EMERALD VIEWS RESIDENTIAL DEVELOPMENT
DRAFT ENVIRONMENTAL IMPACT REPORT

STATE CLEARINGHOUSE No. 2007112042

LSA

October 2011

CITY OF OAKLAND

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

Community and Economic Development Agency
Planning & Zoning Division

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

COMBINED NOTICE OF AVAILABILITY AND RELEASE OF A DRAFT ENVIRONMENTAL IMPACT REPORT (DEIR) AND NOTICE OF PUBLIC HEARINGS ON THE DEIR FOR THE EMERALD VIEWS RESIDENTIAL DEVELOPMENT PROJECT

TO: All Interested Parties

PROJECT NAME: Emerald Views Residential Development Project

PROJECT LOCATION: 222 19th Street, Oakland, CA 94612

PROJECT SPONSOR: ian birchall + associates

CASE FILE NO: ER06-0009; CEQA State Clearinghouse No. 2007112042

REVIEW PERIOD: **October 4, 2011 through November 17, 2011**

PROJECT LOCATION: The project site is located in Central Oakland, within the block that is bound by 19th Street, Harrison Street, 20th Street, Lakeside Drive and Jackson Street. The site is north of 19th Street and south of the 12-story residential structure (Lakeside Drive Apartments) and a 2-story garage structure at 244 Lakeside Drive. Snow Park is located west of the project site and the 8-story Regillus apartment building is located east of the site. The 31,827 square foot project site is currently covered by a private, English garden associated with the historic August Shilling Estate. The project site is not on the Cortese List.

PROJECT DESCRIPTION: The proposed project would include the construction of a high-rise residential tower (approximately 457 feet tall) with approximately 370 residential units (including a mix of one- and two-bedroom units). The ground floor of the tower would include a lobby, café, lounge, management offices and other uses. Project parking, approximately 357 spaces, would be provided in 5 levels of subsurface parking. Access to the garage within the site would be provided on 19th Street via a sloped driveway on the southern portion of the site.

Approximately 14,220 square feet of public, usable open space would be provided to the north, south and west of the proposed building and would include an entry plaza with landscape plantings and a stone patio that may include elements relocated from the existing garden. In addition, a 40th floor viewing area would be provided. Approximately 20,850 square feet of private, usable open space would be provided through terraces and balconies, including a roof terrace.

The garden on the site would be demolished as part of the proposed project. The garden is a Designated Historic Property (DHP) and is rated A1+ of the "highest importance" by the Oakland Cultural Heritage Survey (OCHS). The garden is an anchor and primary contributor to the 244 Lakeside Drive Building Group, Area of Primary Importance (API). The garden is also a contributor to the Lake Merritt API.

The Oakland General Plan designates the project site as *Central Business District*, which allows high density mixed use and residential uses. The project site is in the *R-90, Downtown Apartment Residential Zone*, *S-4 Design Review Combining Zone* and *S-17 Downtown Residential Open Space Combining Zone* districts.[1]

[1] Effective July 21, 2009, the zoning on the Project Site was changed to CBD-R Central Business District Residential. However, pursuant to Section 6 of the rezoning ordinance, the Proposed Project is "grandfathered" under the R-90, S-17, and S-4 zones, and thus, the City is processing the application as such.

ENVIRONMENTAL REVIEW: The City issued a Notice of Preparation (NOP) of a DEIR on November 11, 2007. A DEIR now has been prepared for the Project, under the requirements of the California Environmental Quality Act (CEQA), pursuant to Public Resources Code Section 21000 et. seq.

Implementation of the proposed project has the potential to result in adverse environmental impacts related to transportation; air quality; wind levels; cultural resources; biological resources; and, hydrology and water quality. Significant transportation, wind, biological resources, cultural resources and hydrological impacts would be reduced to a less-than-significant level if Standard Conditions of Approval and mitigation measures noted in the DEIR are implemented. The DEIR identifies significant and unavoidable impacts related to wind hazards, air quality (construction-related NO_x), historic resources and transportation (intersection/roadway).

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 DEIR may also be reviewed at the following website: http://www2.oaklandnet.com/Government/o/CEDA/o/PlanningZoning/s/Application/DOWD009157. This project is document number 16.

PUBLIC HEARINGS ON DEIR:

1. The Oakland Landmarks Preservation Advisory Board will conduct a public hearing on the historic resource aspect of the DEIR on **November 14, 2011**, **at 6:00 p.m.** in Hearing Room 1, City Hall, 1 Frank H. Ogawa Plaza; and

2. The Oakland City Planning Commission will conduct a public hearing on the DEIR on **November 16, 2010**, **at 6:00 p.m.** in Hearing Room 1, City Hall, 1 Frank H. Ogawa Plaza; and

The City of Oakland is hereby releasing this DEIR, finding it to be accurate and complete and ready for public review. Members of the public are invited to comment on the DEIR. 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. In light of the EIR's purpose to provide useful and accurate information about such factors, comments on the DEIR should focus on the sufficiency of the DEIR in discussing possible impacts on the physical environment, ways in which potential adverse effects might be minimized, and alternatives to the project. Comments may be made at the public hearing described above or in writing. Please address all written comments to: Heather Klein, City of Oakland, Community and Economic Development Agency, Major Projects, Planning Division, 250 Frank H. Ogawa Plaza, Suite 3315, Oakland, CA 94612; (510) 238-3658 (fax); or emailed to hklein@oaklandnet.com. Comments should be received no later than **4:00 p.m. on November 17, 2011**. Please reference case number ER06-0009 in all correspondence.

If you challenge the EIR 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 **November 17, 2011.**

After all comments are received, a Response to Comments/Final EIR will be prepared and the Planning Commission will consider certification of the Final EIR and render a decision on the project at a meeting date to be scheduled. For further information, please contact Heather Klein **at (510) 238-3659 or at hklein@oaklandnet.com**.

ERIC ANGSTADT
Deputy Director, Community and Economic Development Agency

Date of Notice: **October 4, 2011**
File Number ER06-0009

EMERALD VIEWS RESIDENTIAL DEVELOPMENT
DRAFT ENVIRONMENTAL IMPACT REPORT

STATE CLEARINGHOUSE No. 2007112042

Submitted to:

City of Oakland
Community and Economic Development Agency
250 Frank H. Ogawa Plaza
Oakland, CA 94612

Prepared by:

LSA Associates, Inc.
2215 Fifth Street
Berkeley, CA 94710
510.540.7331

LSA

October 2011

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I. INTRODUCTION

A. PURPOSE OF THE EIR

In compliance with the California Environmental Quality Act (CEQA), this Environmental Impact Report (EIR) describes the potential environmental consequences of the Emerald Views Residential Development Project (proposed project). The proposed project is the development of a high-rise residential tower that would include approximately 370 units and five levels of below grade parking. The tower would be approximately 457 feet tall, measured from grade to the top of roof forms. This EIR is designed to inform City of Oakland decision-makers, responsible agencies and the general public of the proposed project and the potential physical impacts of project approval. This EIR also examines alternatives to the proposed project, and recommends a set of mitigation measures to reduce or avoid potentially significant physical impacts. The City of Oakland is the Lead Agency for the environmental review of this project.

B. PROPOSED PROJECT

The project evaluated in this EIR is the development of a site located at 222 19th Street within the City of Oakland. The 31,827 square foot project site is currently covered by a private, English garden associated with the historic August Shilling Estate. The garden currently contains a concrete arbor with wisteria and climbing roses beneath mature redwood trees, a manicured open lawn, a landing with a fountain, and a variety of other trees, shrubs and flowers. The development would consist of the following components:

- *Residential Tower.* The project would construct a high-rise residential tower which would include approximately 370 market rate, for-sale condominium units. The tower would be approximately 457 feet tall measured from grade to the top of the roof roofs. There would be 216 one-bedroom units and 154 two-bedroom units. The ground floor of the tower would include a lobby, café, lounge, management offices and other uses. The second and third floors would include a gym, indoor swimming pool, and meeting rooms.
- *Parking.* The project would include five stories of below-grade parking that would provide approximately 357 off-street parking spaces for a parking ratio of 0.96 parking spaces per dwelling unit. Access to the garage within the site would be provided on 19th Street via a sloped driveway on the southern portion of the site.
- *Landscaping and Open Space.* Approximately 14,220 square feet of public, usable open space would be provided on the project site. An entry plaza would be provided along 19th Street, and the southwest corner of the site, along 19th Street and adjacent to Snow Park, and would include a stone patio and may include elements relocated from the existing garden. Landscaping along the northern edge of the site would include a shade garden with some plants transplanted from the existing garden. In addition, a 40th floor viewing area would be provided. Approximately 20,850 square feet of private, usable open space would be provided through terraces and balconies, including a roof terrace.

- *Project Approvals.* The project applicant is requesting: a Major Conditional Use Permit to allow for a large scale development with over 100,000 square feet of new floor area and a height of more than 120 feet tall within the R-90 Downtown Apartment Residential Zone; a Major Interim Conditional Use Permit for the proposed density to allow for the development of up to 370 dwelling units on the property; Minor Variances related to parking and loading; a Minor Conditional Use Permit for food sales; Design Review; and Tree Removal/Preservation Permit.

C. EIR SCOPE

The City of Oakland circulated a Notice of Preparation (NOP), notifying responsible agencies and interested parties that an EIR would be prepared for the project and indicating the environmental topics anticipated to be addressed in this EIR. The NOP was published on November 11, 2007 (SCH# 2007112042). The NOP was mailed to public agencies, organizations, and individuals likely to be interested in the potential impacts of the project. Comments on the NOP were received by the City and considered during preparation of the EIR. A public scoping meeting was held on November 28, 2007 in front of the Oakland Planning Commission, and another public scoping meeting was held on December 10, 2007 in front of the Landmarks Preservation Advisory Board. Comments received at these meetings and copies of each comment letter received are provided in Appendix A.

The following environmental topics are addressed as separate sections in Chapter IV in the EIR:

- Land Use
- Planning Policy
- Population and Housing
- Transportation and Circulation
- Air Quality and Greenhouse Gas Emissions
- Noise and Vibration
- Aesthetics, Shadow and Wind
- Cultural and Paleontological Resources
- Biological Resources
- Soils, Geology and Seismicity
- Hydrology and Water Quality
- Public Health and Hazards
- Utilities and Infrastructure
- Public Services and Recreation

Environmental topics not warranting detailed evaluation (agricultural resources and mineral resources) are discussed in Chapter VI.D, 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 the City's Standard Conditions of Approval incorporated into the project and mitigation measures recommended to reduce or avoid significant impacts. A summary discussion of alternatives to the proposed project is also provided.
- *Chapter III – Project Description:* Provides a description of the project site, site characteristics and conditions, proposed project objectives, required approval process, and details of the project itself.
- *Chapter IV – Setting, Impacts and Mitigation Measures:* Describes the following for each environmental topic: existing conditions (setting); Standard Conditions of Approval (if applicable); significance criteria; potential environmental impacts and their level of significance; and mitigation measures recommended when necessary to mitigate significant impacts. 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). Cumulative impacts are also discussed in each technical topic section. The significance of each impact is identified before and after implementation of any recommended mitigation measure(s).
- *Chapter V – Alternatives:* Provides an evaluation of five alternatives to the proposed project including the No Project Alternative.
- *Chapter VI – CEQA Required Assessment Conclusions:* Provides additional specifically-required analyses of the proposed project's growth-inducing effects, significant irreversible changes and effects found not to be significant.
- *Chapter VII – Report Preparation:* Identifies preparers of the EIR, references used and persons and organizations contacted.
- *Appendices:* The appendices contain the NOP, written comments received on the NOP and a summary of comments from the scoping meetings; traffic, air quality and noise modeling data and supporting analysis; wind memorandums; historic resources and archaeological and paleontological reports; the arborist's memorandum; the Phase I Site Assessment; and the Geotechnical Report.

All supporting technical documents and the reference documents are available for public review at the City of Oakland Community and Economic Development Agency, Planning and Zoning Division, under case numbers CMDV60-142 and ER06-009.

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 and Economic Development Agency, Planning and Zoning 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 Responses to Comments/Final EIR.

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II. SUMMARY

A. PROJECT UNDER REVIEW

This EIR has been prepared to evaluate the potential environmental impacts of the Emerald Views Residential Development Project. The 31,827 square foot project site is located at 222 19th Street on the edge of the Gold Coast neighborhood in the City of Oakland. The project site currently is covered with a private, English garden associated with the historic August Shilling Estate. The proposed project would develop the site with a high-rise residential tower, which would include approximately 370 residential units and five levels of below grade parking, and would be approximately 457 feet tall. The proposed project would require City discretionary approvals including a request for Conditional Use Permits without limitation, Variances, Design Review approval, Tree Preservation/ Removal permit and development and construction permits. The proposed project is described in greater detail 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 is summarized below.

1. Potential Areas of Controversy

Letters and verbal comments received on the Notice of Preparation (NOP) raised a number of topics that the commentors wanted addressed in the EIR, including traffic, parking, aesthetics, historic resources, storm drainage and water quality, utilities and infrastructure, public services and recreation, biological resources, and noise that may result from development of 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 CEQA Scoping Sessions, held on November 28, 2007 and December 10, 2007, included many of those offered in writing as comments on the NOP. Copies of the written comment letters and a summary of the verbal comments 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]

[1] CEQA Sections 21060.5 and 21068.

As discussed in this EIR, implementation of the proposed project has the potential to result in adverse environmental impacts related to transportation; air quality; wind levels; cultural resources; biological resources; and, hydrology and water quality. Significant transportation, wind, biological resources, cultural resources and hydrological impacts would be reduced to a less-than-significant level if Standard Conditions of Approval and mitigation measures noted in this report are implemented. However, two significant transportation impacts, one air quality impact, two wind level impacts and three cultural resources impacts would not be reduced to a less-than-significant level by mitigation measures. Impacts are anticipated to be less than significant for all other environmental topics.

3. Alternatives to the Proposed Project

Chapter VI includes the analysis of five 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 five project CEQA alternatives analyzed in Chapter VI include:

- The **No Project/No Development alternative**, which assumes the continuation of existing conditions within the project site.
- The **Southwest Corner Development alternative**, which assumes a three-story residential building containing six dwelling units and a footprint of approximately 3,500 square feet would be constructed on the southwest corner of the project site, while the remainder of the garden would be preserved.
- The **Reduced Height alternative**, which assumes a 12-story building containing 90 dwelling units, two levels of underground parking, and the same amount of café space as the proposed project would be developed on the project site.
- The **Zoning Compliant alternative,** which assumes a high-rise residential building containing approximately 350 dwelling units, with the same height and scale of the building as the proposed project, would be developed on the project site adhering to the zoning regulations in effect at the time of project application completeness.
- The **244 Lakeside Building Group API-Site Plan alternative,** which assumes a high-rise residential building containing approximately 370 dwelling units with the same ground floor uses, height, scale, design, and footprint of the building as the proposed project would be developed towards the southwest corner of the project site.

4. Significant Unavoidable and Cumulative Impacts

Implementation of the proposed project would result in significant unavoidable impacts to transportation, air quality, wind levels and cultural resources. The intersection of San Pablo Avenue/West Grand Avenue would operate at LOS F in the PM peak hour under Cumulative Year 2030 Conditions and Cumulative Year 2030 plus Project Conditions. The project would contribute to a significant cumulative impact at this intersection. While the signal phasing at the intersection of San Pablo Avenue/West Grand Avenue could be modified to allow protected-permitted phasing for the north-bound left-turn movements, and the signal timing and cycle length could be re-optimized, the

operational and geometric feasibility of this mitigation measure is not known, therefore this impact is significant and unavoidable.[2]

In addition, in the Cumulative Year 2030 Plus Project condition, the segment of I-880 from Oak to 5th Street would operate at LOS F in the westbound AM peak hour and LOS F in the eastbound PM peak hour. The proposed project would contribute to a significant cumulative impact on this segment in the AM and PM peak hours. Increasing capacity on the freeway would likely require increasing the number of travel lanes, but given the existing alignment and constraints due to lack of right-of-way, there are no feasible measures to mitigate the project's impacts. This impact would remain significant and unavoidable.[3]

Construction period activities including site preparation and construction could generate significant short–term exhaust and organic emissions. Construction-related NO_x emissions would be significant with the proposed project. While mitigation measures would reduce NO_x emissions, this impact would remain significant and unavoidable.

Implementation of the proposed project could cause two exceedences of the City of Oakland's wind hazard criterion, one at the northeastern corner of the project site, and the other at the southwest corner of the proposed building. While it is likely that ground wind levels would be reduced to less than significant levels through implementation of a landscape plan, until the landscaping and design features are reviewed and finalized, it cannot be determined if wind speeds would actually be reduced below the City wind threshold. As such, these impacts have been conservatively deemed significant and unavoidable. Cumulative impacts from ground winds levels have also been conservatively deemed significant and unavoidable.

The proposed project would remove the Schilling Garden, which is considered to be an individual historic resource. In addition, the removal of the garden would cause a substantial adverse change in the historical significance of adjacent historic structures, the 244 Lakeside Drive Apartments and the Regillus apartments, as well as to the 244 Lakeside Drive Building Group API. Mitigation measures would not be able to reduce these impacts to a less-than-significant level. As such, these impacts would remain significant and unavoidable. The proposed project would also result in a cumulative impact to the 244 Lakeside Drive Building Group API. While mitigation measures would reduce the cumulative impact, the impact would remain significant and unavoidable.

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 V. The table is arranged in four columns: (1) impacts; (2) level of significance prior to mitigation; (3) required Standard Condition of Approval and/or recommended mitigation measures; and (4) level of significance after 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

[2] This intersections has been identified in the recently adopted Housing Element as significant and unavoidable and findings have been made to clear this intersection from having to make further significant and unavoidable findings.

[3] Ibid.

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 V.

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

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
A. Land Use			
There are no significant impacts to land use.			
B. Planning Policy			
There are no significant impacts to planning policy.			
C. Population and Housing			
There are no significant impacts to population and housing.			
D. Transportation and Circulation			
The proposed project would not conflict with adopted transportation policies, plans, and programs supporting alternative transportation with implementation of the City Standard Condition of Approval listed in this table.		**COA TRANS-1: Parking and Transportation Demand Management.** *Prior to issuance of a final inspection of the building permit.* A qualified traffic consultant with Transportation Demand Management (TDM) experience shall be retained by the project applicant to develop a TDM plan containing strategies to reduce on-site parking demand and single occupancy vehicle travel and submit such to the City Planning and Zoning Division and the Transportation Services Department for review and final approval. The applicant shall implement the approved TDM plan. The TDM shall include strategies to increase bicycle, pedestrian, transit, and carpools/vanpool use. All four modes of travel shall be considered. Strategies to consider include the following: a) Inclusion of additional bicycle parking, shower, and locker facilities that exceed the requirement b) Construction of bike lanes per the Bicycle Master Plan; Priority Bikeway Projects c) Signage and striping onsite to encourage bike safety d) Installation of safety elements per the Pedestrian Master Plan (such as cross walk striping, curb ramps, count down signals, bulb outs, etc.) to encourage convenient crossing at arterials e) Installation of amenities such as lighting, street trees, trash receptacles per the Pedestrian Master Plan and any applicable streetscape plan. f) Direct transit sales or subsidized transit passes g) Guaranteed ride home program h) Pre-tax commuter benefits (checks) i) On-site car-sharing program (such as City Car Share, Zip Car, etc.) j) On-site carpool/vanpool/ridematching program k) Distribution of information concerning alternative transportation options l) Parking spaces sold/leased separately	LTS

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA TRANS-1 *Continued*		To further implement this Standard Conditions of Approval: m) Parking management strategies; including attendant/valet parking and shared/tandem parking spaces n) Introductory transportation information packet provided to new residents and employees o) On-site Transportation Information Center managed by a Transportation Coordinator (such as TravelChoice in Alameda) p) Carpool/Vanpool/Ridematching services q) Broadway-Valdez Shuttle Service: the building owner shall work with the City of Oakland to determine the building owner's appropriate financial contribution share and/or other efforts to support the Broadway-Valdez or other shuttle service which provides service along Broadway and connects the project to upper Broadway, downtown, and Jack London Square.	
Construction related traffic impacts would be reduced with implementation of the City Standard Condition of Approval listed in this table.		**COA TRANS-2: Construction Management Plan.** *Prior to issuance of a demolition, grading, or building permit.* The project applicant shall submit to the Planning and Zoning Division and the Building Services Division for review and approval a construction management plan that identifies the conditions of approval and mitigation measures related to construction impacts of the project and explains how the project applicant will comply with these construction-related conditions of approval and mitigation measures. To further implement this Standard Conditions of Approval: The City-approved construction staging and access agreement referenced in COA TRANS-3, subsection B and C shall be incorporated into the Construction Management Plan.	LTS
Construction related traffic and parking impacts would be reduced with implementation of the City Standard Condition of Approval listed in this table.		**COA TRANS-3: Construction Traffic and Parking.** *Prior to issuance of a demolition, grading, or building permit.* A. The project applicant and construction contractor shall meet with appropriate City of Oakland agencies to determine traffic management strategies to reduce, to the maximum extent feasible, traffic congestion and the effects of parking demand by construction workers during construction of this project and other nearby projects that could be simultaneously under construction. The project applicant shall develop a construction management plan for review and approval by the Planning and Zoning Division, the Building Services Division, and the Transportation Services Division. The plan shall include at least the following items and requirements:	LTS

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA TRANS-3 *Continued*		a) A set of comprehensive traffic control measures, including: scheduling of major truck trips and deliveries to avoid peak traffic hours; detour signs if required; lane closure procedures, signs, cones for drivers, bicycles and pedestrians; and designated construction access routes. b) Notification procedures for adjacent property owners and public safety personnel regarding when major deliveries, detours, and lane closures will occur. c) Location of construction staging areas for materials, equipment, and vehicles at an approved location. d) A process for responding to, and tracking, complaints pertaining to construction activity, including identification of an onsite complaint manager. The manager shall determine the cause of the complaints and shall take prompt action to correct the problem. Planning and Zoning shall be informed who the Manager is prior to the issuance of the first permit issued by Building Services. e) Provision for accommodation of pedestrian and bicycle flow. f) Provision of parking management and spaces for all construction workers to ensure that construction workers do not park in on street spaces. g) Any damage to the street caused by heavy equipment, or as a result of this construction, shall be repaired, at the applicant's expense, within one week of the occurrence of the damage (or excessive wear), unless further damage/excessive wear may continue; in such case, repair shall occur prior to issuance of a final inspection of the building permit. All damage that is a threat to public health or safety shall be repaired immediately. The street shall be restored to its condition prior to the new construction as established by the City Building Inspector and/or photo documentation, at the applicant's expense, before the issuance of a Certificate of Occupancy. h) Any heavy equipment brought to the construction site shall be transported by truck, where feasible. i) No materials or equipment shall be stored on the traveled roadway at any time. j) Prior to construction, a portable toilet facility and a debris box shall be installed on the site, and properly maintained through project completion. k) All equipment shall be equipped with mufflers. l) Prior to the end of each work day during construction, the contractor or contractors shall pick up and properly dispose of all litter resulting from or related to the project, whether located on the property, within the public rights of way, or properties of adjacent or nearby neighbors.	

