed, urban conditions and would not be adversely affected by implementation of the proposed project.

3. Mineral Resources

No known mineral resources are located within or near the project site. Mineral resource extraction activities have not taken place within or around the project site during recent history.

4. Population and Housing

Implementation of the proposed project would result in an estimated residential population of 1,845 people, based on a projected 2005 household size of 2.66 residents per household. According to ABAG,[4] the population of Oakland is expected to increase 35,100 residents between the years 2005 and 2015. The proposed project's associated increase in population would account for approximately 5 percent of this increase. This residential growth is well within the anticipated population growth for the City of Oakland and would not be considered substantial.

The proposed project would result in the construction of 675 residential and 18 live-work units. According to ABAG, [5] the number of households within the City of Oakland is expected to increase from 154,580 to 168,910 between 2005 and 2015. The proposed project would account for approximately 5 percent of the increase in households. This household growth is within the anticipated household growth for the City of Oakland and would not be considered substantial.

[4] Association of Bay Area Governments, 2007. *Projections 2007, Forecasts for the San Francisco Bay Area to the Year 2035.*

[5] Ibid.

VII. REPORT PREPARATION

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