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA TRANS-3 *Continued*		To further implement this Standard Condition of Approval: B. If the project applicant uses Lakeside Drive for construction staging and access to the proposed parcel, the owner or owners of 222 19th Street and 244 Lakeside shall submit for review and approval by the City attorney an agreement guaranteeing that such access will be maintained and reserved for use during the duration of demolition, grading, and construction activity. The agreement shall be recorded with the Alameda County Recorder and submitted to and approved by the Planning and Zoning Division, Building Services Division, and the Engineering Division. C. If the applicant decides to use Lakeside Drive for construction staging and access at a later date, but prior to that phase of construction, after approval of the construction and traffic management plan, the applicant shall submit a revised construction management plan and submit the access agreement per Section B of this Condition.	
TRANS-1: The intersection of Oak Street/7th Street would operate at LOS F during the PM peak hour under Cumulative Year 2030 Plus Project Conditions. The proposed project would contribute to this impact.	S	MM TRANS-1: Implement the following measures at the Oak Street/7th Street intersection: • Optimize the traffic signal (to include determination of allocation of green time for each intersection approach) for the PM peak hour in tune with the relative traffic volumes on those approaches. • Coordinate the signal timing at this intersection with the adjacent intersections in the same signal coordination group. To implement this measure, the Project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval: • Plans, Specifications, and Estimates (PS&E) to modify the intersection. All elements shall be designed to City standards in effect at the time of construction, and all new or upgraded signals should include these enhancements. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for the elements listed below: o 2070L Type Controller o GPS communication (clock) o Accessible pedestrian crosswalks according to Federal and State Access Board guidelines	LTS

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
MM TRANS-1 *Continued*		o City Standard ADA wheelchair ramps o Full actuation (video detection, pedestrian push buttons, bicycle detection) o Accessible Pedestrian Signals, audible and tactile according to Federal Access Board guidelines o Countdown Pedestrian Signals o Fiber signal interconnect and communication to City Traffic Management Center for corridors identified in the City's ITS Master Plan for a maximum of 600 feet o Signal timing plans for the signals in the coordination group. The Project sponsor shall fund, prepare, and install the approved plans and improvements. After implementation of this measure, conditions at this intersection would improve to an acceptable level of service.	
TRANS-2: The intersection of Harrison Street/Lakeside Drive would operate at LOS F during the PM peak hour under Cumulative Year 2030 Plus Project Conditions. The proposed project would contribute to this impact.	S	MM TRANS-2: Implement the following measures at the Harrison Street/Lakeside Drive intersection: • Optimize the traffic signal (to include determination of allocation of green time for each intersection approach) for the PM peak hour in tune with the relative traffic volumes on those approaches. • Coordinate the signal timing at this intersection with the adjacent intersections in the same signal coordination group. To implement this measure, the Project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval: • Plans, Specifications, and Estimates (PS&E) to modify the intersection. All elements shall be designed to City standards in effect at the time of construction, and all new or upgraded signals should include these enhancements. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for the elements listed below: o 2070L Type Controller o GPS communication (clock)	LTS

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
MM TRANS-2 *Continued*		o Accessible pedestrian crosswalks according to Federal and State Access Board guidelines o City Standard ADA wheelchair ramps o Full actuation (video detection, pedestrian push buttons, bicycle detection) o Accessible Pedestrian Signals, audible and tactile according to Federal Access Board guidelines o Countdown Pedestrian Signals o Fiber signal interconnect and communication to City Traffic Management Center for corridors identified in the City's ITS Master Plan for a maximum of 600 feet o Signal timing plans for the signals in the coordination group. The Project sponsor shall fund, prepare, and install the approved plans and improvements. After implementation of this measure, conditions at this intersection would improve to an acceptable level of service.	
TRANS-3: The intersection of San Pablo Avenue/West Grand Avenue would operate at LOS F during PM peak hour under Cumulative Year 2030 Plus Project Conditions. The proposed project would contribute to this impact.	S	MM TRANS-3: While the signal phasing at the intersection of San Pablo Avenue/West Grand Avenue could be modified to allow protected-permitted phasing for the northbound left-turn movements and the signal timing and cycle length re-optimized, this study does not provide sufficient detail to evaluate the operational and geometric feasibility of this mitigation measure, therefore this impact is conservatively deemed significant and unavoidable. The project applicant shall retain a qualified traffic engineer to conduct a feasibility study at this intersection which will be submitted to TSD for review and approval to determine appropriate measures to mitigate the cumulative impacts at this intersection. After appropriate mitigation measures are determined, the project sponsor shall fund, prepare, and implement the approved plans at the City's direction.	SU[4]

[4] Impacts to this intersection are still considered significant and unavoidable with implementation of the mitigation measure. However, the recently adopted Housing Element identified this intersection as being significant and unavoidable and findings have been made to clear this intersection from having to make further significant and unavoidable findings. The impact still remains significant and unavoidable.

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
TRANS-4: The segment of I-880 from Oak to 5th Street would operate at LOS F in the westbound AM peak hour and LOS F in the eastbound PM peak hour under Cumulative Year 2030 plus Project Conditions.	S	MM TRANS-4: The segment of I-880 from Oak Street to 5th Avenue consists of two four-lane aerial structures, with the segment immediately west of Lake Merritt Channel bordered on the north by the Laney College parking lot and on the south by industrial uses. The aerial structure continues east of the channel, crossing over the existing Union Pacific railroad right-of-way. Increasing capacity on the freeway would likely require increasing the number of travel lanes, but given the existing alignment and constraints due to lack of right-of-way for both the roadway on the west end of the channel and possibly for support columns above the Union Pacific right-of-way, there are no feasible measures to mitigate the project's impacts. Any proposed mitigation measure would also require Caltrans project approval. Therefore, the project impacts on this roadway segment are significant and unavoidable.	SU[5]
TRANS-5: The Project proposes to reduce the width of the sidewalk to accommodate two loading areas which would present a potential safety hazard for pedestrians.	S	MM TRANS-5: Curb cuts currently proposed on 19th Street to accommodate two loading areas shall be removed and redesigned such that they would not encroach onto public right-of-way and would maintain the existing sidewalk width. **COA TRANS-1: Parking and Transportation Demand Management.**	LTS
NON CEQA RECOMMENDED PROJECT SPECIFIC CONDITIONS	LTS	Although not necessary to address a significant CEQA impact, the following conditions are recommended to improve pedestrian access and safety for pedestrians heading towards Lake Merritt. **RECOMMENDATION TRANS-1:** Installation of pedestrian crosswalks and ADA compliant ramps with domes at the intersection of Jackson Street and 19th Street.	LTS
		Although not necessary to address a significant CEQA impact, the following conditions are recommended to improve bicycle conditions in the immediate vicinity of the project. **RECOMMENDATION TRANS-2:** Construct the 20th Street bikeway between Harrison Street and Franklin Street.	LTS

[5] Ibid.

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
E. Air Quality and Greenhouse Gas Emissions			
Air quality impacts would be reduced with implementation of the City Standard Condition of Approval listed in this table.		**COA AIR-1: Construction-Related Air Pollution Controls (Dust and Equipment Emissions).** *Ongoing through demolition, grading, and/or construction.* During construction, the project applicant shall require the construction contractor to implement all of the following applicable measures recommended by the Bay Area Air Quality Management District (BAAQMD): a) Water all exposed surfaces of active construction areas at least twice daily (using reclaimed water if possible). Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever possible. b) Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer). c) All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. d) Pave all roadways, driveways, sidewalks, etc. as soon as feasible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used. e) Enclose, cover, water twice daily or apply (non-toxic) soil stabilizers to exposed stockpiles (dirt, sand, etc.). f) Limit vehicle speeds on unpaved roads to 15 miles per hour. g) Idling times shall be minimized either by shutting equipment off when not is use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485, of the California Code of Regulations. Clear signage to this effect shall be provided for construction workers at all access points. h) All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.	LTS

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA AIR-1 *Continued*		i) Post a publicly visible sign that includes the contractor's name and telephone number to contact regarding dust complaints. When contacted, the contractor shall respond and take corrective action within 48 hours. The telephone numbers of contacts at the City and BAAQMD shall also be visible. This information may be posted on other required on-site signage. j) All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe. k) All excavation, grading, and demolition activities shall be suspended when average wind speeds exceed 20 mph. l) Install sandbags or other erosion control measures to prevent silt runoff to public roadways. m) Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for one month or more). n) Designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holidays and weekend periods when work may not be in progress. o) Install appropriate wind breaks (e.g., trees, fences) on the windward side(s) of actively disturbed areas of the construction site to minimize wind blown dust. Wind breaks must have a maximum 50 percent air porosity. p) Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established. q) The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time. r) All trucks and equipment, including tires, shall be washed off prior to leaving the site. s) Site accesses to a distance of 100 feet from the paved road shall be treated with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel. t) Minimize the idling time of diesel-powered construction equipment to two minutes.	

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA AIR-1 *Continued*		u) The project applicant shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate matter (PM) reduction compared to the most recent California Air Resources Board (CARB) fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as they become available. v) Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., BAAQMD Regulation 8, Rule 3: Architectural Coatings). w) All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control Technology for emission reductions of NOx and PM. x) Off-road heavy diesel engines shall meet the CARB's most recent certification standard.	
No significant asbestos-related air quality impacts would occur with implementation of the City Standard Condition of Approval listed in this table.		**COA AIR-2: (same as COA HAZ-2): Asbestos Removal in Structures.** *Prior to issuance of a demolition permit.* If asbestos-containing materials (ACM) are found to be present in building materials to be removed, demolition and disposal, the project applicant shall submit specifications signed by a certified asbestos consultant for the removal, encapsulation, or enclosure of the identified ACM in accordance with all applicable laws and regulations, including but not necessarily limited to: California Code of Regulations, Title 8; Business and Professions Code; Division 3; California Health & Safety Code 25915-25919.7; and Bay Area Air Quality Management District, Regulation 11, Rule 2, as may be amended.	LTS
AIR-1: Construction period activities including site preparation and construction could generate significant short–term exhaust and organic emissions. Construction-related NO_x and ROG emissions would be potentially significant.	S	**COA AIR-1: Construction-Related Air Pollution Controls (Dust and Equipment Emissions).** Measures t through x pertaining to construction exhaust and $PM_{10,}$ $PM_{2.5,}$ and ROG.	LTS
		MM AIR-1: The City's Standard COA includes all feasible emission reduction measures recommended by BAAQMD, including a 20 percent NO_x reduction related to off-road construction vehicles. There are no additional feasible mitigation measures to reduce haul truck emissions associated with the excavation activity. Therefore, as shown in Table IV.E-14, NO_x emissions from construction would remain significant and unavoidable	SU

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
F. Noise and Vibration			
No significant construction period noise or vibration impacts would occur with implementation of the City Standard Condition 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: • 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. • Any construction activity proposed to occur outside of the standard hours of 7:00 am to 7:00 pm Monday through Friday for special activities (such as concrete pouring which may require more continuous amounts of time) shall be evaluated on a case by case basis, with criteria including the proximity of residential uses and a consideration of resident's preferences for whether the activity is acceptable if the overall duration of construction is shortened and such construction activities shall only be allowed with the prior written authorization of the Building Services Division. • Construction activity shall not occur on Saturdays, with the following possible exceptions: o 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. o 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. • No extreme noise generating activities (greater than 90 dBA) shall be allowed on Saturdays, with no exceptions. • No construction activity shall take place on Sundays or Federal holidays. • 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. • Applicant shall use temporary power poles instead of generators where feasible.	LTS

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
No significant construction period noise or vibration impacts would occur with implementation of the City Standard Condition of Approval listed in this table.		**COA NOISE-2: Noise Control.** *Ongoing throughout demolition, grading, and/or construction.* A qualified noise consultant shall be retained by the project applicant to develop a site-specific noise reduction program to reduce noise impacts due to construction and submit such to the City Planning and Zoning Division and Building Services Division for City review and approval. Noise reduction strategies to consider include, but are not limited to, the following measures: The applicant shall implement the approved plan. • 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). • Except as provided herein, Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used, if such jackets are commercially available and this could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures. • 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 other measures as determined by the City to provide equivalent noise reduction. • 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
No significant construction period noise or vibration impacts would occur with implementation of the City Standard Condition of Approval listed in this table.		**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 procedure and phone numbers for notifying the City Building Services Division staff and Oakland Police Department; (during regular construction hours and off-hours);	LTS

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA NOISE-3 *Continued*		• 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); • The designation of an on-site construction complaint and enforcement manager for the project; • 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 • 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.	
No significant interior noise impacts would occur with implementation of the City Standard Condition of Approval listed in this table.		**COA NOISE-4: Interior Noise.** *Prior to issuance of a building permit and Certificate of Occupancy.* If necessary to comply with the interior noise requirements of the City of Oakland's General Plan Noise Element and achieve an acceptable interior noise level, noise reduction in the form of sound-rated assemblies (i.e., windows, exterior doors, and walls), and/or other appropriate features/measures, shall be incorporated into project building design, based upon recommendations of a qualified acoustical engineer and submitted to the Building Services Division for review and approval prior to issuance of building permit. Final recommendations for sound-rated assemblies, and/or other appropriate features/measures, will depend on the specific building designs and layout of buildings on the site and shall be determined during the design phases. Written confirmation by the acoustical consultant, HVAC or HERS specialist, shall be submitted for City review and approval, prior to Certificate of Occupancy (or equivalent) that: • Quality control was exercised during construction to ensure all air-gaps and penetrations of the building shell are controlled and sealed; and • Demonstrates compliance with interior noise standards based upon performance testing of a sample unit. • Inclusion of a Statement of Disclosure Notice in the CC&R's on the lease or title to all new tenants or owners of the units acknowledging the noise generating activity and the single event noise occurrences. Potential features/measures to reduce interior noise could include, but are not limited to, the following:	LTS

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA NOISE-4 *Continued*		o Installation of an alternative form of ventilation in all units identified in the acoustical analysis as not being able to meet the interior noise requirements due to adjacency to a noise generating activity, filtration of ambient make-up air in each unit and analysis of ventilation noise if ventilation is included in the recommendations by the acoustical analysis**.** o Prohibition of Z-duct construction.	
No significant operational noise impacts would occur with implementation of the City Standard Condition of Approval listed in this table.		**COA NOISE-5: Operational Noise-General.** *Ongoing.* Noise levels from the activity, property, or any mechanical equipment on site shall comply with the performance standards of Section 17.120 of the Oakland Planning Code and Section 8.18 of the Oakland Municipal Code. If noise levels exceed these standards, the activity causing the noise shall be abated until appropriate noise reduction measures have been installed and compliance verified by the Planning and Zoning Division and Building Services.	LTS
No significant extreme noise impacts would occur with implementation of the City Standard Condition of Approval listed in this table.		**COA NOISE-6: Extreme Noise Generators.** *Ongoing throughout demolition, grading, and/or construction.* To further reduce potential 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 Planning and Zoning Division and the Building Services Division to ensure that maximum feasible noise attenuation will be achieved. This plan shall be based on the final design of the project. A third-party peer review, paid for by the project applicant, may be required to assist the City in evaluating the feasibility and effectiveness of the noise reduction plan submitted by the project applicant. 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: • Erect temporary plywood noise barriers around the construction site, particularly along sides adjacent to residential buildings; • Utilize noise control blankets on the building structure as the building is erected to reduce noise emission from the site; • 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	LTS

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA NOISE-6 *Continued*		• Monitor the effectiveness of noise attenuation measures by taking noise measurements. To further implement this Standard Condition of Approval, the applicant shall implement quiet pile driving technology (screw piles only).	
No significant vibration impacts would occur with implementation of the City Standard Condition of Approval listed in this table.		**COA NOISE-7 (same as COA CULT-4): Construction 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 adjacent structures, including the 244 Lakeside Drive apartment building, the Schilling Garage, and the Regillus apartments and garage, and design means and methods of construction that shall be utilized to not exceed the thresholds. To further implement this Standard Condition of Approval: a) The applicant shall retain an historic preservation architect (who meets the Secretary of the Interior's Standards and Guidelines for Historic Preservation Professional Qualifications) and a structural engineer (Monitoring Team), who shall undertake an Existing Conditions Study (Study) of the 244 Lakeside Drive building, the Schilling Garage, and the Regillus apartments and garage. The purpose of the Study is to establish the baseline condition of the building(s) prior to construction of the Project, including but not limited to the location and extent of any visible cracks or spalls on the building(s), and condition of the roof. The Study shall include written descriptions and photographs of the building(s) and include, without limitation, those physical characteristics that justify their inclusion on or eligibility for the Local Register. The Study shall be reviewed and approved by the City of Oakland's CEDA Deputy Director and Building Official. b) Initial construction activities shall be monitored by the Monitoring Team and if vibrations are above threshold levels, appropriate measures shall be taken to reduce vibrations to below established levels. The Monitoring Team shall continue to regularly monitor the buildings during construction and report any changes to the existing conditions, including but not limited to, expansion of cracks, new spalls, or other exterior deterioration, including roof damage. If there are such changes, appropriate corrective measures shall be taken to reduce vibrations to below established levels, or other measures taken to prevent damage to the building(s).	LTS

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA NOISE-7 *Continued*		c) Written monitoring reports shall be submitted to the City's CEDA Deputy Director and Building Official on a periodic basis as determined by the Monitoring Team. The structural engineer shall consult with the historic preservation architect, especially if any problems with character defining features of a historic resource are discovered. If in the opinion of the structural engineer, in consultation with the historic preservation architect, substantial adverse impacts to historic resources related to construction activities are found during construction, the Monitoring Team shall immediately inform, both orally and in writing, the project sponsor and/or the project sponsor's designated representative responsible for construction activities and the City Planning and Zoning Division. The project sponsor shall follow the Monitoring Team's recommendations for corrective measures, including halting construction activities in situations where further construction work would damage historic resources, or taking other measures to protect the building. The historic preservation officer shall establish the frequency of monitoring and reporting prior to the issuance of a demolition, grading, or building permit. d) The project sponsor shall respond to any claims of damage by inspecting the affected property promptly, but in no case more than five working days after the claim was filed and received by the project sponsor's designated representative. Any new cracks or other changes in the structures, including roof damage, shall be compared to pre-construction conditions and a determination shall be made as to whether the proposed project could have caused the damage. In the event that the project is demonstrated to have caused any damage, such damage shall be repaired to the pre-existing condition, provided the property owner approves of such. e) The historic preservation architect shall establish a training program for construction workers involved in the project that emphasizes the importance of protecting historic resources. The program shall include information on recognizing historic materials and directions on how to exercise care when working around and operating equipment near historic structures, including storage of materials away from historic buildings. It shall also include information on means to reduce vibrations from demolition and construction, and preventing other damage, and monitoring and reporting any potential problems that could affect the historic resources in the area. A provision for establishing this training program shall be included in the construction contract, and the contract provisions shall be reviewed and approved by the City of Oakland.	

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
G. Aesthetics, Shadow and Wind			
No significant light or glare impacts would occur with implementation of the City Standard Condition 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. Plans shall be submitted to the Planning and Zoning Division and the Electrical Services Division of the Public Works Agency for review and approval. All lighting shall be architecturally integrated into the site. **MM CULT-2: Redesign the first 12 floors' façade articulation.**	LTS
No significant light or glare impacts would occur with implementation of the City Standard Condition of Approval listed in this table.		**COA AES-2 (same as COA BIO-5): Bird Collision Reduction.** *Concurrent with submittal of planning applications or a building permit, whichever occurs first, and ongoing.* The project applicant, or his or her successor, including the building manager or Home Owner's Association, shall submit plans to the Planning and Zoning Division, for review and approval, indicating how they intend to reduce potential bird collisions to the maximum feasible extent. The applicant shall implement the approved plan, including all mandatory measures, as well as applicable and specific project Best Management Practice (BMP) strategies to reduce bird strike impacts to the maximum feasible extent. a) Mandatory measures include **all** of the following: i) Comply with federal aviation safety regulations for large buildings by installing minimum intensity white strobe lighting with three second flash instead of blinking red or rotating lights. ii) Minimize the number of and co-locate rooftop-antennas and other rooftop structures. iii) Monopole structures or antennas shall not include guy wires. iv) Avoid the use of mirrors in landscape design. v) Avoid placement of bird-friendly attractants (i.e., landscaped areas, vegetated roofs, water features) near glass. b) Additional BMP strategies to consider include the following: i) Make clear or reflective glass visible to birds using visual noise techniques. Examples include: 1. Use of opaque or transparent glass in window panes instead of reflective glass. 2. Uniformly cover the outside clear glass surface with patterns (e.g., dots, decals, images, abstract patterns). Patterns must be separated by a minimum 10 centimeters (cm).	LTS

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA AES-2 *Continued*		3. Apply striping on glass surface. If the striping is less than 2 cm wide it must be applied vertically at a maximum of 10 cm apart (or 1 cm wide strips at 5 cm distance) 4. Install paned glass with fenestration patterns with vertical and horizontal mullions of 10 cm or less. 5. Place decorative grilles or louvers with spacing of 10 cm or less. 6. Apply one-way transparent film laminates to outside glass surface to make the window appear opaque on the outside. 7. Install internal screens through non-reflective glass (as close to the glass as possible) for birds to perceive windows as solid objects. 8. Install windows which have the screen on the outside of the glass. 9. Use UV-reflective glass. Most birds can see ultraviolet light, which is invisible to humans. 10. If it is not possible to apply glass treatments to the entire building, the treatment should be applied to windows at the top of the surrounding tree canopy or the anticipated height of the surrounding vegetation at maturity. ii) Mute reflections in glass. Examples include: 1. Angle glass panes toward ground or sky so that the reflection is not in a direct line-of-sight (minimum angle of 20 degrees with optimum angle of 40 degrees) 2. Awnings, overhangs, and sunshades provide birds a visual indication of a barrier and may reduce image reflections on glass, but do not entirely eliminate reflections. iii) Reduce Light Pollution. Examples include: 1. Turn off all unnecessary interior lights from 11 p.m. to sunrise. 2. 3. Reduce perimeter lighting whenever possible.	

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA AES-2 *Continued*		iv) Institute a building operation and management manual that promotes bird safety. Example text in the manual includes: 1. Donation of discovered dead bird specimens to authorized bird conservation organization or museums to aid in species identification and to benefit scientific study, as per all federal, state and local laws. 2. Production of educational materials on bird-safe practices for the building occupants 3. Schedule nightly maintenance during the day or to conclude before 11 p.m., if possible. **MM CULT-2: Redesign the first 12 floors' façade articulation.**	
WIND-1: Ground level winds may exceed the City's wind criterion of winds above 36 miles per hour for more than 1 hour during daylight hours during the year.	S	MM WIND-1: The applicant shall prepare and, subject to review and approval by the City, implement a wind reduction plan that reduces wind hazards at the street level to the maximum feasible extent. The wind reduction plan shall include the previously conducted wind analysis and the final landscape plan which would include both structural and landscape design features, as well as mature trees located adjacent to the project site. The applicant shall develop the wind reduction plan in coordination with the salvage plan (Mitigation Measures CULT-1b, 1c and 1d) which shall be submitted to the Landmarks Preservation Advisory Board for review and approval. While it is likely that ground wind levels would be reduced to less-than-significant levels, until the landscaping and design features are reviewed and finalized, it is not feasible to determine if wind speeds would actually be reduced below the City wind threshold. **COA UTIL-1 Required Landscape Plan for New Construction and Certain Additions to Residential Facilities**	SU
WIND-2: Wind levels on the roof terrace may exceed the City's wind criterion of winds above 36 miles per hour for more than 1 hour during daylight hours during the year.	S	MM WIND-2: A qualified meteorologist shall be retained by the project applicant to conduct a wind analysis for the roof terrace. The analysis shall be submitted to the City's Planning and Zoning Division for review and approval. Any mitigation measures identified in the wind analysis to ensure that the roof terrace is in conformance with the City's wind criteria shall be implemented. If wind levels exceed the City's criteria and cannot be reduced, the roof terrace shall not be utilized as open space.	LTS
WIND-3: Cumulative ground level winds may exceed the City's wind criterion of winds above 36 miles per hour for more than 1 hour during daylight hours during the year.	S	MM WIND 3: Implement Mitigation Measure WIND-1.	SU

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
H. Cultural and Paleontological Resources			
No significant impacts to archaeological resources would occur with implementation of the City Standard Condition of Approvals listed in this table.		**COA CULT-1: Archaeological Resources** Ongoing throughout demolition, grading, and/or construction a) Pursuant to CEQA Guidelines section 15064.5 (f), "provisions for historical or unique archaeological resources accidentally discovered during construction" should be instituted. Therefore, in the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and the project applicant and/or lead agency shall consult with a qualified archaeologist or paleontologist to assess the significance of the find. If any find is determined to be significant, representatives of the project proponent and/or lead agency and the qualified archaeologist would meet to determine the appropriate avoidance measures or other appropriate measure, with the ultimate determination to be made by the City of Oakland. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and a report prepared by the qualified archaeologist according to current professional standards. b) In considering any suggested measure proposed by the consulting archaeologist in order to mitigate impacts to historical resources or unique archaeological resources, the project applicant shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project site while measure for historical resources or unique archaeological resources is carried out. c) Should an archaeological artifact or feature be discovered on-site during project construction, all activities within a 50-foot radius of the find would be halted until the findings can be fully investigated by a qualified archaeologist to evaluate the find and assess the significance of the find according to the CEQA definition of a historical or unique archaeological resource. If the deposit is determined to be significant, the project applicant and the qualified archaeologist shall meet to determine the appropriate avoidance measures or other appropriate measure, subject to approval by the City of Oakland, which shall assure implementation of appropriate measure measures recommended by the archaeologist. Should archaeologically-significant materials be recovered, the qualified archaeologist shall recommend appropriate analysis and treatment, and shall prepare a report on the findings for submittal to the Northwest Information Center.	LTS

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA CULT-1 *Continued*		The following additional COAs (COA CULT-1a through COA CULT-1d) are added to supplement and further implement COA GHG-1, Archaeological Resources, to decrease the potential for adverse damage of archaeological resources, paleontological resources and human remains during construction. To implement the additional COAs, a project applicant may choose to either implement COA CULT-1a (Intensive Pre-Construction Study) or COA CULT-1d (Construction ALERT Sheet). If in either case a high potential presence of historic period archaeological resources on the project site is indicated, or a potential resource is discovered, the project applicant shall also implement: • COA CULT-1b (Construction-Period Monitoring); • COA CULT-1c (Avoidance and/or Find Recovery); and • COA CULT-1d (to establish a Construction ALERT Sheet if the Intensive Pre-Construction Study was originally implemented per COA CULT-1a, or to update and provide more specificity to the initial Construction ALERT Sheet if a Construction Alert Sheet was originally implemented per COA CULT-1d). If in either case a high potential presence of historic-period archaeological resources is not indicated, or a potential resource is not discovered, COA CULT-1 shall apply and be adequate to decrease the potential for adverse damage of archaeological resources, paleontological resources and human remains during construction. COA CULT-1a through COA CULT-1d are detailed as follows: **COA CULT-1a: Intensive Pre-Construction Study.** *Prior to demolition, grading and/or construction.* The project applicant, upon approval from the City Planning Department, may choose to complete a site-specific, intensive archaeological resources study prior to soil-disturbing activities occurring on the project site. The purpose of the site-specific, intensive archaeological resources study is to identify early the potential presence of history-period archaeological resources on the project site. If that approach is selected, the study shall be conducted by a qualified archaeologist approved by the City Planning Department.	

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
		COA CULT-1a *Continued* If prepared, at a minimum, the study shall include: • An intensive cultural resources study of the project site, including subsurface presence/absence studies, of the project site. Field studies conducted by the approved archaeologist(s) may include, but are not limited to, auguring and other common methods used to identify the presence of archaeological resources; • A report disseminating the results of this research; • Recommendations for any additional measures that could be necessary to mitigate any adverse impacts to recorded and/or inadvertently discovered cultural resources. If the results of the study indicate a high potential presence of historic-period archaeological resources on the project site, or a potential resource is discovered, the project applicant shall hire a qualified archaeologist to monitor any ground disturbing activities on the project site during construction (see CAO CULT-1b, Construction-Period Monitoring, below), implement avoidance and/or find recovery measures (see COA CULT-1c, Avoidance and/or Find Recovery, below), and prepare an ALERT Sheet that details what could potentially be found at the project site (see COA CULT-1d, Construction ALERT Sheet, below). If no potential resources is discovered during the preconstruction study, COA CULT-1, Archaeological Resources, shall apply and be adequate to reduce any potentially significant impact to less than significant.	
		COA CULT-1b: Construction-Period Monitoring. *Ongoing throughout demolition, grading and/or construction.* Archaeological monitoring would include briefing construction personnel about the type of artifacts that may be present (as referenced in the ALERT Sheet, require per COA CULT-1d, Construction ALERT Sheet, below) and the procedures to follow if any are encountered, field recording and sampling in accordance with the Secretary of Interior's *Standards and Guidelines for Archaeological Documentation*, notifying the appropriate officials if human remains or cultural resources are discovered, or preparing a report to document negative findings after construction is completed. If a significant archaeological resource is discovered during the monitoring activities, adherence to COA CULT-1c, Avoidance and/or Find Recovery, discussed below), would be required to reduce the impact to less than significant. The project applicant shall hire a qualified archaeologist to monitor all ground-disturbing activities on the project site throughout construction.	

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
		COA CULT-1c: Avoidance and/or Find Recovery. *Ongoing and throughout demolition, grading and/or construction.* If a significant archaeological resource is present that could be adversely impacted by the proposed project, the project applicant of the specific project site shall either: • Stop work and redesign the proposed project to avoid any adverse impacts on significant archaeological resource(s); or, • If avoidance is determined infeasible by the City, design and implement an Archaeological Research Design and Treatment Plan (ARDTP). The project applicant shall hire a qualified archaeologist who shall prepare a draft ARDTP that shall be submitted to the City Planning Department for review and approval. The ARDTP is required to identify how the proposed data recovery program would preserve the significant information the archaeological resource is expected to contain. The ARDTP shall identify the scientific/historic research questions applicable to the expected resource, the data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. The ARDTP shall include the analysis and specify the curation and storage methods. Data recovery, in general, shall be limited to the portions of the archaeological resource that could be impacted by the proposed project. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practical. The project applicant shall implement the ARDTP. Because the intent of the ARDTP is to save as much of the archaeological resource as possible, including moving the resource, if feasible, preparation and implementation of the ARDTP would reduce the potential adverse impact to less than significant.	
		COA CULT-1d: Construction ALERT Sheet. *Prior to and during all subsurface construction activities for the Projec*t. The project applicant, upon approval from the City Planning Department, may choose to prepare a construction ALERT sheet prior to soil-disturbing activities occurring on the project site, instead of conducting site-specific, intensive archaeological resources pursuant to COA CULT-1a, above. The project applicant shall submit for review and approval by the City prior to subsurface construction activity an "ALERT" sheet prepared by a qualified archaeologist with visuals that depict each type of artifact that could be encountered on the project site. Training by the qualified archaeologist shall be provided to the project's prime contractor; any project subcontractor firms (including demolition, excavation, grading, foundation, and pile driving); and/or utilities firm involved in soil-disturbing activities within the project site. The ALERT sheet shall state, in addition to the basic measures of COA CULT-1, that in the event of discovery	

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
		COA CULT-1d *Continued* of the following cultural materials, all work must be stopped in the area and the City's Environmental Review Officer contacted to evaluate the find: concentrations of shellfish remains; evidence of fire (ashes, charcoal, burnt earth, firecracked rocks); concentrations of bones; recognizable Native American artifacts (arrowheads, shell beads, stone mortars [bowls], humanly shaped rock); building foundation remains; trash pits, privies (out-house holes); floor remains; wells; concentrations of bottles, broken dishes, shoes, buttons, cut animal bones, hardware, household items, barrels, etc.; thick layers of burned building debris (charcoal, nails, fused glass, burned plaster, burned dishes); wood structural remains (building, ship, wharf); clay roof/floor tiles; stone walls or footings; or gravestones. Prior to any soil-disturbing activities, each contractor shall be responsible for ensuring that the ALERT sheet is circulated to all field personnel, including machine operators, field crew, pile drivers, and supervisory personnel. If the project applicant chooses to implement COA CULT-1d, Construction ALERT Sheet, and a potential resource is discovered on the project site during ground disturbing activities during construction, the project applicant shall hire a qualified archaeologist to monitor any ground disturb-ing activities on the project site during construction (see COA CULT-1b, Construction-Period Monitoring, above), implement avoidance and/or find recovery measures (see COA CULT-1c, Avoidance and/or Find Recovery, above), and prepare an updated ALERT Sheet that addresses the potential resource(s) and other possible resources based on the discovered find found on the project site. If no potential resource(s) are discovered during ground disturbing activities during construction pursuant to the construction ALERT sheet, COA CULT-1, Archaeological Resources, shall apply and be adequate to reduce any potentially significant impact to less than significant.	

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
No significant impacts to human remains would occur with implementation of the City Standard Condition of Approvals listed in this table.		**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
No significant impacts to paleontological resources would occur with implementation of the City Standard Condition of Approvals listed in this table.		**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 under the criteria set forth in Section 15064.5 of the CEQA Guidelines. 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
No significant vibration impacts would occur with implementation of the City Standard Condition of Approvals listed in this table.		**COA CULT-4 (same as COA NOISE-7): Construction Adjacent to 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 adjacent structures, including the 244 Lakeside Drive apartment building, the Schilling Garage, and the Regillus apartments and garage, and design means and methods of construction that shall be utilized to not exceed the thresholds.	LTS

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA CULT-4 *Continued*		To further implement Standard Condition of Approval CULT-4: a) The applicant shall retain an historic preservation architect (who meets the Secretary of the Interior's Standards and Guidelines for Historic Preservation Professional Qualifications) and a structural engineer (Monitoring Team), who shall undertake an Existing Conditions Study (Study) of the 244 Lakeside Drive building, the Schilling Garage, and the Regillus apartments and garage. The purpose of the Study is to establish the baseline condition of the building(s) prior to construction of the Project, including but not limited to the location and extent of any visible cracks or spalls on the building(s), and condition of the roof. The Study shall include written descriptions and photographs of the building(s) and include, without limitation, those physical characteristics that justify their inclusion on or eligibility for the Local Register. The Study shall be reviewed and approved by the City of Oakland's CEDA Deputy Director and Building Official. b) Initial construction activities shall be monitored by the Monitoring Team and if vibrations are above threshold levels, appropriate measures shall be taken to reduce vibrations to below established levels. The Monitoring Team shall continue to regularly monitor the buildings during construction and report any changes to the existing conditions, including but not limited to, expansion of cracks, new spalls, or other exterior deterioration, including roof damage. If there are such changes, appropriate corrective measures shall be taken to reduce vibrations to below established levels, or other measures taken to prevent damage to the building(s). c) Written monitoring reports shall be submitted to the City's CEDA Deputy Director and Building Official on a periodic basis as determined by the Monitoring Team. The structural engineer shall consult with the historic preservation architect, especially if any problems with character defining features of a historic resource are discovered. If in the opinion of the structural engineer, in consultation with the historic preservation architect, substantial adverse impacts to historic resources related to construction activities are found during construction, the Monitoring Team shall immediately inform, both orally and in writing, the project sponsor and/or the project sponsor's designated representative responsible for construction activities and the City Planning and Zoning Division. The project sponsor shall follow the Monitoring Team's recommendations for corrective measures, including halting construction activities in situations where further construction work would damage historic resources, or taking other measures to protect the	

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA CULT-4 *Continued*		building. The historic preservation officer shall establish the frequency of monitoring and reporting prior to the issuance of a demolition, grading, or building permit. d) The project sponsor shall respond to any claims of damage by inspecting the affected property promptly, but in no case more than five working days after the claim was filed and received by the project sponsor's designated representative. Any new cracks or other changes in the structures, including roof damage, shall be compared to pre-construction conditions and a determination shall be made as to whether the proposed project could have caused the damage. In the event that the project is demonstrated to have caused any damage, such damage shall be repaired to the pre-existing condition, provided the property owner approves of such. e) The historic preservation architect shall establish a training program for construction workers involved in the project that emphasizes the importance of protecting historic resources. The program shall include information on recognizing historic materials and directions on how to exercise care when working around and operating equipment near historic structures, including storage of materials away from historic buildings. It shall also include information on means to reduce vibrations from demolition and construction, and preventing other damage, and monitoring and reporting any potential problems that could affect the historic resources in the area. A provision for establishing this training program shall be included in the construction contract, and the contract provisions shall be reviewed and approved by the City of Oakland.	
No significant project excavation and dewatering impacts would occur with implementation of the City Standard Condition of Approvals listed in this table.		**COA CULT-5 (same as COA GEO-3): Geotechnical Report.** Required as part of the submittal of a tentative Tract Map or tentative Parcel Map. • A site-specific, design level, landslide or liquefaction geotechnical investigation for each construction site within the project area shall be required as part if this project and submitted for review and approval to the Building Services Division. Specifically: o 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. o The investigations shall determine final design parameters for the walls, foundations, foundation slabs, surrounding related improvements, and infrastructure (utilities, roadways, parking lots, and sidewalks).	LTS

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA CULT-5 *Continued*		o 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. o 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. o 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. o 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. o 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. • Tentative Tract or Parcel Map approvals shall require, but not be limited to approval of the Geotechnical Report. To further implement this Standard Condition and as recommended by the Preliminary Geotechnical Report, the applicant shall: • Install underground cutoff walls to minimize the draw down of the water table away from the site. • Verify groundwater elevation and seasonal fluctuation of groundwater table. • Evaluate liquefaction potential on the proposed building. • Evaluate settlement of proposed building foundation. • Design mat foundation to resist hydrostatic lift.	

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA CULT-5 *Continued*		• Design basement walls with water stops at construction joints and designed to withstand earth and hydrostatic pressures. Basement walls should be drained above the groundwater table. • Evaluate passive dewatering system before use. • Evaluate shoring system during excavation.	
CULT-1: The proposed project would remove the Schilling Garden, which is considered to be an individual historical resource.	S	MM CULT-1a: Documentation of the Schilling Garden shall be prepared in accordance with the guidelines established for the Historic American Landscapes Survey (HALS). This documentation shall include three components, as well as items in CULT-1b, CULT-1c, and CULT-1d: 1. Photographs: An architectural photographer with HALS experience shall photograph the Schilling Garden in accordance with HALS' "Guidelines of Photography" (http://www.nps.gov/history/hdp/standards/HALS/HALSPhotographyGuidelines.pdf). If large-format photography is not possible, 35mm photography is acceptable, if the negatives are processed according to HALS standards. Photographs should include documentation of all structures and each of the individual garden areas. 2. Drawings: A landscape architect shall prepare drawings of the Schilling Garden in accordance with HALS' "Guidelines for Drawings" (http://www.nps.gov/history/hdp/standards/HALS/HALSDrawingsGuidelines.pdf). These drawings shall include a site plan that identifies all landscape features, including identification of all plant materials. 3. Historical Overview: Using the above site history as a stating point, a historical overview of the Schilling Garden shall be prepared in accordance with HALS' "Guidelines for Historical Reports" (http://www.nps.gov/history/hdp/standards/HALS/HALSHistoryGuidelines.pdf). This overview shall include discussion of the garden's relationship to the 244 Lakeside Drive Apartments, the Schilling garage, and the Regillus apartments and garage. This documentation shall be prepared by a historic landscape architect prior to initiation of a demolition or grading permit. The documentation shall be reviewed and approved by the OCHS and afterward filed with the Oakland Historical Society, the Oakland History Room of the Main Library in Oakland, and the Bancroft Library at the University of California, Berkeley.	SU

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
		MM CULT-1b**:** The HALS documentation in CULT-1a shall also include a salvage plan that identifies the structural and garden elements, including but not limited to, stones (garden and wall) and plant material that can be salvaged and reused on-site and those elements and materials that can be salvaged but not used on-site. The salvage plan shall include a step-by-step relocation process plan for the arbor prepared by a historic landscape architect. The plan shall be submitted prior to clearance of the garden for review and approval of the Landmarks Preservation Advisory Board. Furthermore, clearance of the garden shall not commence until all significant historic features or materials have been identified, properly removed, and relocated for temporary storage under the supervision of a historic landscape architect. The project applicant shall implement the approved salvage plan.	
		MM CULT-1c: The project applicant shall retain a qualified historic preservation architect, or a qualified contractor, with historic preservation experience to investigate the possibility of relocating the arbor. This historic landscape architect consultant shall prepare an assessment report with recommendations for review and approval by the LPAB if the report concludes that the arbor cannot be relocated. The project applicant shall include a reconstruction of the historic arbor in the proposed project's open space design. The arbor's reconstruction would comply with the Secretary of the Interior's Standards for the Treatment of Historic Properties, Standards for Reconstruction. There are six standards for reconstruction: 1. Reconstruction will be used to depict vanished or non-surviving portions of a property when documentary and physical evidence is available to permit accurate reconstruction with minimal conjecture, and such reconstruction is essential to the public understanding of the property. 2. Reconstruction of a landscape, building, structure, or object in its historic location will be preceded by a thorough archeological investigation to identify and evaluate those features and artifacts which are essential to an accurate reconstruction. If such resources must be disturbed, mitigation measures will be undertaken. 3. Reconstruction will include measures to preserve any remaining historic materials, features, and spatial relationships. 4. Reconstruction will be based on the accurate duplication of historic features and elements substantiated by documentary or physical evidence rather than on conjectural designs or the availability of different features from other historic properties. A reconstructed property will re-create the appearance of the non-surviving historic property in materials, design, color, and texture.	

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
		MM CULT-1c *Continued* 5. Reconstruction will be clearly identified as a contemporary re-creation. 6. Designs that were never executed historically will not be constructed. The following steps shall be taken by the project applicant to ensure compliance with the Secretary of the Interior's Standards for the Treatment of Historic Properties, Standards for Reconstruction: 1. An assessment report shall be prepared by a historic landscape architect to assess the potential for the reuse and integration of any existing features of the arbor in the reconstruction. An assessment report shall be submitted to the Oakland Landmarks Preservation Advisory Board for review and approval concurrently with MM CULT-1b. 2. The project applicant shall submit reconstruction plans to the Oakland Landmarks Preservation Advisory Board for review and approval. 3. As documentary and physical evidence would exist within the HALS documentation (CULT-1a and 1b) to permit accurate reconstruction, the project applicant shall use such techniques as taking castings of the concrete trunks and branches for use in duplicating the existing features under the supervision and direction of a historic landscape architect or preservation architect. 4. The project applicant shall place a permanent interpretive exhibit at a location available to the public informing the public of the history and importance of August Schilling, the Schilling Garden, the arbor and adjacent apartment buildings. Use of historic photographs, video, text, brochures, and other graphical methods is encouraged. The exhibit shall be prepared by a qualified historic consultant based on a scope of work and reviewed and approved by the Planning and Zoning Division. The proposed plans will be approved by the Landmarks Preservation Advisory Board and installed prior to certification of occupancy.	
		MM CULT-1d: A retaining wall at the arbor adjacent to a driveway for the Regillus apartment is a historic feature of the Schilling Garden and would be removed by the proposed project. The retaining wall stones shall be included in the salvage plan and the project applicant shall implement the plan in the project's open space design. The existing retaining wall shall be dismantled keeping as many of the stones intact as possible. The stones shall be stored and reused in a wall-type structure, the design of which would be reviewed and approved by the Oakland Landmarks Preservation Advisory Board as part of MM CULT-1b.	

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
		MM CULT-1e: To reduce the significant and unavoidable impact of the loss of the Schilling Garden and the substantial adverse change in the historic significance of 244 Lakeside Drive and the Regillus apartments (described below), the project applicant shall, prior to issuance of a Certificate of Occupancy, make a monetary contribution to the City which shall exclusively be used for (a) development of an Historic Interpretive and Improvement Program, and (b) an historic resource related program such as the Façade Improvement Program or the Property Relocation Assistance Program, as detailed below. a. The Historic Interpretive and Improvement Program shall include interpretive materials such as information plaques depicting the history of the 244 Lakeside Drive Building Group API, district identification features and a printed guide to the 244 Lakeside Drive Building Group with educational features. The Program shall be high quality and provide high public visibility. The Program shall be developed by a qualified historic consultant in consultation with the LPAB and historic preservation staff, based on a City-approved scope of work and submitted to the City for review and approval. The proposed Program shall be approved by the Landmarks Preservation Advisory Board and installed prior to issuance of a Certificate of Occupancy. b. Any remaining funds after implementing the Historic Interpretive and Improvement Program shall be applied towards a historic resource related program include, without limitation, historic landscape preservation projects, rehabilitation within the Lake Merritt API, Façade Improvement Program or the Property Relocation Assistance Program.	
CULT-2: Construction of the residential tower would cause a substantial adverse change in the historical significance of adjacent historic structures and the Lakeside Drive Building Group API.	S	MM CULT-2: Prior to issuance of a building permit, the permit applicant shall redesign the first 12 floors' façade articulation to be compatible, but differentiated, from the historic resources in the API. Methods that could be utilized to obtain this relationship include, but are not limited to: • Relating the proportions of divisions of the glass curtain wall frame to the fenestration patterns of the existing historic API buildings; • Designing the depth of the glass curtain wall frame elements and their hierarchy (with respect to varying depth of elements) to articulate the curtain wall in a manner that relates to the dominant, secondary and tertiary patterns of the existing historic API building fenestration patterns; • Using glass tints, colors, etc., in the curtain wall frame divisions to further reinforce the relationship of hierarchy of patterns of the historic API.	SU

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
MM CULT-2 *Continued*		The proposed façade shall be submitted for review and approval by the LPAB. The new façade shall be integral and compatible with the overall building façade design and articulation. Implementation of Mitigation Measure CULT-1e would also reduce the substantial adverse change in the historic significance of 244 Lakeside Drive and the Regillus apartments; however, this impact would remain significant and unavoidable.	
CULT-3. The proposed project would entail construction activities in close proximity to adjacent historical resources, including the 244 Lakeside Drive Apartments, the Schilling Garage, and the Regillus Apartments and Garage, which could result in impacts to these structures as well as Snow Park.	S	MM CULT-3a: An 8-foot construction fence (chain-link with slats or plywood) shall be constructed between the 244 Lakeside Drive Apartment building and the path that would be used to move construction materials from staging areas on 244 Lakeside Drive to the project site to provide additional protection to this structure.[6] This path shall be landscaped prior to certification of occupancy per the plan approved by the Planning and Zoning Division. MM CULT-3b: Periodic inspection of both roofs and the two elevations facing the project shall be conducted by a preservation architect and/or structural engineer so as to observe and, if necessary, interrupt and remedy the deposition of construction materials on the roofs or the marring of the elevation's surfaces by falling debris. **COA CULT-4 (same as COA NOISE-7): Construction Adjacent to Historic Structures.**	LTS
CULT-4. The proposed project would result in a cumulative impact to the 244 Lakeside Drive Apartment Building Group API.	S	**Mitigation Measures CULT-1e and CULT-2**	SU
I. Biological Resources			
No significant impacts to nesting raptors on the project site would occur with implementation of the City Standard Condition of Approval listed in this table.		**COA BIO-1: Tree Removal During Breeding Season.** *Prior to issuance of a tree removal permit. .* To the extent feasible, removal of any tree and/or other vegetation suitable for nesting birds shall not occur during the breeding season of March 15 to August 15. If tree removal must occur during the breeding season, all sites shall be surveyed by a qualified biologist to verify the presence or absence of nesting birds. Pre-removal surveys shall be conducted within 15 days prior to the start of work from March 15 through May 31, and within 30 days prior to the start of work from June 1 through August 15. The pre-removal surveys shall be submitted to the Planning and Zoning Division and the Tree Services Division of the Public Works Agency. If the survey indicates the potential presence of nesting birds, the biologist shall determine an	LTS

[6] This Mitigation Measure would not be applicable if, as part of the construction management plan, the applicant proposes all construction staging and access be provided from 19th Street. See COA TRANS-2 and COA TRANS-3.

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA BIO-1 *Continued*		appropriately sized buffer around the nest in which no work will be allowed until the young have successfully fledged. The size of the nest buffer will be determined by the biologist in consultation with the CDFG, and will be based to a large extent on the nesting species and its sensitivity to disturbance.	
No significant impacts to trees on the project site would occur with implementation of the City Standard Condition of Approval listed in this table.		**COA BIO-2: Tree Removal Permit.** *Prior to issuance of a demolition, grading, or building permit.* Prior to removal of any protected trees, per the Protected Tree Ordinance, located on the project site or in the public right-of-way adjacent to the project, the project applicant must secure a tree removal permit from the Tree Division of the Public Works Agency, and abide by the conditions of that permit.	LTS
No significant impacts to trees on the project site would occur with implementation of the City Standard Condition of Approval listed in this table.		**COA BIO-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: • No tree replacement shall be required for the removal of non-native 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. • Replacement tree species shall consist of Sequoia sempervirens (Coast Redwood), Quercus agrifolia (Coast Live Oak), Arbutus menziesii (Madrone), Aesculus californica (California Buckeye) or Umbellularia californica (California Bay Laurel) or other tree species acceptable to the Tree Services Division.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. • Minimum planting areas must be available on site as follows: o For Sequoia sempervirens, three hundred fifteen square feet per tree; o For all other species listed in #2 above, seven hundred (700) square feet per tree. • 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. • Plantings shall be installed prior to the issuance of a final inspection of building permit, subject to seasonal constraints, and shall be maintained by the project applicant until established. The Tree Reviewer of the Tree Division of the Public Works Agency may require a landscape plan showing the replacement planting and the method of irrigation. Any replacement planting which fails to become established within one year of planting shall be replanted at the project applicant's expense.	LTS

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
No significant impacts to trees on the project site would occur with implementation of the City Standard Condition of Approval listed in this table.		**COA BIO-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: • 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. • 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. • 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. • 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. • 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.	LTS

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA BIO-4 *Continued*		• 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.	
No significant bird strike impacts would occur with implementation of the City Standard Condition of Approval listed in this table.		**COA BIO-5 (same as COA AES-2): Bird Collision Reduction.** *Concurrent with submittal of planning applications or a building permit, whichever occurs first, and ongoing.* The project applicant, or his or her successor, including the building manager or Home Owner's Association, shall submit plans to the Planning and Zoning Division, for review and approval, indicating how they intend to reduce potential bird collisions to the maximum feasible extent. The applicant shall implement the approved plan, including all mandatory measures, as well as applicable and specific project Best Management Practice (BMP) strategies to reduce bird strike impacts to the maximum feasible extent. a) Mandatory measures include **all** of the following: i) Comply with federal aviation safety regulations for large buildings by installing minimum intensity white strobe lighting with three second flash instead of blinking red or rotating lights. ii) Minimize the number of and co-locate rooftop-antennas and other rooftop structures. iii) Monopole structures or antennas shall not include guy wires. iv) Avoid the use of mirrors in landscape design. v) Avoid placement of bird-friendly attractants (i.e., landscaped areas, vegetated roofs, water features) near glass. b) Additional BMP strategies to consider include the following: i) Make clear or reflective glass visible to birds using visual noise techniques. Examples include: 1. Use of opaque or transparent glass in window panes instead of reflective glass. 2. Uniformly cover the outside clear glass surface with patterns (e.g., dots, decals, images, abstract patterns). Patterns must be separated by a minimum 10 centimeters (cm). 3. Apply striping on glass surface. If the striping is less than 2 cm wide it must be applied vertically at a maximum of 10 cm apart (or 1 cm wide strips at 5 cm distance)	LTS

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA BIO-5 *Continued*		4. Install paned glass with fenestration patterns with vertical and horizontal mullions of 10 cm or less. 5. Place decorative grilles or louvers with spacing of 10 cm or less. 6. Apply one-way transparent film laminates to outside glass surface to make the window appear opaque on the outside. 7. Install internal screens through non-reflective glass (as close to the glass as possible) for birds to perceive windows as solid objects. 8. Install windows which have the screen on the outside of the glass. 9. Use UV-reflective glass. Most birds can see ultraviolet light, which is invisible to humans. 10. If it is not possible to apply glass treatments to the entire building, the treatment should be applied to windows at the top of the surrounding tree canopy or the anticipated height of the surrounding vegetation at maturity. ii) Mute reflections in glass. Examples include: 1. Angle glass panes toward ground or sky so that the reflection is not in a direct line-of-sight (minimum angle of 20 degrees with optimum angle of 40 degrees) 2. Awnings, overhangs, and sunshades provide birds a visual indication of a barrier and may reduce image reflections on glass, but do not entirely eliminate reflections. iii) Reduce Light Pollution. Examples include: 1. Turn off all unnecessary interior lights from 11 p.m. to sunrise. 2. Reduce perimeter lighting whenever possible. iv) Institute a building operation and management manual that promotes bird safety. Example text in the manual includes: 1. Donation of discovered dead bird specimens to authorized bird conservation organization or museums to aid in species identification and to benefit scientific study, as per all federal, state and local laws. 2. Production of educational materials on bird-safe practices for the building occupants	

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA BIO-5 *Continued*		3. Schedule nightly maintenance during the day or to conclude before 11 p.m., if possible. **COA UTIL-1: Required Landscape Plan for New Construction and Certain Additions to Residential Facilities.**	
BIO-1: The proposed project could impact the root systems or canopies of protected trees adjacent to the project site.	S	MM BIO-1: Exposed roots shall be sharply re-cut and covered immediately after the damage occurs. If trimming of trees on adjacent properties is required, the project applicant must be granted permission by the adjacent property owner prior to initiating work. All tree trimming shall be performed by a professional arborist. In the case trees on Snow Park, the applicant shall contact the City of Oakland Arborist prior to initiating work.	LTS
NON CEQA RECOMMENDED PROJECT SPECIFIC CONDITIONS	LTS	Although not necessary to address a significant CEQA impact, the following conditions are recommended to further reduce impacts to migratory birds. **RECOMMENDATION BIO-1:** Night-time illumination of the vertical panels and up-lighting at the base of the architectural notch should be limited to the non-migratory periods of December through February and June through August.	LTS
J. Soils, Geology, and Seismicity			
No significant soil, geology, and seismicity impacts would occur with implementation of the City Standard Condition of Approval listed in this table.		**COA GEO-1 (same as HYDRO-1): Erosion and Sedimentation Control Plan.** *Applies to all projects requiring a Grading Permit. Prior to any grading activities* • The project applicant shall obtain a grading permit. The grading permit application shall include an erosion and sedimentation control plan for review and approval by the Building Services Division. The erosion and sedimentation control plan shall include all necessary measures to be taken to prevent excessive stormwater runoff or carrying by stormwater runoff of solid materials on to lands of adjacent property owners, public streets, or to creeks as a result of conditions created by grading operations. The plan shall include, but not be limited to, such measures as short-term erosion control planting, waterproof slope covering, check dams, interceptor ditches, benches, storm drains, dissipation structures, diversion dikes, retarding berms and barriers, devices to trap, store and filter out sediment, and stormwater retention basins. Off-site work by the project applicant may be necessary. The project applicant shall obtain permission or easements necessary for off-site work. There shall be a clear notation that the plan is subject to changes as changing conditions occur. Calculations of anticipated stormwater runoff and sediment volumes shall be included, if required by the Director of Development or designee. The plan shall specify that, after construction is complete, the project applicant shall ensure that the storm drain system shall be inspected and that the project applicant shall clear the system of any debris or sediment.	LTS

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA GEO-1 *Continued*		Ongoing throughout grading and construction activities: • 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.	
No significant soil, geology, and seismicity impacts would occur with implementation of the City Standard Condition of Approval listed in this table.		**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 and submitted for review and approval by the Building Services Division. The soils reports shall be based, at least in part, on information obtained from on-site testing. Specifically the minimum contents of the report should include: • Logs of borings and/or profiles of test pits and trenches: o 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. o The depth of each boring shall be sufficient to provide adequate design criteria for all proposed structures. o All boring logs shall be included in the soils report. • Test pits and trenches o Test pits and trenches shall be of sufficient length and depth to establish a suitable soils profile for the design of all proposed structures. o Soils profiles of all test pits and trenches shall be included in the soils report. • 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. • 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.	LTS

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA GEO-2 *Continued*		• Soils Report. A written report shall be submitted which shall include, but is not limited to, the following: o Site description; o Local and site geology; o Review of previous field and laboratory investigations for the site; o 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; o 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; o Conclusions and recommendations for foundations and retaining structures, resistance to lateral loading, slopes, and specifications, for fills, and pavement design as required; o 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; o All other items which a Soils Engineer deems necessary; o The signature and registration number of the Civil Engineer preparing the report. • 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.	
No significant soil, geology, and seismicity impacts would occur with implementation of the City Standard Condition of Approval listed in this table.		**COA GEO-3 (Same as CULT-5): Geotechnical Report.** Required as part of the submittal of a tentative Tract Map or tentative Parcel Map. • A site-specific, design level, landslide or liquefaction geotechnical investigation for each construction site within the project area shall be required as part if this project and submitted for review and approval to the Building Services Division. Specifically:	LTS

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA GEO-3 *Continued*		o 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. o The investigations shall determine final design parameters for the walls, foundations, foundation slabs, surrounding related improvements, and infrastructure (utilities, roadways, parking lots, and sidewalks). o 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. o 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. o 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. o 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. o 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. • Tentative Tract or Parcel Map approvals shall require, but not be limited to approval of the Geotechnical Report. To further implement this Standard Condition and as recommended by the Preliminary Geotechnical Report, the applicant shall: • Install underground cutoff walls to minimize the draw down of the water table away from the site.	

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA GEO-3 *Continued*		• Verify groundwater elevation and seasonal fluctuation of groundwater table. • Evaluate liquefaction potential on the proposed building. • Evaluate settlement of proposed building foundation. • Design mat foundation to resist hydrostatic lift. • Design basement walls with water stops at construction joints and designed to withstand earth and hydrostatic pressures. Basement walls should be drained above the groundwater table. • Evaluate passive dewatering system before use. • Evaluate shoring system during excavation.	
K. Hydrology and Water Quality			
No significant hydrology or water quality impacts would occur with implementation of the City Standard Condition of Approval listed in this table.		**COA HYDRO-1 (Same as COA GEO-1): Erosion and Sedimentation Control Plan.** *Prior to any grading activities.* • The project applicant shall obtain a grading permit. The grading permit application shall include an erosion and sedimentation control plan for review and approval by the Building Services Division. The erosion and sedimentation control plan shall include all necessary measures to be taken to prevent excessive stormwater runoff or carrying by stormwater runoff of solid materials on to lands of adjacent property owners, public streets, or to creeks as a result of conditions created by grading operations. The plan shall include, but not be limited to, such measures as short-term erosion control planting, waterproof slope covering, check dams, interceptor ditches, benches, storm drains, dissipation structures, diversion dikes, retarding berms and barriers, devices to trap, store and filter out sediment, and stormwater retention basins. Off-site work by the project applicant may be necessary. The project applicant shall obtain permission or easements necessary for off-site work. There shall be a clear notation that the plan is subject to changes as changing conditions occur. Calculations of anticipated stormwater runoff and sediment volumes shall be included, if required by the Director of Development or designee. The plan shall specify that, after construction is complete, the project applicant shall ensure that the storm drain system shall be inspected and that the project applicant shall clear the system of any debris or sediment. Ongoing throughout grading and construction activities. • 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

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
No significant hydrology or water quality impacts would occur with implementation of the City Standard Condition of Approval listed in this table.		**COA HYDRO-2: 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 Construction-Permit-Phase Stormwater Supplemental Form to the Building Services Division. The project drawings submitted for the building permit (or other construction-related permit) shall contain a stormwater management plan, for review and approval by the City, to manage stormwater run-off and to limit the discharge of pollutants in stormwater after construction of the project to the maximum extent practicable. • The post-construction stormwater management plan shall include and identify the following: o All proposed impervious surface on the site; o Anticipated directional flows of on-site stormwater runoff; and o Site design measures to reduce the amount of impervious surface area and directly connected impervious surfaces; and o Source control measures to limit the potential for stormwater pollution; and o Stormwater treatment measures to remove pollutants from stormwater runoff. • The following additional information shall be submitted with the post-construction stormwater pollution management plan: o Detailed hydraulic sizing calculations for each stormwater treatment measure proposed; and o 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.	LTS

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA HYDRO-2 *Continued*		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.[7] Prior to final permit inspection, the applicant shall implement the approved stormwater pollution management plan.	
No significant hydrology or water quality impacts would occur with implementation of the City Standard Condition of Approval listed in this table.		**COA HYDRO-3: 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

[7] Alternative Compliance Programs: Under the terms of the Municipal Stormwater permit granted by the RWQCB, 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.

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
No significant hydrology or water quality impacts would occur with implementation of the City Standard Condition of Approval listed in this table.		**COA HYDRO-4: Stormwater and Sewer.** *Prior to completing the final design for the project's sewer service.* Confirmation of the capacity of the City's surrounding storm-water 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 improve-ments 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 Sewer and Stormwater Division. 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. **COA SERV-1: Conformance with other Requirements.**	LTS
HYD-1: Water supply well(s) at the project site, if not properly managed or decommissioned, could be damaged during construction, potentially allowing impacts to groundwater quality.	S	MM HYD-1: The existing water supply well on the project site, and other well(s) if discovered, shall be properly abandoned and the case closed in compliance with the California Department of Water Resources California Well Standards, and Alameda County Environmental Health Department requirements and shall be submitted to the Building Services Division and Planning and Zoning Division prior to final approval of the grading plan.	LTS
L. Public Health and Hazards			
No significant public health or hazards impacts would occur with implementation of the City Standard Condition of Approval listed in this table.		**COA HAZ-1: Hazards Best Management Practices.** *Prior to commencement of demolition, grading, or construction.* The project applicant and construction contractor shall ensure that construction of Best Management Practices (BMPs) are implemented as part of construction to minimize the potential negative effects to groundwater and soils. These shall include the following: • Follow manufacturer's recommendations on use, storage, and disposal of chemical products used in construction; • Avoid overtopping construction equipment fuel gas tanks; • During routine maintenance of construction equipment, properly contain and remove grease and oils; • Properly dispose of discarded containers of fuels and other chemicals.	LTS

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA HAZ-1 *Continued*		• 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 USTs, elevator shafts, clarifiers, and subsurface hydraulic lifts when on-site demolition, or construction activities would potentially affect a particular development or building. • 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, 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.	
No significant public health or hazards impacts would occur with implementation of the City Standard Condition of Approval listed in this table.		**COA HAZ-2 (Same as COA AIR-2): Asbestos Removal in Structures.** *Prior to issuance of a demolition permit.* If asbestos-containing materials (ACM) are found to be present in building materials to be removed, demolition and disposal, the project applicant shall submit specifications signed by a certified asbestos consultant for the removal, encapsulation, or enclosure of the identified ACM in accordance with all applicable laws and regulations, including but not necessarily limited to: California Code of Regulations; Title 8, Business and Professions Code; Division 3; California Health & Safety Code 25915-25919.7; and Bay Area Air Quality Management District, Regulation 11, Rule 2, as may be amended.	LTS
No significant public health or hazards impacts would occur with implementation of the City Standard Condition of Approval listed in this table.		**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. The applicant shall implement the approved recommendations.	LTS

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
No significant public health or hazards impacts would occur with implementation of the City Standard Condition of Approval listed in this table.		**COA HAZ-4: Lead-Based Paint/Coatings, Asbestos, or PCB Occurrence Assessment.** *Prior to issuance of any demolition, grading or building permit.* The project applicant shall submit a comprehensive assessment report to the Fire Prevention Bureau, Hazardous Materials Unit, signed by a qualified environmental professional, documenting the presence or lack thereof of asbestos-containing materials (ACM), lead-based paint, and any other building materials or stored materials classified as hazardous waste by State or federal law for review and approval.	LTS
No significant public health or hazards impacts would occur with implementation of the City Standard Condition of Approval listed in this table.		**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: • 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. • Obtain and submit written evidence of approval for any remedial action if required by a local, State, or federal environmental regulatory agency. • Submit 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.	LTS
No significant public health or hazards impacts would occur with implementation of the City Standard Condition of Approval listed in this table.		**COA HAZ-6: Lead-based Paint Remediation.** *Prior to issuance of any demolition, grading or building permit.* If lead-based paint is present, the project applicant shall submit specifications to the Fire Prevention Bureau, Hazardous Materials Unit signed by a certified Lead Supervisor, Project Monitor, or Project Designer for the stabilization and/or removal of the identified lead paint in accordance with all applicable laws and regulations, including but not necessarily limited to: Cal/OSHA's Construction Lead Standard, 8 CCR1532.1 and DHS regulation 17 CCR Sections 35001 through 36100, as may be amended.	LTS
No significant public health or hazards impacts would occur with implementation of the City Standard Condition of Approval listed in this table.		**COA HAZ-7: Other Materials Classified as Hazardous Waste.** *Prior to issuance of any demolition, grading or building permit.* If other materials classified as hazardous waste by State or federal law are present, the project applicant shall submit written confirmation to Fire Prevention Bureau, Hazardous Materials Unit that all State and federal laws and regulations shall be followed when profiling, handling, treating, transporting and/or disposing of such materials.	LTS

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
No significant public health or hazards impacts would occur with implementation of the City Standard Condition of Approval listed in this table.		**COA HAZ-8: Health and Safety Plan per Assessment.** *Prior to issuance of any demolition, grading or building permit.* If the required lead-based paint/coatings, asbestos, or PCB assessment finds presence of such materials, the project applicant shall create and implement a health and safety plan to protect workers from risks associated with hazardous materials during demolition, renovation of affected structures, and transport and disposal. The applicant shall implement the approved plan.	LTS
M. Utilities and Infrastructure			
No significant impacts would occur to utilities or infrastructure with implementation of the City Standard Condition of Approval listed in this table.		**COA UTIL-1: Required Landscape Plan for New Construction and Certain Additions to Residential Facilities**. *Prior to issuance of a building permit.* Submittal and approval of a landscape plan for the entire site is required for the establishment of a new residential unit (excluding secondary units of five hundred (500) square feet or less), and for additions to Residential Facilities of over five hundred (500) square feet. The landscape plan and the plant materials installed pursuant to the approved plan shall conform with all provisions of Chapter 17.124 of the Oakland Planning Code, including the following: a) Landscape plan shall include a detailed planting schedule showing the proposed location, sizes, quantities, and specific common botanical names of plant species. b) Landscape plan shall incorporate landscaping practices considered pest-resistant, fire-resistant, and drought-tolerant. c) All landscape plans shall show proposed methods of irrigation. The methods shall ensure adequate irrigation of all plant materials for at least one growing season. To further implement Standard Condition of Approval UTIL-1: • The landscape plan shall incorporate Mitigation Measure CULT-1b, -1c, and 1d and shall be reviewed by a wind consultant; street trees shall be replaced pursuant to COA BIO-3, and the plan shall describe the storage and transplant procedures of the existing trees from the garden to ensure maximum survivability during construction. Furthermore, the green roof shall be reviewed by a qualified ornithologist so as to avoid creating bird friendly habitat, COA-BIO-5.	LTS
No significant impacts would occur to utilities or infrastructure with implementation of the City Standard Condition of Approval listed in this table.		**COA UTIL-2: Underground Utilities.** *Prior to issuance of a building permit.* The project applicant shall submit plans for review and approval by the Building Services Division and the Public Works Agency, and other relevant agencies as appropriate, that show all new electric and telephone facilities; fire alarm conduits; street light wiring; and other wiring, conduits, and similar facilities placed underground. The new facilities shall be placed underground along the project applicant's street frontage and from the project applicant's structures to the point of service. The plans shall show all electric, telephone, water service, fire water service, cable, and fire alarm facilities installed in accordance with standard specifications of the serving utilities.	LTS

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
No significant impacts would occur to utilities or infrastructure with implementation of the City Standard Condition of Approval listed in this table.		**COA UTIL-3: Improvements in the Public Right-of-Way (General)**. *Approved prior to the issuance of a P-job or building permit.* The project applicant shall submit Public Improvement Plans to Building Services Division for adjacent public rights-of-way (ROW) showing all proposed improvements and compliance with the conditions and/or mitigations and City requirements including but not limited to curbs, gutters, sewer laterals, storm drains, street trees, paving details, locations of transformers and other above ground utility structures, the design specifications and locations of facilities required by the East Bay Municipal Utility District (EBMUD), street lighting, on-street parking and accessibility improvements complaint with applicable standards and any other improvements or requirements for the project as provided for in this Approval. Encroachment permits shall be obtained as necessary for any applicable improvements located within the public ROW. • Review and confirmation of the street trees by the City's Tree Services Division is required as part of this condition and/or mitigations. • The Planning and Zoning Division and the Public Works Agency will review and approve designs and specifications for the improvements. Improvements shall be completed prior to the issuance of the final building permit. • The Fire Services Division will review and approve fire crew and apparatus access, water supply availability and distribution to current codes and standards. To further implement COA UTIL-3, the project applicant shall implement the following fire safety measures: • One elevator would be designed for fire-fighter use; it would be in a hardened shaft and would comply with the requirements of City of Oakland Fire Department. • Rescue air stations would be provided at every fifth floor. They would be in compliance with the patented systems designed by Rescue Air Systems, and to the standards required by the City of Oakland Fire Department. • The two viewing galleries on the 40th floor of the building would be hardened with 4-hour walls and ordinary hazard sprinkler spacing in lieu of light hazard spacing. The floor would project 3 feet beyond the face of the building to ease access from outside and above the building. • Both stairs would have 4-hour walls. • Each standpipe would be sized so as to be able to supply the building's needs without need for the other.	LTS

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA UTIL-3 *Continued*		• The swimming pool would provide excess capacity of on-site water supply above and beyond that stored in the basement. The pool water would also be made accessible from the street to act as a secondary reservoir for the neighborhood. • Satellite Fire Control Rooms would be provided on floors 10, 20 and 30, within which there would be computer access to the Building Information Management data. As a part of the Fire-Life-Safety provisions in the building, all security cameras, fire and smoke control and detection systems would, where practicable, be addressable and displayed on digitized floor plans where their "condition" can be noted and determined. The intent is to provide locations inside the building where fire fighters can "read" the condition of the building in the event of a fire. • 800 MHz Antennas throughout the building and a redundant internal communication system would be provided. The internal communication system would have communication devices in the stairwells on each floor and in the Satellite Fire Control Rooms.	
No significant impacts would occur to utilities or infrastructure with implementation of the City Standard Condition of Approval listed in this table.		**COA UTIL-4: Payment for Public Improvements**. *Prior to issuance of a final inspection of the building permit*. The project applicant shall pay for and install public improvements made necessary by the project including damage caused by construction activity.	LTS
No significant impacts would occur to utilities or infrastructure with implementation of the City Standard Condition of Approval listed in this table.		**COA UTIL-5: 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	LTS

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
COA UTIL-5 *Continued*		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 accordance with current City requirements. The proposed program shall be 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 words Agency for review and Approval. Any incentive programs shall remain fully operational as long as residents and businesses exist at the project site.	
No significant impacts would occur to utilities or infrastructure with implementation of the City Standard Condition of Approval listed in this table.		**COA-UTIL-6: Stormwater 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 Sewer and Stormwater Division. 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

Table II-1 *Continued*

Environmental Impacts	Level of Significance Without Mitigation	Standard Conditions of Approval (COA)/Mitigation Measures (MM)	Level of Significance With Mitigation
N. Public Services and Recreation			
No significant impact to public services or recreation facilities would occur with implementation of the City Standard Condition 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.* • The project applicant shall comply with all other applicable federal, state, regional and/or local laws/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. • 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.	LTS
NON CEQA RECOMMENDED PROJECT SPECIFIC CONDITIONS		Although not necessary to address a significant CEQA impact, the following conditions are recommended to further reduce impacts to police services. **RECOMMENDATION SERV-1:** Although not required to mitigate a CEQA impact, the following recommendation should be considered to improve safety and further reduce the less-than-significant police service impacts. The applicant should incorporate as many Crime Prevention Through Environmental Design (CPTED) techniques into the project design as possible and give new residents the opportunity to participate in a Neighborhood Watch Program	LTS

Source: LSA Associates, Inc., 2010.

III. PROJECT DESCRIPTION

This chapter describes the proposed Emerald Views Residential Development Project (proposed project) that is evaluated in this EIR. The proposed project involves the development of a high-rise residential tower with approximately 370 units and five levels of below-grade parking. The tower would be approximately 457 feet tall, measured from grade to the top of roof forms.

A description of the proposed project's regional and local context, planning context, objectives, and physical elements is provided below, in addition to a discussion of required project approvals and entitlements.

A. PROJECT SITE

The following section describes the project site's location, surrounding land uses, individual site characteristics, and existing General Plan and Zoning designations.

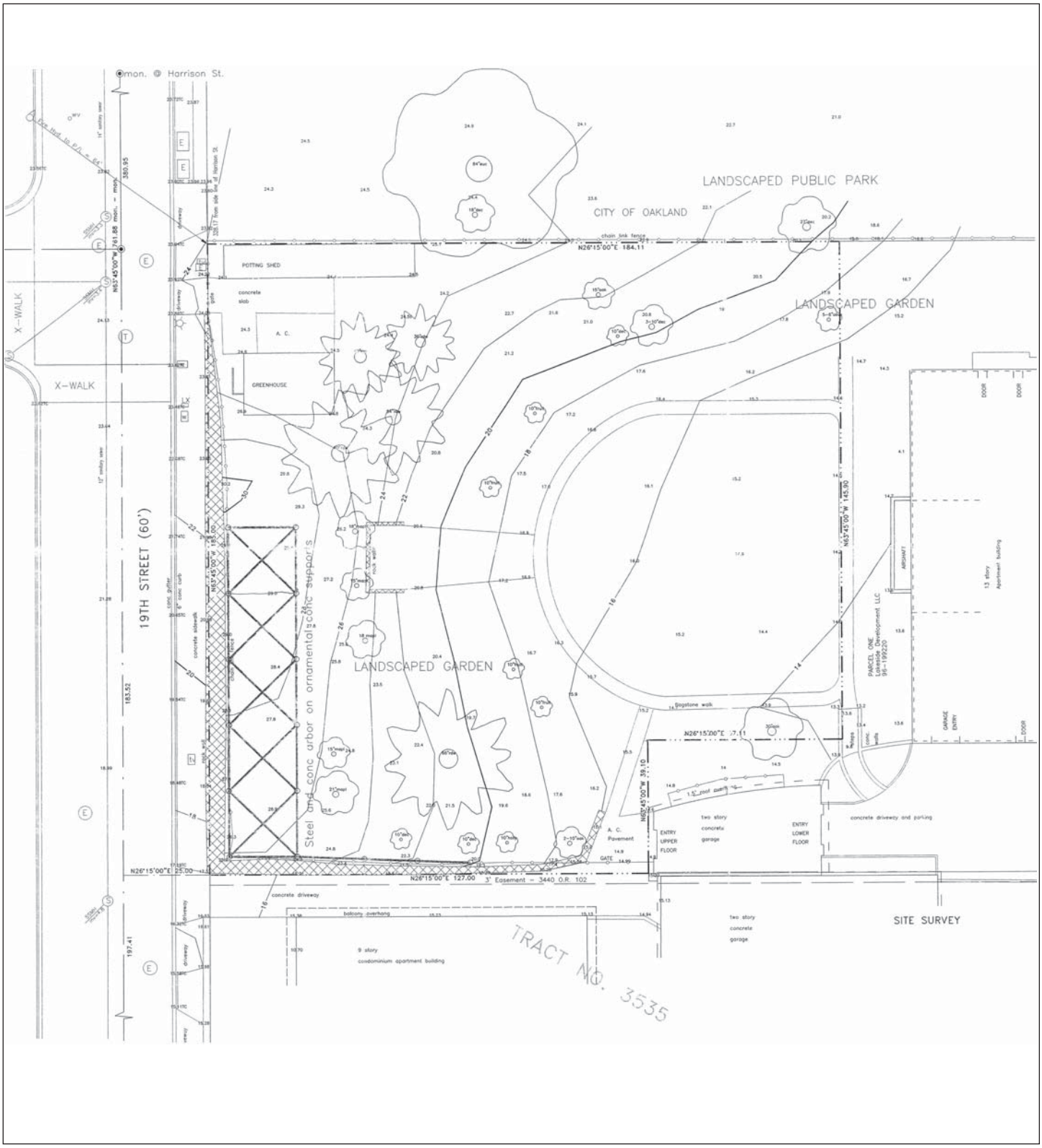
1. Site Characteristics and Current Site Conditions

The project site is approximately 31,827 square feet (APN 008-634-003). It is currently covered with a private, English garden associated with the historic August Shilling Estate. (The Shilling house was previously on the site currently occupied by the Regillus apartment building.) A graphic illustrating existing conditions on the site is shown in Figure III-1.

View South Across Lawn

A chain link fence surrounds the site and is intermittently covered with vines and bushes. The southern and eastern edges of the project site contain a rock embankment, covered in ivy, rising to a maximum of nine feet above the adjacent property. The eastern embankment drops down to the driveway at the Regillus building and the southern embankment drops down to 19th Street.

There is a manicured lawn on the north and central portion of the site. The lawn is surrounded by a semi-circular walkway that forms the boundary between the lawn and English garden areas to the east, south and west. The garden areas slope upwards away from the lawn.



LSA

FIGURE III-1

N

0 15 30

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Emerald Views Residential Development EIR

Existing Conditions/Site Survey

SOURCE: SAM KUSHNER, LAND SURVEYOR, OAKLAND, JUNE 2006.

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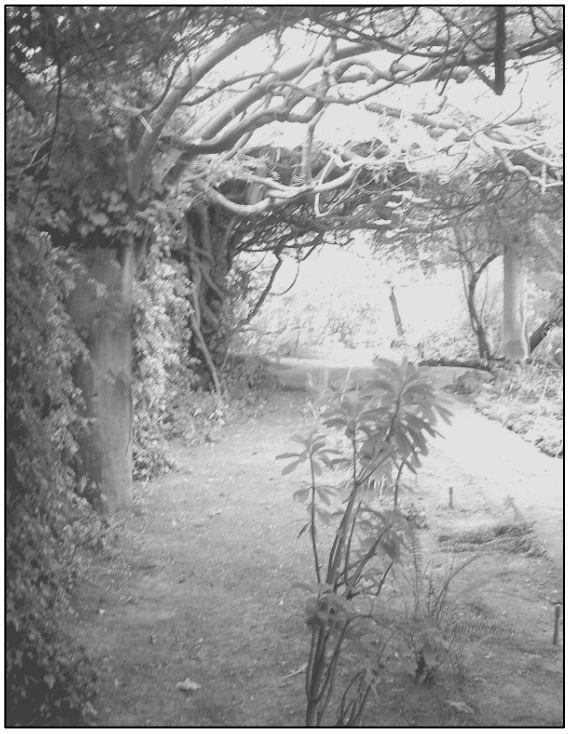
Landscape and Path



View of Concrete Arbor

The eastern garden area includes azaleas, tree ferns, holly trees, and laurel trees. The southern garden is the largest area. It steps up to a landing with a fountain. It also includes lower planting beds with trees, shrubs, and flowers, and upper planting areas with mature redwood trees, a concrete arbor with wysteria and climbing roses (also known as the "hanging gardens") along the southern property boundary, two small green houses, and a chain-link gate with decorative medallion and paved entrance providing restricted access from 19th Street. The western garden area includes magnolia trees, Japanese maple trees, cedar trees, quince, roses, and a variety of other plants. There are footpaths and benches throughout the garden.

Bench in the Shade

This garden is a Designated Historic Property (DHP) and is rated A1+ of the "highest importance" by the Oakland Cultural Heritage Survey (OCHS).[1] The garden is an anchor and primary contributor to

[1] Community and Economic Development Agency (CEDA) website, "Summary of Historical and Architectural Rating System", Oakland, California, www.oaklandnet.com/government/ceda/revised/planningzoning/Historic Preservation/HP-overviewH.html.

the 244 Lakeside Drive Building Group, Area of Primary Importance (API). The garden is also a contributor to the Lake Merritt API.

The project site is not located on the current version of the Cortese List (a list of hazardous waste and hazardous substances sites posted by the Department of Toxic Substances Control, State Water Resources Control Board, and Integrated Waste Management Board).

The Oakland General Plan designates the project site as *Central Business District*, which allows high density mixed use and residential uses. The project site is in the *R-90, Downtown Apartment Residential Zone*, *S-4 Design Review Combining Zone* and *S-17 Downtown Residential Open Space Combining Zone* districts.

2. Location and Surrounding Land Use

The City of Oakland (City) is located in Alameda County on the eastern side of San Francisco Bay, approximately 4.5 miles east of San Francisco. The proposed project site is located within Downtown Oakland on the northern edge of the Gold Coast District and adjacent to the Kaiser Center and Lake Merritt District. The project site and regional location are shown in Figure III-2. A more detailed vicinity map is shown in Figure III-3.

By 1900, much of Central Oakland from Downtown to Lake Merritt had been developed. Central Oakland was established as Oakland's civic, cultural, and retail center; by 1920 a concentration of mid-rise buildings (considered high-rise buildings at the time) had been developed.

Today, the Central Oakland/Chinatown area is Oakland's primary employment and civic center as well as its transportation hub. The Gold Coast District is characterized by historic and recently constructed apartment buildings. The primary land uses in the adjacent Lake Merritt District and Kaiser Center include retail and commercial office space and are located northwest of the project site.

Land uses surrounding the project site consist of high-density residential areas to the north, east, and south and parkland to the west. North of the project site are the 13-story (12-stories above a garage podium) 244 Lakeside apartment building, the 2-story garage, and a portion of Snow Park. East of the site is the 8-story Regillus apartment building, while further east are open space and recreational areas associated with Lake Merritt. 19th Street forms the southern border of the project site; across 19th Street there are mid-rise office and residential buildings. Snow Park is located west of the site, with commercial and retail high-rise buildings further to the west of the site.

Regional vehicular access to the project area is via the 18th Street exit from Interstate 980 (I-980) and the Oak Street exit from Interstate 880 (I-880). The Oakland 19th Street BART station is approximately four blocks (0.2 miles) west of the project area. BART provides access to the project area from San Francisco, cities along the eastern side of San Francisco Bay, and suburbs in Contra Costa County and Alameda County. In addition, the project area is accessible by Alameda-Contra Costa (AC) Transit buses, which run frequently along 20th Street and Lakeside Drive.

LSA

FIGURE III-2

N

0 500 1000

FEET

LEGEND

PROJECT SITE

Emerald Views Residential Development EIR

Project Vicinity and Regional Location Map

SOURCE: GOOGLE, LSA ASSOCIATES, INC., 2006.

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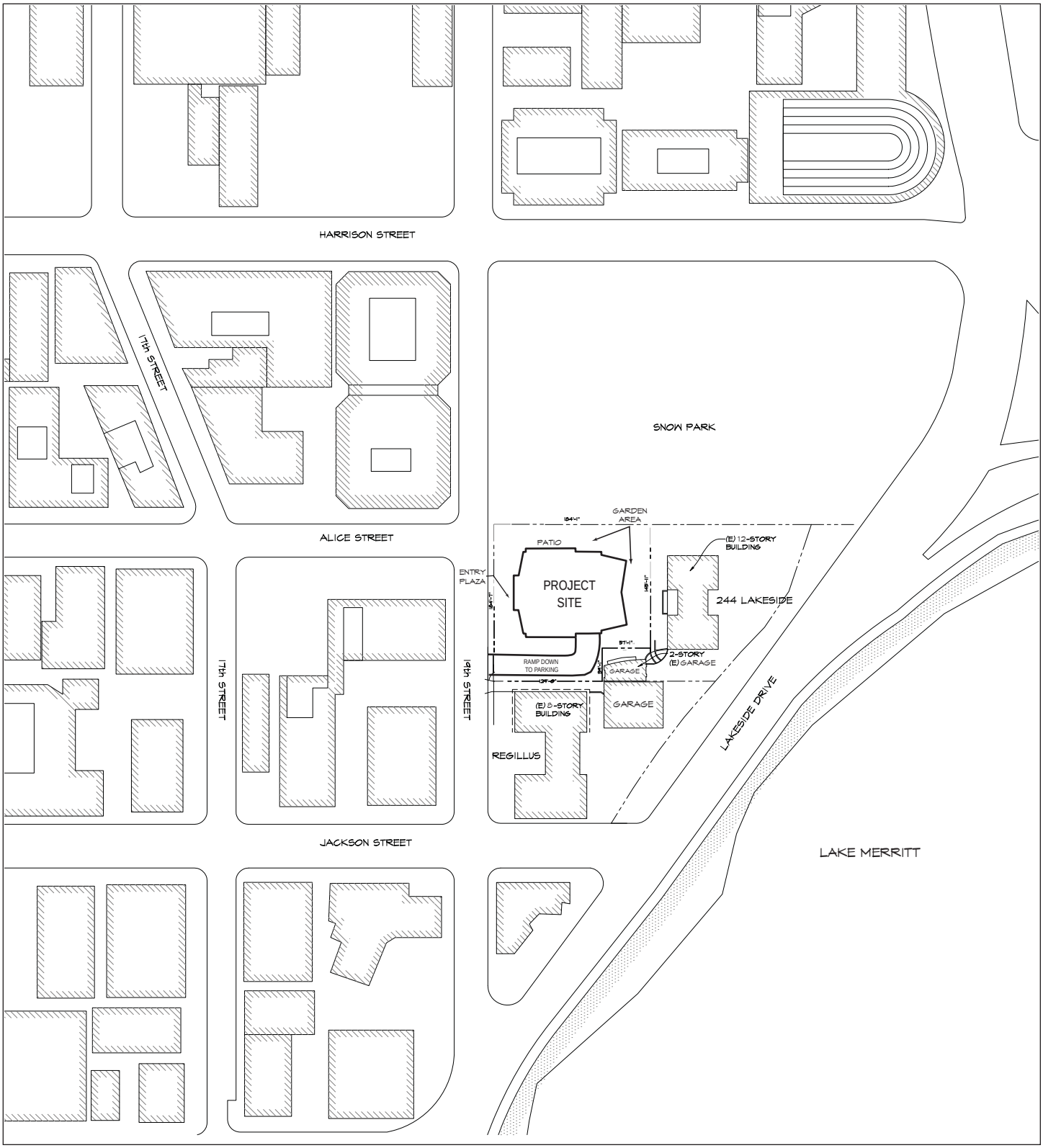

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FIGURE III-3

N

0 120 240

FEET

Emerald Views Residential Development EIR

Project Site Map

SOURCE: IAN BURCHALL & ASSOCIATES, INC., 2007.

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B. PROJECT OBJECTIVES

The Emerald Views Residential Development Project applicant seeks to develop high-density housing in the City of Oakland in proximity to jobs, services, and amenities. Specifically, the project applicant seeks to:

- Develop a high-rise residential tower about 457 feet tall with approximately 370 residential units and five levels of below-grade parking providing approximately 357 parking spaces.
- Design a project that assists the Central Business District in becoming a premier location in the region for urban residential living by helping create a high density residential link between Lake Merritt and downtown Oakland.
- Design a project that architecturally complements the surrounding historic buildings and adjacent high-rises by adding to the vertical heterogeneity consistent with modern attractive skylines.
- Utilize a small building footprint, relative to surrounding high-rises, to allow for the creation of ample on-site open space accessible to the public, and serving as an elegant connection to Snow Park.
- Provide a skyway on top of the building where anyone can have a 360 degree view of Oakland, the Bay, and Lake Merritt from a viewpoint now only glimpsed by people who work in nearby buildings.
- Provide in-fill development within close proximity to jobs, the civic center, services and amenities.
- Provide high-density housing in close proximity to existing infrastructure of Oakland, including the regional and local roadway network as well as alternative modes of transportation and facilities, including BART, AC Transit, designated bicycle routes and pedestrian paths.
- Create a project that enhances the street experience of the surrounding neighborhood leading to more evening activity and enhanced pedestrian presence around the north shore of the Lake, including Snow Park, with the aim of revitalizing the area through increased eyes and feet on the streets.

C. PROPOSED PROJECT

The proposed project is a high-rise development that would provide approximately 370 units and five levels of below-grade parking. The tower would be approximately 457 feet tall, measured from grade to the top of roof forms. The total maximum height including the antennae would reach approximately 530 feet. The building would include landscape elements, a patio and entrances contiguous to Snow Park. The project site plan and two elevations are included in Figures III-4, and III-5a and III-5b, respectively.

a. Use. The proposed 370 residential units include approximately 216 one-bedroom units and 154 two-bedroom units. The residential units would be on floors 4 through 41. The ground floor would include a lobby, a cafe, a lounge, management offices, mail boxes, back-of-house mechanical spaces and recycling and trash areas. The lounge and cafe would have access to a patio adjacent to Snow Park. The 2nd and 3rd floors of the residential tower would include (for use by residents only) an interior swimming pool, whirlpool, gym and locker rooms, in addition to a private party room,

screening rooms, and a meeting room. (The 42nd floor of the tower would be dedicated to the mechanical equipment and a green roof terrace.)

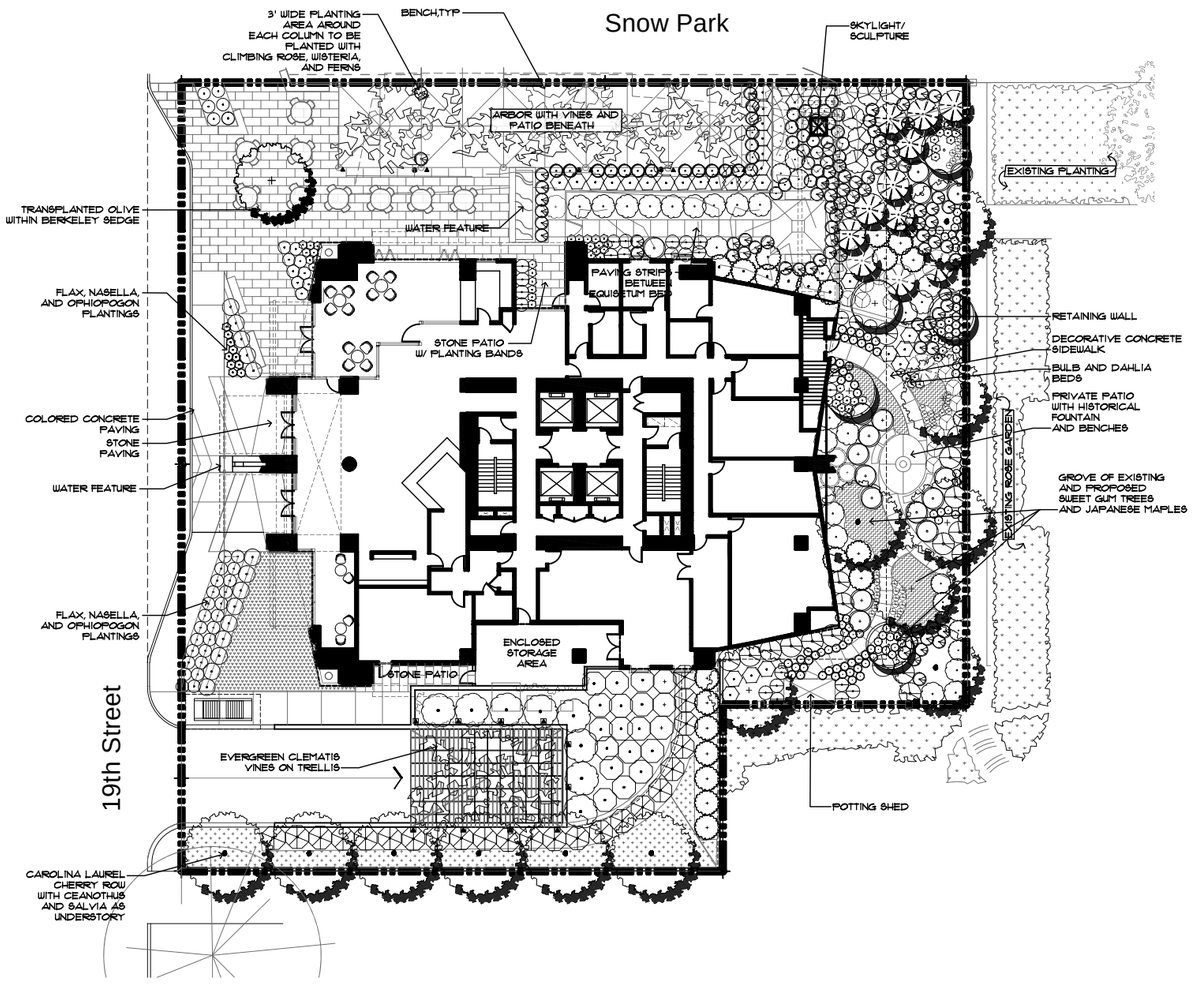
b. Building Design. The residential tower would have a footprint of approximately 12,200 square feet. Each of the floors above would be similar in size with minor variation in balcony locations to create visual scaling and interest. The east and west sides of the tower would curve slightly outwards, the north and south sides of the tower angle slightly inward. The residential tower would have an overall contemporary appearance. The lower floors (floors 1 through 3) would be clad in pre-cast simulated stone panels with aluminum spandrel panels forming a transition to the aluminum and glass skin of the upper floors. Floors 4 through 42 would be sheathed in light-green glass, and alabaster aluminum cladding. The tower would include a vertical design element on both narrow facades (northern and southern facades) of the building, which would consist of notched aluminum composite panel structure, referencing similar vertical elements in 244 Lakeside Drive. Up lighting would be placed at the base of the notch to emphasize the verticality at night.

The tower would terminate in a split pyramidal roof-form, with louvered sloped planes. The roof-top feature would be constructed of horizontal glass louvers, separated from each other by a continuous vertical gap. The night-time illumination would be internal to the pyramids, allowing light to be seen from below, but maintaining a "dark sky" from above the building. The pyramids are essentially open-to-air enclosures for roof-top mechanical equipment and cooling towers.

The project proposes to use energy-efficient systems and sustainable building materials in order to reduce the effect of the project construction and operation on the environment. The following systems would be used to the extent feasible, as determined by the project applicant[2].

- Photovoltaic panels would be installed on the south, east, and west sides of the roof. The electricity produced would be used to light common areas, including corridors, the lobby, and landscaping.
- Solar collectors would be located on the south side of the roof, and would be used to pre-heat water from the central boiler for domestic hot water demand.
- Rain water would be collected from the roof and reused in the irrigation of the landscaping on the roof and around the building. It would also provide water for sprinklers used to clean the solar panels and collectors on the roof.
- A geo-thermal exchange HVAC system would transfer heat from the stored water in the fire sprinkler reservoir in order to provide space heating for common areas in the winter. In the summer, the heat transfer process would be reversed and the sprinkler water would absorb the heat from the spaces and cool the air. The system would be used to provide heating and cooling to the common spaces, pool, gym, and meeting room.

[2] The Proposed Project will be required to construct the new building to mandatory Calgreen performance standards. Calgreen is a newly enacted State building code requirement, which is effective January 2011. The City deemed the project application complete prior to adoption of the local Green Building Ordinance. Therefore, the project is not subject to the Ordinance. For purposes of a conservative analysis, the Draft EIR does not include these features in the Greenhouse Gas Emissions section and none are required to reduce a potential Greenhouse Gas Emission impact to less than significant.



PLANTING SCHEDULE:

TREES

CALL OUT	SYMBOL	SCIENTIFIC NAME	COMON NAME	SIZE	SPACING	NOTES
ACE PAL		ACER PALMATUM - 'BLOODGOOD' AND GREEN SPECIMAN	JAPANESE MAPLE	24" BOX	VARIES, SEE PLAN	
ACE TRA		TRANSPLANTED ACER PALMATUM	TRANSPLANTED JAPANESE MAPLE	EXISTING	VARIES, SEE PLAN	3 TOTAL
DIC ANT		DICKSONIA ANTARTICA	TASMANIAN TREE FERN	15 GAL	8' O.C.	---
DIC TRA		TRANSPLANTED DICKSONIA	TRANSPLANTED TREE FERN	EXISTING	8' O.C.	10 TOTAL
LIQ STY		LIQUIDAMBER STYRACIFLUA	AMERICAN SWEET GUM	36" BOX	VARIES, SEE PLAN	---
LIQ TRA		TRANSPLANTED LIQUIDAMBER	TRANSPLANTED SWEET GUM	36" BOX	VARIES, SEE PLAN	4 TOTAL
MAG TRA		TRANSPLANTED MAGNOLIA	TRANSPLANTED MAGNOLIA	EXISTING	VARIES, SEE PLAN	3 TOTAL
OLE TRA		TRANSPLANTED OLEA	TRANSPLANTED OLIVE	EXISTING	VARIES, SEE PLAN	1 TOTAL
PRU CAR		PRUNUS CAROLINIANA	CAROLINA LAUREL CHERRY	36" BOX	20' O.C.	---
QUE EXI		EXISTING QUERCUS	EXISTING OAK	EXISTING	VARIES, SEE PLAN	2

SHRUBS / PERRENIALS

CALL OUT	SYMBOL	SCIENTIFIC NAME	COMON NAME	SIZE	SPACING	NOTES
ABU HYB		ABUTILON HYBRIDS - 'CRIMSON BELLE', 'MOONCHIMES'	ABUTILON	5 GAL	5' O.C.	---
ABU TRA		TRANSPLANTED ABUTILON	TRANSPLANTED ABUTILON	EXISTING	5' O.C.	3 TOTAL
ACO GRA		ACORUS GRAMINEUS 'OGON'	ACORUS	1 GAL	18" O.C.	
ACO TRA		TRANSPLANTED ACORUS	TRANSPLANTED ACORUS	EXISTING	18" O.C.	---
ATH NIP		ATHYRIUM NIPPONICUM 'PICTUM'	JAPANESE PAINTED FERN	1 GAL	18" O.C.	
AZA HYB		AZALEA HYBRIDS - 'HINO-CRIMSON', 'PINK RUFFLES', AND 'ALASKA'	AZALEA	15 GAL	4' O.C.	"""
AZA TRA		TRANSPLANTED AZALEA HYBRIDS	TRANSPLANTED AZALEA	EXISTING	4' O.C.	5 TOTAL
BER THU		BERBERIS THUNBERGII 'ROSE GLOW'	BERBERIS	5 GAL	5' O.C.	
BUX TRA		TRANSPLANTED BUXUS	TRANSPLANTED BOXWOOD	EXISTING	5' O.C.	---
CAM JAP		CAMELIA JAPONICA - 'KRAMER'S SUPREME', 'DEBUTANTE'	CAMELIA	15 GAL.	6' O.C.	---
CAM TRA		TRANSPLANTED CAMELIA	TRANSPLANTED CAMELIA	EXISTING	6' O.C.	14
CAM POR		CAMPANULA PORCHARSKYANA	SIBERIAN BELLFLOWER	1 GAL	12" O.C.	---
CAR TUM		CAREX TUMULICOLA	BERKELEY SEDGE	4" POT	12" O.C.	---
CEA DAR		CEANOTHUS 'DARK STAR'	DARK STAR CEANOTHUS	15 GAL.	5' O.C.	---
CEA YAN		CEANOTHUS 'YANKEE POINT'	YANKEE POINT CEANOTHUS	5 GAL.	5' O.C.	---
CEA TRA		TRANSPLANTED CEANOTHUS	TRANSPLANTED CEANOTHUS	EXISTING	5' O.C.	3
CHA MIN		CHAENOMELES 'MINERVA'	FLOWERING QUINCE	15 GAL.	6' O.C.	---
CHA TRA		TRANSPLANTED CHAENOMELES	TRANSPLANTED FLOWERING QUINCE	EXISTING	6' O.C.	2
CHO TER		CLEMATIS	EVERGREEN CLEMATIS	5 GAL.	6' O.C.	---
CHO TRA		TRANSPLANTED CHOISYA	TRANSPLANTED CHOISYA	EXISTING	5' O.C.	---
DAH HYB		DAHLIA HYBRIDS	DAHLIA	1 GAL	1' O.C.	
DAP ODO		DAPHNE ODORATA	DAPHNE	5 GAL.	5' O.C.	---
DAP TRA		TRANSPLANTED DAPHNE	DAPHNE	EXISTING	5' O.C.	1
EQU HYE		EQUISETUM HYEMALE	HORSETAIL	1 GAL	18" O.C.	
EUP CHA		EUPHORBIA CHARACIAS WULFENII	EUPHORBIA	1 GAL	18" O.C.	---
FAT JAP		FATSIA JAPONICA	JAPANESE ARALIA	5 GAL.	5' O.C.	---
GAR AUG		GARDENIA AUGUSTA 'AUGUST BEAUTY'	GARDENIA	5 GAL.	3' O.C.	
HEU MIC		HEUCHERA MICRANTHA 'PURPLE PALACE'	CORAL BELLS	1 GAL	12" O.C.	---
HIB ROS		HIBISCUS ROSA-SINENSIS 'AMOUR'	HIBISCUS	15 GAL	5' O.C.	---
HYD MAC		HYDRANGEA MACROPHYLLA	HYDRANGEA	15 GAL.	5. O.C.	---
IRI DOU		IRIS DOUGLASIANA	PACIFIC COAST IRIS	1 GAL.	12" O.C.	---
IRI TRA		TRANSPLANTED IRIS	TRANSPLANTED IRIS	EXISTING	12" O.C.	---
LIR SPI		LIRIOPE SPICATA	LILY TURF	1 GAL.	12" O.C.	---
LIR TRA		TRANSPLANTED LIRIOPE	TRANSPLANTED LILY TURF	1 GAL.	12" O.C.	---
LOR CHI		LOROPETALUM CHINENSE - SPECIES AND 'RAZZLEBERRY'	LOROPETALUM	5 GAL.	5' O.C.	---
LOR TRA		TRANSPLANTED LOROPETALUM	TRANSPLANTED LOROPETALUM	EXISTING	5' O.C.	8 TOTAL
MEL MAJ		MELIANTHUS MAJOR	HONEY BUSH	5 GAL.	5' O.C.	---
NAS TEN		NASELLA TENUISSIMA	FEATHER GRASS	1 GAL.	2.5' O.C.	---
OPH PLA		OPHIOPOGON PLANISCAPUS	'MONDO GRASS	1 GAL.	12" O.C.	---
PER ATR		PEROVSKIA ATRIPLICIFOLIA	RUSSIAN SAGE	1 GAL.	3' O.C.	---
PHO APR		PHORMIUM 'APRICOT QUEEN'	NEW ZEALAND FLAX	5 GAL.	4' O.C.	---
PHO MAO		PHORMIUM 'MAORI MAIDEN'	NEW ZEALAND FLAX	5 GAL.	4' O.C.	---
POL MUN		POLYSTICHUM MUNITUM	SWORD FERN	1 GAL.	3' O.C.	---
RHO HYB		RHODODENDRON HYBRIDS - 'NORMANDY', 'VULCAN' AND CATAWBIENSE 'ALBUM'	RHODODENDRON	15 GAL.	5' O.C.	---
RHO TRA		TRANSPLANTED RHODODENDRON	TRANSPLANTED RHODODENDRON	EXISTING	5' O.C.	2 TOTAL
ROS CLI		ROSA - CLIMBING (PINK)	PINK CLIMBING ROSE	15 GAL.	AT EACH ARBOR COLUMN	---
ROS TRA		TRANSPLANTED ROSA	TRANSPLANTED ROSE	EXISTING	5' O.C.	
SAL LEU		SALVIA LEUCANTHA	MEXICAN SAGE	1 GAL.	3' O.C.	---
SAR RUS		SARCACOCCA RUSCIFOLIA	SWEET BOX	5 GAL.	4' O.C.	---
STA BYZ		STACHYS BYZANTINA	LAMB'S EARS	4" POT	12" O.C.	---
TIB URV		TIBOUCHINA URVILLEANA	PRINCESS FLOWER	15 GAL.	5' O.C.	---
TIB TRA		TRANSPLANTED TIBOUCHINA	TRANSPLANTED PRINCESS FLOWER	EXISTING	5' O.C.	5
WIS SIN		WISTERIA SINENSIS	WISTERIA	5 GAL.	AT EACH ARBOR COLUMN	---

BULBS

CALL OUT	SYMBOL	SCIENTIFIC NAME	COMON NAME	SIZE	SPACING	NOTES
BULBS & DAHLIA		TULIP, NARCISCUS, LILY, DAHLIA	TULIP, NARCISSUS, LILY, DAHLIA	1 GAL	12" O.C.	---

LSA

FIGURE III-4

SYMBOL	DESCRIPTION
PA	PLANTING AREA
B	SECTION DETAIL
TYP	TYPICAL

0 16 32
FEET

SOURCE: IB+A ARCHITECTURE; APDW, INC., 10/27/07

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Emerald Views Residential Development EIR

Proposed Landscape Plan and Schematic Planting Plan

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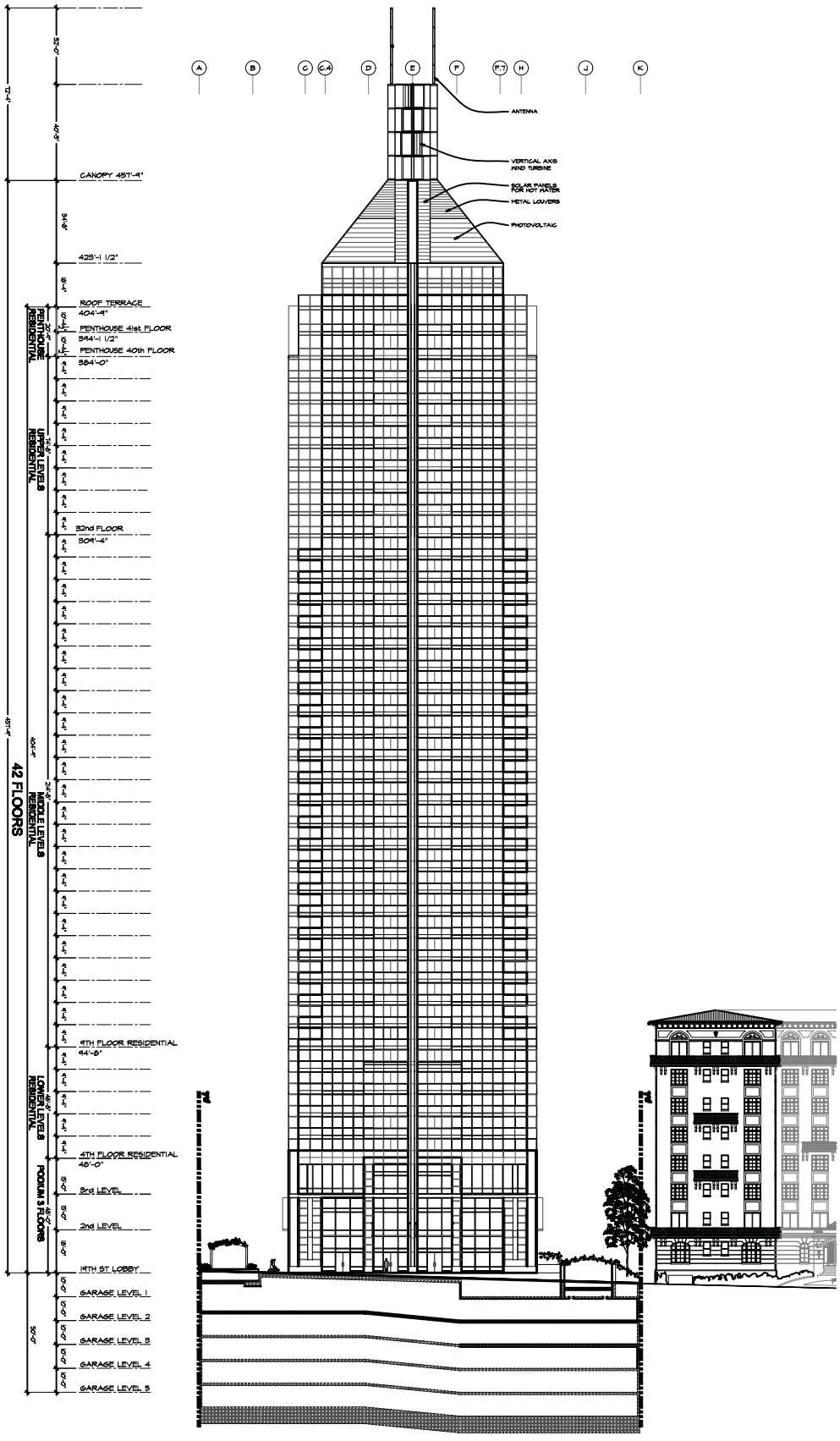

LSA

FIGURE III-5a

NOT TO SCALE

Emerald Views Residential Development EIR

SOURCE: IB+A ARCHITECTURE, OCTOBER 2007

Building Elevation - South (Front)

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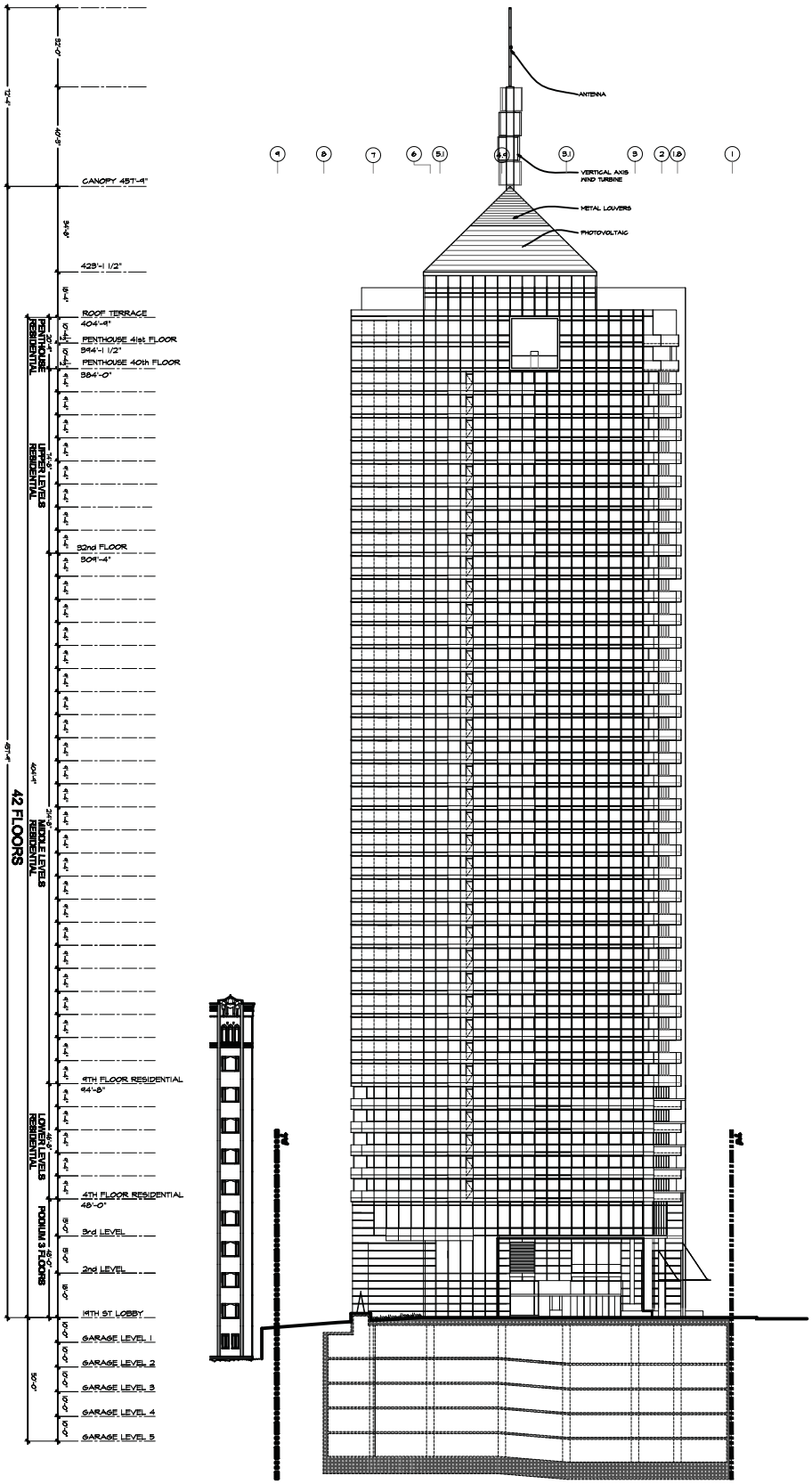

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FIGURE III-5b

NOT TO SCALE

Emerald Views Residential Development EIR

Building Elevation - West
(From Snow Park)

SOURCE: IB+A ARCHITECTURE, OCTOBER 2007

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- Recycled materials and locally sourced materials would be used wherever possible. This could include high recycled content carpeting and tile flooring. In addition, rapidly renewable materials would be used were possible, which could include bamboo wood flooring with no added urea-formaldehyde. Certified wood would be used where possible.
- A pair of vertical axis wind turbines for energy production would also be considered. Four turbines would be stacked and supported between the antennas located on the top of the roof. The electricity produced would be used to help power the common areas, including the corridors and lobby.
- The use of treated rainwater for flushing toilets would also be considered by the project applicant. Rainwater collection could provide approximately 129,000 gallons of water per year. The water would be reused by contributing to flushing the toilets in the apartments and common toilets.

Building design would also include elements to enhance fire-fighting and rescue capabilities.[3] Elements would include, but are not limited to, one elevator designed for fire-fighter use, rescue air stations at every fifth floor, 4-hour walls and hazard sprinkler spacing on the 40th floor viewing area, and 4-hour walls for both stairwells.

c. Circulation and Parking. Five stories of below-grade parking would be constructed to provide approximately 357 off-street parking spaces for a parking ratio of 0.96 parking spaces per dwelling unit. The second and third basement garage levels would have tandem parking spaces, valet parking, and Klaus parking machines and pallets. The parking pallets operate on rails that slide vehicles side-to-side to make tandem parking feasible without a valet present while the parking machines function by stacking one car on top of another with valet assistance. A valet service would be on-site to manage the flow of vehicles. The fourth and fifth basement garage levels would have only the Klaus mechanical apparatus. Ingress and egress to the garage within the site would be from 19th Street via a sloped driveway on the southern portion of the site. Local streets would provide vehicular access to the site. A curb cut/drop-off area is shown along 19th Street.

d. Open Space and Landscaping. Approximately 14,220 square feet of public, usable open space would be provided on the project site. An entry plaza with colored concrete, stone paving, a water feature, and landscaping would be provided along 19th Street, as shown in Figure III-4. The south-west corner of the site, along 19th Street and adjacent to Snow Park, would include a stone patio and may include elements relocated from the existing garden. Landscaping along the northern edge of the site would include a shade garden with trees, shrubs and perennials transplanted from the existing garden and supplemented with new plants. In addition, an approximately 800 square foot viewing area would be provided on the 40th floor. Approximately 20,850 square feet of private, useable open space would be provided through terraces and balconies, including a 6,626 square foot roof terrace.

e. Demolition, Grading, and Construction. Demolition and grading activities at the project site would commence shortly following project approval. If feasible, the project applicant would preserve the historic arbor, for re-use and incorporation in the new landscape design for the site. If it is not structurally feasible to move and preserve the historic arbor, a new arbor would be constructed in its likeness. Other garden elements, such as benches, fountains and stones, may be relocated and

[3] Birchall, Ian, 2008. Principal, AIA, RIBA, ian birchall + associates. Memorandum to Heather Klein, Senior Planner, City of Oakland. July 22.

incorporated into the project site design, if feasible. Implementation of the proposed project would result in the permanent removal of 25 protected trees on the project site and, due to construction site access, 14 trees on the 244 Lakeside Drive Apartment property, as defined in Chapter 12.36 of the Oakland Municipal Code.

Excavation for the five levels of below-ground parking and building foundations would extend approximately 60 feet below the existing ground surface and require removal of approximately 212,000 cubic yards of soil. Screw piles would be used in construction of the foundation of the proposed project.

A Draft Construction Utilization Plan has been submitted to the City by the project applicant, which outlines construction tasks, duration of tasks, equipment needed, access point(s), and storage and staging locations, see Table III-1. Total project construction is anticipated to take 33 months. Site grading and excavation is anticipated to take 6 months. Building construction, including the concrete structure, building skin, elevators and roofing is anticipated to take 22 months. Interior construction work will begin while building construction is being completed; interior work, site work and inspections will extend 5 months after building construction is generally complete. The project applicant has indicated that access to the site from 244 Lakeside Drive has been secured. Primary access for all material delivery and off-haul would be provided by Lakeside Drive, with secondary access on 19th Street as necessary, with the exception of elevator construction, roof construction and interior work, where access would be provided exclusively from Lakeside Drive. The access to the site from Lakeside Drive would be between Snow Park and the 244 Lakeside Drive Apartments; the area between the garage and apartment building would be used for limited personnel access to and from the site but not for the delivery of construction materials.

Table III-1: Preliminary Construction Utilization Plan

Task #	Task Description	Task Duration[a]	Equipment Needed	Access Point	Storage/Staging Location
1	Preconstruction Survey	1 week	Pickup Truck	Lakeside Drive	N/A
2	Inspections	2 months	City Vehicles	Lakeside Drive	N/A
3	Shoring	4 weeks	Pickup Truck, Drill Rig, Beam Deliveries	Primary: Lakeside Drive Secondary: 19th Street	On Site
4	Excavate Basement	5 months	Excavator, Dozer, Dirt Trucks	Primary: Lakeside Drive Secondary: 19th Street	Excavator–On Site
5	Concrete Structure	18 months	Concrete Trucks, Rebar Delivery Trucks, Misc Delivery Trucks	Primary: Lakeside Drive Secondary: 19th Street	On Site/ Lakeside Drive
6	Building Skin	13 months	Delivery Trucks	Primary: Lakeside Drive Secondary: 19th Street	On Site/ Lakeside Drive
7	Elevators	10 months	Delivery Trucks	Lakeside Drive	On Site/ Lakeside Drive
8	Roofing	1 month	Delivery Trucks	Lakeside Drive	On Site/ Lakeside Drive
9	Interior Work	15 months	Delivery Trucks	Lakeside Drive	On Site/ Lakeside Drive
10	Site Work	3 months	Bobcat, Backhoe, Concrete Trucks	Primary: Lakeside Drive Secondary: 19th Street	On Site/ Lakeside Drive
	Total Project Duration	**33 months**			

[a] Many tasks would occur simultaneously.
Source: David O'Keeffe, March 2008.

The crane for project construction would be positioned in the side yard between the proposed building and the Regillus. The crane would not carry materials above either the Lakeside Drive Apartments or the Regillus. As per standard construction procedures, the arm of the crane would have pre-set limiters that would prohibit it from extending materials above adjacent residential structures.

f. Utilities and Services. Utility services are currently provided to existing buildings surrounding the project site, and would be readily available to serve the proposed project. Below is a discussion of the services that would be provided in association with the proposed project.

(1) Water Service. The East Bay Municipal Utility District (EBMUD) supplies potable water to existing buildings surrounding the project site. EBMUD owns and maintains a 12-inch water main in 19th Street, an 8-inch water main in Alice Street, and a 12-inch water main in Jackson Street on the south side of 19th Street.

(2) Wastewater. Wastewater collection is provided by EBMUD and flows to the Main Wastewater Treatment Plant (MWWTP), which is located in Oakland near the eastern entrance of the San Francisco-Oakland Bay Bridge. Wastewater collection facilities within the City are owned and maintained by the City of Oakland Public Works Agency.

(3) Stormwater. The City of Oakland Public Works Agency disposes of stormwater via a storm drainage network consisting of conveyance piping and outfalls to local creeks. New on-site drainage facilities would be proposed as part of the project and subject to approval by the Public Works Agency.

(4) Other Utilities. Other utilities that would be provided to the project area include telephone service, gas and electrical service, and cable service. These utilities are currently provided in the vicinity of the project site.

g. Requested Approvals. The project applicant has requested the following approvals for development at the project site. These approvals are also listed below in Table III-2.

(1) Conditional Use Permit. A Major Conditional Use Permit is required in order to allow for a large-scale development with over 100,000 square feet of new floor area or more than 120 feet tall within the R-90 Downtown Apartment Residential Zone. A Major Interim Conditional Use Permit is also required for a proposed density that exceeds the R-90 zoning but is permitted by the Central Business District General Plan designation. A Minor Conditional Use Permit is required for General Food Sales activity in the cafe.

(2) Design Review. The project applicant is requesting review and approval of the project in accordance with the City's Design Review process for residential development within the S-4 Design Review zone. The R-90 zone regulations require that any project with 3 or more dwelling units must undergo the City's Design Review process for high density housing.

(3) Variance. The proposed project would require minor variances for the following elements:

- Outside General Food Sales
- Percentage of compact parking spaces
- Number of required parking spaces for the Permanent Residential and General Food Sales activities
- Parking space dimensions when next to a column of other obstruction
- Omission of three required loading berths

(4) Tree Preservation/ Removal Permit. Within the footprint of the proposed development there are 30 protected trees as defined in Chapter 12.36 of the Oakland Municipal Code. The proposed project would permanently remove 25 of the 30 trees; 5 trees are proposed for transplant on the project site. The project applicant has indicated access to the site has been secured from 244 Lakeside Drive for construction material delivery and off-haul. This will likely require the removal of 14 additional trees on the 244 Lakeside Drive Apartment building site.

Table III-2: Required Permits and Approvals

Lead Agency	Permit/Approval
City of Oakland Planning Commission City Council Redevelopment Agency Landmarks Preservation Advisory Board Public Works Agency	• Major Conditional Use Permit • Design Review • Variances • Demolition Permit • Grading Permit • Encroachment Permits • Major Interim Conditional Use Permit • Minor Conditional Use Permit • Approval for sewer treatment capacity • Permit for wastewater discharge into City conveyance system • Building Permits • Tree Preservation/Removal Permit • Tentative Parcel Map for Condominium Purposes • On-street loading zone • P-Job Permit
Responsible Agencies	
East Bay Municipal Utility District (EBMUD)	• Approval of water line, water hookups and review of water needs
California Regional Water Quality Control Board (RWQCB)	• National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharge • Approval and oversight of required remediation.
Other Agencies	
AT&T (formerly SBC)	• Approval of communication line improvements and connection permits
Pacific Gas & Electric (PG&E)	• Approval of natural gas improvements and connection permits
Federal Aviation Administration (FAA)	• Form 7460

Source: LSA Associates, Inc., 2009.

h. Other Approvals. The project may require grading permits, dewatering permits, building permits, demolition permits, encroachment permits, and other necessary actions.

The proposed project includes residential units that will be sold as condominiums. A parcel map will be required for the creation of condominiums.

D. USE OF THIS EIR

It is anticipated that this EIR will provide environmental review for all discretionary approvals necessary for the proposed project. A number of permits and approvals would be required before the development of the project could proceed. A non-inclusive list of the required permits and approvals that may be required by the City and other agencies is provided in Table III-2.

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

This chapter contains an analysis of each relevant environmental topic that has been identified, through a preliminary analysis and the public scoping sessions for the Emerald Views Residential Development Project EIR, and comprises the major portion of the EIR. Sections A through N of this chapter describe the environmental setting of the project as it relates to each specific environmental topic evaluated in the EIR and the impacts that are expected to result from implementation of the project. Standard Conditions of Approval or mitigation measures are proposed to reduce potential impacts, where appropriate.

The following discussion 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, the applicability of the City's Uniformly Applied Development Standards (also referred to as Standard Conditions of Approval).

A. ENVIRONMENTAL TOPICS INCLUDED IN THE DRAFT EIR

The following environmental topics are addressed in this chapter:

- Land Use
- Planning Policy
- Population and Housing
- Transportation and Circulation
- Air Quality and Greenhouse Gas Emissions
- Noise and Vibration
- Aesthetics, Shadow and Wind
- Cultural and Paleontological Resources
- Biological Resources
- Soils, Geology and Seismicity
- Hydrology and Water Quality
- Public Health and Hazards
- Utilities and Infrastructure
- Public Services and Recreation

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 and Mineral Resources.

B. FORMAT OF ENVIRONMENTAL TOPIC SECTIONS

Each environmental topic considered in this chapter comprises two primary sections: (1) setting, and (2) impacts (construction, project and cumulative), Standard Conditions of Approval, and mitigation measures. An overview of the general organization and the information provided in the two sections is provided below:

- *Setting*. The setting section for each environmental topic generally provides a description of the physical setting for the project site and its surroundings at the beginning of the environmental review process (e.g., existing land uses, existing soil conditions, existing traffic conditions). An overview of regulatory considerations that are applicable to the specific environmental topic is also provided.
- *Impact, Standard Conditions of Approval and Mitigation Measures*. The impacts, Standard Conditions of Approval, and mitigation measures section for each environmental topic presents a discussion of the impacts that could result from implementation of the proposed project. The section begins with the criteria of significance, establishing the thresholds to determine whether an impact is significant. The latter part of this section presents the impacts from the proposed project, applicable Standard Conditions of Approval, and mitigation measures, if required. The impacts of the proposed project are organized into separate categories based on their significance according to the criteria listed in each topical section: less-than-significant impacts, which do not require mitigation measures, and significant impacts, which require mitigation measures.

Impacts are numbered and shown in bold type, and the corresponding mitigation measures are numbered and indented. Impacts and mitigation measures are numbered consecutively within each topic and begin with an acronymic reference to the impact section (e.g., LU). The following symbols are used for individual topics:

LU:	Land Use
POL:	Planning Policy
POP:	Population and Housing
TRANS:	Transportation and Parking
AIR:	Air Quality and Greenhouse Gas Emissions
NOISE:	Noise and Vibration
AES:	Aesthetics, Shadow and Wind
CULT:	Cultural and Paleontological Resources
BIO:	Biological Resources
GEO:	Soils, Geology and Seismicity
HYD:	Hydrology and Water Quality
HAZ:	Public Health and Hazards
UTIL:	Utilities and Infrastructure
PUB:	Public Services and Recreation

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

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

These notations are found following each impact and each mitigation measure to identify the significance of impacts before and after mitigation.

C. THRESHOLDS/CRITERIA OF SIGNIFICANCE

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 provide consistent analysis and decision-making in the environmental review process in the City of Oakland, the City has developed 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 uses these 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 of 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 Standard Conditions of Approval on a City-wide basis.

D. 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 (COA)) 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 Emerald Views Residential Development Project, all of the relevant standard conditions have been incorporated as part of the project and are identified in each environmental topic section.

In reviewing project applications, the City determines which Standard Conditions of Approval are applicable, based on the zoning district, community plan, and the types of permit(s)/approvals(s) required for the project. Depending on the specific characteristics of the project type and/or project

[1] Public Resources Code 21068.

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 as part of 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 measure would need to be imposed.

The Standard Conditions of Approval incorporate development policies and standards from various adopted plans, policies, and ordinances (such as the Oakland Planning and Municipal Codes, Oakland Creek Protection, Stormwater Management and Discharge Control Ordinance, Oakland Tree Protection Ordinance, Oakland Grading Regulations, National Pollutant Discharge Elimination System (NPDES) permit requirements, California Building Code, and Uniform Fire Code, among others), which have been found to substantially mitigate environmental effects.[2] 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.

E. RECOMMENDED CONDITIONS OF APPROVAL

Although not required by CEQA, certain "Recommended Conditions" are included in this EIR with respect to certain improvements that are not necessary to address or mitigate any environmental impacts of the project, but nevertheless are recommended herein by City Staff or were identified in technical studies or reports for the project. These recommendations will be considered by decision makers during the course of project review and may be imposed as Project-Specific Conditions of Approval. Other Project-Specific Conditions of Approval supplement Standard Conditions of Approval and are specific to the project as they are identified in technical studies or reports prepared for the project.

F. CUMULATIVE ANALYSIS CONTEXT

CEQA defines cumulative as "two or more individual effects which, when considered together, are considerable, or which can compound to 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.

[2] Oakland, City of, 2008. Planning and Zoning Division, *Standard Conditions of Approval & Uniformly Applied Development Standards.* A list of Conditions of Approval Templates for projects approved under the Oakland Planning Code. Revised 09/05/07, amended 01/17/08 and 09/17/08.

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 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 affected by potential noise impacts from a proposed project and other cumulative projects/growth. The cumulative noise impacts are more localized than air quality and transportation impacts, which are more regional in nature. Accordingly, the parameters of the respective cumulative analyses in this document are determined by the degree to which impacts from this project are likely to occur in combination with other development projects.

Generally the City's Major Projects list was used in part, to determine past, present, existing, approved, pending and reasonably foreseeable future projects in the vicinity of the Emerald Views project to inform development of a baseline for cumulative analysis. The geographic areas near the project site include Downtown Oakland/Central District, Uptown, Lake Merritt Business District and Jack London. Major Projects from the City's Major Project List that pertain to the Emerald Views project are summarized in Table IV.1 below.

CEQA recognizes that the existing condition might change during the course of environmental review analysis and preparation of the EIR. Since the NOP was issued, projects listed on the Major Projects List might have changed. However, the projects from the Major Projects List as of the date that environmental review began represents a more conservative approach to the cumulative analysis in this EIR since it represents a more intensive growth scenario and therefore has the potential to generate additional cumulative impacts. Furthermore, the major projects listed in Table IV.1 are not inclusive of all possible past projects; projects not listed were no longer maintained on the list but are part of the baseline assumptions for the analysis in the EIR. Specifically, a more detailed cumulative list of projects was identified to analyze cumulative visual, wind, and shadow effects in the project area, given the site specific and localized nature of these effects. Moreover, the transportation analysis (and transportation-related traffic and air quality) used the Alameda County Congestion Management Analysis (ACCMA) travel demand model which requires inputs at the traffic analysis zones (TAZ) level. The Association of Bay Area Governments (ABAG) projections provide the City-wide 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 context and geographic area for evaluating cumulative impacts necessarily varies depending on the specific topic being analyzed. Recognizing this, the cumulative discussions included in Sections IV.A through IV.N explain the geographic scope of the area affected by each cumulative effect. 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 basin wide projections of emissions is the best tool for determining the cumulative effect. A list of projects is shown in Table IV.1.

Table IV.1: Cumulative Projects

	Project Name	Building Height	Description	Status
Application Submitted – Under Review				
1	**424 3rd Street** APN: 001-0139-008-00	15 stories, 176 feet	• 64 residential units • Ground floor commercial	Pre-application filed
2	**Jack London Inn** 444 Embarcadero APN: 001 -141-017-02	26 story; 310 feet	• 200 residential units • 3,000 S.F. of retail	Application filed. Environmental Scoping Session 04/05/06. Design Review Committee 04/26/06.
3	**Kaiser Center** 300 Lakeside Drive Area bounded by 20th and 21st Streets and Webster and Harrison Streets	2 towers: 42-stories and 34-stories	• Demolition of 280,000 S.F. • 780,000 S.F. of office and 22,000 S.F. retail	Application filed. Environmental Scoping underway.
4	**325 7th Street** APN:001 -0189-005-00 001-0189-013-00 001-0189-014-01	24 stories; 255 feet	• 382 residential units	Application filed. Environmental Scoping underway.
5	**1443 Alice Street** APN: 008 -0626-016-00 008 -0626-023-00	37 stories; 395 feet	• 245 residential units	Application filed. Environmental Scoping underway.
7	**250 12th Street** APN:002-0069-002	32 stories; 341 feet	• 215 residential units • 8,000 S.F. of retail	Application filed. Environmental scoping underway. Design Review Committee 10/25/06.
8	**19th Street Residential Condominiums** 222 19th Street APN: 008-0634-003-00	42 stories; 457 feet	• 370 residential units • 933 S.F. café	Application filed. Environmental scoping underway.
9	**1930 Broadway** **1930 Broadway** **1944 Broadway** **1941 Franklin** APN: 008-0638-007-00 008-0638-008-00	63 stories; 782 feet	• Approx. 100,000 S.F. retail/fitness club • Approx. 1,058,000 S.F. of office space • 144 residential units • 458 Parking stalls • Rehabilitation of the Tapscott Building	Project withdrawn but will be resubmitted in November.
10	**Mandela Grand Mixed Use Redevelopment Project** 13.5 acre site bounded by Mandela, W. Grand, Popular, and 18th Street	300 feet	• 1,577 residential units • Approx. 300,000 non-residential S.F.	Project inactive.
Application Approved				
11	**116 6th St** APN: 001-0173-009-00	11 stories; 129 feet	• 80 residential condo units	Design Review Committee 10/26/05; Planning Commission approval 01/18/06.
12	**Valdez & 23rd Street Project Valdez St. /Webster/23rd St./24th Streets** APN: 008-0668-004-00 008-0668-009-07 008-0668-005-00	22 stories; 241 feet	• 281 residential units • 12,000 S.F. of retail • 500 car parking structure including 250 public spaces	Design Review Committee 10/26/05; Planning Commission approval 12/07/05. TPM approval 02/28/06.

Table IV.1 *Continued*

	Project Name	Building Height	Description	Status
13	**1331 Harrison Project** **14th and Harrison Street** APN: 002-0065-006-01	19 stories; 209 feet	• 98 condominium units • 9,000 S.F. of retail • Structured parking	Planning Commission approval 12/3/03. Design Review Committee approval for revisions 03/23/05. Project revisions approved administratively 04/25/05. Foundation permit #B0504335 expired.
14	**100 Grand** **124 Grand Ave and 2264 Webster St.** APN: 008-0655-007-00 & 008-0655-009-01	22 stories; 264 feet	• 241 residential units	Planning Commission approval 07/06/05. TPM approval 03/06/06. Grading and Building permit in plancheck #GR0600054 and B0600463.
15	**188 11th Street** **176 11th Street, 198 11th Street, 1110 Jackson** APN: 002 -0081-008-00 002-0081-007-00 002-0081-002-00	22 stories; 222 feet	• 287 residential units • 3,660 S.F. of retail	Design Review Committee 10/26/05; Planning Commission approval 12/07/05. Vesting TPM approval 07/31/06. Demolition Permit #RB0603034
16	**3rd/Broadway Mixed Use** **200/210/228 Broadway** APN: 001 –0141-002-01001 –0141-011-00	16 stories; 186 feet	• 134 residential units • 11,000 S.F. of retail	Design Review Committee 11/16/05; Planning Commission approval 01/18/06. Demolition Permit #RB0600196, Grading Permit #GR0600052, Building Permit #B0600078. Project under construction.
17	**8 Orchids** 620-636 Broadway APN: 001-0197-002-00	11 stories; 132 feet	• 157 residential units • 3,600 S.F. of retail	Design Review Committee 12/08/04; Planning Commission approval 01/19/05. TPM approval on 09/14/05. Demolition Permit #RB0502535, Building Permit #B0503323. Project under construction.
19	**Oak to Ninth Mixed Use** 64.2 acre waterfront site bounded by Fallon Street, Embarcadero Road, 10th Ave., and the Oakland Estuary APN: 0430-001-02, 0430-001-04 (por), 0460-003,004,0465-002, 0470-002 (por).	5 towers 24 stories; 240 feet	• General Plan Amendment • Central City East Redevelopment Plan Amendment and Central District Urban Renewal Plan Amendment • 3,950 structured parking spaces • 3,100 residential units • New Planned Waterfront Zoning District • Zoning Map Amendments • 200,000 S.F. commercial • 29.9 acres public open space • 2 renovated marinas; 170 boat slips • wetlands restoration area	DEIR published on 09/01/05. Design Review Committee 01/25/06. FEIR published 02/01/06. PRAC 02/08/06. LPAB 02/27/06. Planning Commission approval on 03/15/06. Appeal filed 3/24/06. City Council denial of the appeal and approval of the project, amendments, rezoning, etc 06/20/06 and 07/18/06. Under litigation.
20	**Jack London Square Redevelopment** Eight Development areas within Jack London Square bounded by Alice, 2nd, Harrison, and Embarcadero. APN - Multiple	Range of heights but hotel is 168 feet	• 1.2 million S.F. of mixed-use retail, commercial and office • 1,700 seat movie theater • 250 room hotel, supermarkets, restaurants and offices	DEIR published 09/08/03; FEIR published 2/11/04; Planning Commission approval 03/17/04; City Council 04/04. 66 Franklin site under construction. Planning Commission approval of Site G 06/21/06. Design Review on 06/28/06 of Site C.

Table IV.1 *Continued*

	Project Name	Building Height	Description	Status
21	**1640 Broadway Mixed Use Project** 17th and Broadway 1640 Broadway APN: 008-0622-001-01	33-stories; 375 feet	• 177,600 S.F. of office • 4,710 S.F. ground floor retail • Structured parking • Alternative approved for 254 residential units with ground floor retail	Project approved 10/00; all residential alternative approved by Planning Commission 10/01. Administrative extension of approval granted for one year 10/04. Planning Commission re-approval on 05/04/05. Vesting TPM submitted 08/09/06.
22	**Kaiser Permanente** Generally the area surrounding the intersection of Broadway and Macarthur Boulevard.	Range of heights but tower is 210 feet tall	• Master Plan for new Hospital	DEIR published on 04/01/05; Environmental Scoping Session 4/13/05. Special Projects Committee 11/30/05. Design Review Committee 1/18/06, 04/26/06, 07/05/06. DEIR republished 03/02/06. FEIR published 05/26/06. Planning Commission certification of the Final EIR and approval of the project on 06/07/06. Planning Commission approval of the design of Phase 1. City Council approval on 06/27/06.
23	**1100 Broadway** APN: 002-0051-006-02	20 stories; 275 feet	• Rehabilitation of the Key System Building • 310,285 S.F. of office • 9,810 S.F. of retail	LPAB 03/13/06 and 04/17/06. Design Review Committee 3/29/06. Planning Commission approval 08/16/06.
24	**250 14th Street / 1429 Alice Street** APN: 008 -0626-018-00 008 -0626-017-00	36 stories; 395 feet	• 29-story residential tower above existing Alice Street garage structure	Pre-application filed. Environmental scoping underway.
25	**City Center T12 (2005) 11th/12th/MLK/Jefferson** APN: 002-0027-007-00	24 stories; 370 feet	• Revision in program from 450 residential units to 600,000 S.F. office	Approved December 13, 2007
26	**Cathedral of Christ the Light** 2121 Harrison Street and Grand Avenue APN: 008-0653-024	148 feet tall	• 255,000 S.F. Cathedral	EIR Addendum prepared September 2004. Planning Commission approval 10/06/04. Foundation Permit #B0500503 and Grading Permit #GR0500076. Project under construction.

Note: Generally the City's Major Projects list was used in part, to determine past, present, existing, approved, pending and reasonably foreseeable future projects in the vicinity of the Emerald Views project to inform development of a baseline for cumulative analysis. Since the NOP was issued, projects listed on the Major Projects List might have changed; however, the projects from the Major Projects List as of the date environment review began represents a more conservative approach to the cumulative analysis in this EIR since it represents a more intensive growth scenario and therefore has the potential to generate additional cumulative impacts.

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 the existing and planned land uses in the vicinity of the project site. The project's consistency with land use-related policies is discussed in Section IV.B, Planning Policy.

1. Setting

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

a. Overview. The 31,827 square foot project site (APN 008-634-003) is located at 222 19th Street. Nineteenth Street forms the southern boundary and Snow Park forms the western boundary of the project site. To the north of the project site is 244 Lakeside Drive (APN 008-634-001), the existing 12-story Lakeside Apartment Complex. Immediately east of the site is a driveway separating the project site from the Regillus building, an 8-story residential condominium building.

The project site is located in the Downtown Oakland Central Business District, on the northern fringe of the Gold Coast District and southeast of the Kaiser Center and Lake Merritt District (see Figure IV.A-1). The Gold Coast District is characterized by historic and recently constructed apartment buildings. The primary land uses in the Lake Merritt District and Kaiser Medical Center include retail and commercial office space. Figure IV.A-2 provides an overview of existing land uses within and adjacent to the project site.

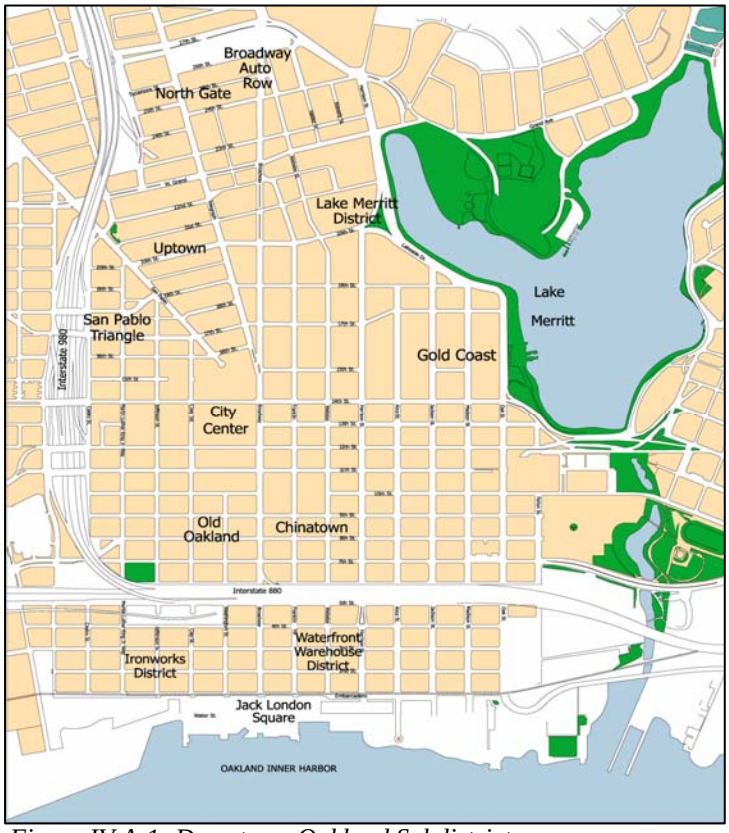

Figure IV.A-1: Downtown Oakland Subdistricts

b. Existing Land Uses within the Project Site. The project site is an existing garden. It contains lawns, planting areas, trees, a historic arbor and garden related structures. The garden is associated with the August Shilling Estate; the Schilling house previously stood on the site currently occupied by the Regillus building.

c. Existing Land Use in the Vicinity of the Project Site. The project site is within the transition zone between the residential areas to the south in the Gold Coast District and commercial areas located to the north and west in the Kaiser Center and Lake Merritt District. The land uses around the project site are described below.

(1) Land Uses to the North. The 244 Lakeside Drive apartment building is located immediately north of the project site. Snow Park, a 4.2-acre City of Oakland public park, is located northwest and includes tree shaded seating with views of Lake Merritt. Further north of the park, across 20th Street and Lakeside Drive, are the Kaiser Center and other commercial office buildings. The Kaiser Center is a Medical Center campus on approximately 21 acres of land.

View of residential buildings adjacent to the project site.

(2) Land Uses to the East. East of the project site is the Schilling Garage, Regillus residential building and Lake Merritt. Further east, across Lake Merritt, is Lakeside Park, which is a 155-acre park, administered by the City of Oakland. A bicycle and pedestrian path circles the lake, and there are several associated lakeside recreation and park areas on the edge of Lake Merritt.

View of Snow Park and adjacent office buildings

(3) Land Uses to the South. Nineteenth Street forms the southern boundary of the project site. Lake Park Retirement Residence, located at 1850 Alice Street, is across 19th Street from the project. Further south of the project site, uses are predominantly residential.

(4) Land Uses to the West. Snow Park, commercial, office, and residential uses are located west of the project site.

View from Lakeside Drive looking across Lake Merritt towards the north

d. Planned Land Uses. Major projects planned or under construction in the vicinity of the project site include the redevelopment of a portion of the Kaiser Center Office complex, and the planned Lake Merritt Measure DD improvements, including the Lakeshore Avenue Pedestrian and Bicycle Improvements project. Additional projects in the greater Downtown Oakland area include additional phases of the Uptown Mixed Use Project, Broadway and West Grand Residential and Mixed Use Project, 1930 Broadway Project, and 375 7th Street Project, among others.

e. Applicable Policies. Policy documents applicable to the project site include several elements of the City of Oakland General Plan, Oakland Planning Code, and the Lake Merritt Park Master Plan. Applicable policies from these documents are discussed in Section IV.B, Planning Policy.

LSA

FIGURE IV.A-2

LEGEND

PROJECT AREA

0 225 450

FEET

Emerald Views Residential Development EIR

Land Use in Vicinity of Project Site

SOURCE: GLOBEXPLORER, 2005.

I:\SDZ0601 19th street\figures\Fig_IVA2.ai (10/20/09)

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2. Impacts and Mitigation Measures

This section analyzes impacts related to land use that could result from implementation of the proposed project. The subsection begins with the criteria of significance, which establish the thresholds for determining whether an impact is significant. The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as appropriate.

a. Criteria of Significance. Implementation of the proposed project would have a significant impact on the environment 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, 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; or
- Fundamentally conflict with any applicable habitat conservation plan or natural community conservation plan.

b. Less-Than-Significant Land Use Impacts. The following discussion describes the less-than-significant impacts related to land use that would result from implementation of the proposed project.

(1) Community Integrity. The physical division of an established community typically refers to the construction of a 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.

Implementation of the proposed project would result in the development of approximately 370 residential units, a café, and parking on the project site. These uses would be developed within an area that is currently characterized by residential, open space and commercial related uses. The project site is not currently accessible to the public. The proposed project would not result in the development of a barrier within the project area that would impede access; similarly, the proposed project would not result in the removal of a major means of access. The introduction of a residential population to the project site could increase pedestrian activity within the neighborhood. In addition, the intensification of uses could encourage the movement of people throughout the area. Therefore, implementation of the proposed project would not physically divide the area and would not result in a significant impact.

(2) Compatibility with Surrounding Land Uses. Residential land uses are adjacent to the north, east and south of the proposed project. Implementation of the proposed project would result in a change of land use on the site from a private garden to a residential development. This change in land use and increase in land use intensity would alter the existing character of the site; however, the proposed project would be of a similar use to surrounding land uses. While the proposed project

would have a higher density than surrounding residential uses, the proposed residential use would be compatible with the surrounding land uses.

Snow Park is adjacent to the northwest of the proposed project. Although residential land uses are not incompatible with the open space and park uses in Snow Park, the proposed building height could alter the existing character of the park, as further discussed in Section IV.B, Planning Policy.

(3) Land Use Policy Compatibility. Potential fundamental land use policy conflicts are described in Section IV.B, Planning Policy. Conflicts between a project and applicable policies do not constitute a significant physical environmental impact in and of themselves; as such, the project's consistency with applicable policies is discussed separately from the physical land use impacts associated with the project. 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 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.

As discussed in Section IV.B, Planning Policy, the land uses proposed by the project are consistent with the General Plan designations and applicable zoning on the project site. Moreover, the existing maximum development intensity allowed by the existing General Plan classifications would accommodate that proposed by the project. Actual development would be restricted by the limits, standards, and guidelines (building height, setbacks, etc.) prescribed by the current applicable zoning designation and at the discretion of the City through the discretionary review of the project.

(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. There is no adopted City of Oakland habitat 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 area considered for the cumulative analysis includes areas of Downtown Oakland, the Gold Coast District and the Kaiser Center and Lake Merritt District. As described in this section, the proposed project would not result in significant land use impacts by potentially physically dividing an established community, or conflicting with surrounding land uses or a Habitat Conservation Plan. The proposed project is consistent with the City's General Plan Land Use designation for the site. The proposed project, in addition to any other proposed project included in the cumulative development, would not contribute to a significant cumulative land use impact.

B. PLANNING 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: Land Use and Transportation; Pedestrian Master Plan; Bicycle Master Plan; Housing; Historic Preservation; Open Space, Conservation, Recreation; Noise; and Safety In addition, the City of Oakland Planning Code, the City's Sustainable Development Initiative, and the Lake Merritt Park Master Plan were reviewed. Table IV.B-1 which summarizes the project's consistency with Oakland documents is presented at the end of this section.

Policy conflicts, in and of themselves and 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. Physical impacts associated with policy conflicts are addressed in the appropriate technical sections of Chapter IV (e.g., noise, traffic). Other local, regional or State plans and policies, such as those relating to air quality or water quality, are discussed in those sections of this EIR.

1. Applicable Regulatory Documents and Policy Consistency

Applicable plans, policies and regulations that pertain to the Emerald Views Residential Development Project are presented below. A discussion of the project's overall consistency with each regulatory document is also included.

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 the growth and development of the City. The General Plan includes policies related to: land use and circulation; housing; recreation; conservation and open space; noise; environmental hazards; and historic resources. These topics are addressed within individual elements of the General Plan: Land Use and Transportation; Pedestrian Master Plan; Bicycle Master Plan; Housing; Historic Preservation; Open Space; Conservation; Recreation; Noise; and Safety. Each are addressed separately below.

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)

(1) Land Use and Transportation Element. The Land Use and Transportation Element[1] (LUTE), adopted in March 1998, addresses land use and transportation issues in a single document. In order to accomplish a more holistic planning process that incorporates City-wide infrastructural needs with a desire 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."

In addition to city-wide directives, the LUTE provides policies that are specific to areas within the City. The Downtown is included as one of these specific areas. Downtown goals include the following:

- To promote downtown Oakland's position as a dynamic economic center for the region.
- To serve as a primary communications, office, government, high technology, retail, entertainment, and transportation hub for Northern California.
- To become a premier location in the region for urban residential living, by building upon existing neighborhoods, and by promoting and expanding a pedestrian-friendly, diverse and exciting range of housing, social, cultural, and arts opportunities.
- To further develop, support, revitalize, and promote the distinct, attractive urban character of each of the downtown districts, and to respect historic resources.

The LUTE includes land use designations for all land within the City's boundaries. Figure IV.B-1 shows the General Plan land use designations for the project site and surrounding area. The project site is designated Central Business District in the General Plan. The General Plan states: "The Central Business District (CBD) classification is intended to encourage, support, and enhance the downtown area as a high density mixed use urban center of regional importance and a primary hub for business, communications, office, government, high technology, retail, entertainment, and transportation in Northern California." The CBD classification includes a mix of large-scale offices and commercial, urban (high-rise), residential, institutional, open space, cultural, educational, arts, entertainment, service, community facilities, and other visitor uses. For sites in the CBD, the maximum Floor Area Ratio (FAR) is 20.0, and the maximum allowable residential density is 300 units per gross acre or 500 units per net acre. The LUTE states that in areas near Lake Merritt, lower FARs may be appropriate.

[1] Oakland, City of, 1998. Community and Economic Development Agency, *Envision Oakland, City of Oakland General Plan, Land Use and Transportation Element, Volume 1*, March.

LSA

LEGEND

- CENTRAL BUSINESS DISTRICT
- URBAN OPEN SPACE
- COMMUNITY COMMERCIAL
- URBAN RESIDENTIAL
- NEIGHBORHOOD CENTER MIXED USE
- PROJECT SITE

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FIGURE IV.B-1

Emerald Views Residential Development EIR

General Plan Land Use Designations

SOURCE: CITY OF OAKLAND; LSA ASSOCIATES, INC., 2008.

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Consistency. Implementation of the proposed project would generally be consistent with the General Plan land use designation of Central Business District. Table IV.B-1 describes the project's consistency with specific LUTE policies. As is noted in the table, the project would not include an affordable housing component. Additionally, the building would be significantly taller than the structures in the immediate vicinity of the project site. The proposed project would introduce a new Downtown residential population and would be consistent with the General Plan goals of creating a high-density, mixed-use urban center with around-the-clock activity by introducing a new permanent residential population at the project site.

(2) Pedestrian Master Plan. The Pedestrian Master Plan[2] 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 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. Lakeside Drive, Jackson Street, 17th Street, and Webster Street are all within close proximity to the project site and are within the Pedestrian Route Network.

Consistency. The project currently proposes a curb cut/drop-off area on 19th Street that would cause an encroachment onto public right-of-way that would be unsafe for pedestrians. However, with implementation of Mitigation Measure TRANS-5 (see section IV.D of this EIR), a minimum sidewalk width would be provided which would remove the pedestrian safety issue. Beyond the issue of the curb cut and pedestrian safety, the proposed project is generally consistent with the Pedestrian Master Plan. The project would include pedestrian enhancing features such as landscaping, and a patio that would connect the site to Snow Park. An analysis of key Pedestrian Master Plan policies that are applicable to the project is provided in Table IV.B-1.

(3) Bicycle Master Plan. The Bicycle Master Plan[3] (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 of the General Plan. The

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

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

BMP defines City policies and recommends actions that would encourage and support bicycle travel improvements.

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.

Consistency. The proposed project is generally consistent with the goals of the BMP. The proposed network improvements would make bicycling safer and a more attractive mode of transportation. In addition, the existing Class 2 and Class 3 bicycle facilities in the vicinity of the project have excess capacity to handle the increase in bicycles as a result of the project. Additionally, the project proposes no features which would be unsafe to bicycle travel. An analysis of key BMP policies that are applicable to the project site is provided in Table IV.B-1.

(4) Housing Element. The Housing Element[4] of the General Plan was adopted by the City Council on December 21, 2010. 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 implements 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.

An analysis of the key Housing Element policies that are applicable to the project is provided in Table IV.B-1 at the end of this section.

Consistency. The proposed project is generally consistent with the Housing Element. The proposed project would add 370 market rate units to Downtown Oakland. The proposed project would not include units affordable to low and very-low income household, but it would attract new residents to the Downtown. Consistent with Housing Element Policies 1.1 and 7.3, the proposed

[4] Oakland, City of, 2010. *Housing Element, 2007-2014.* November 17.

project would provide additional housing units in the Downtown through dense infill development. Consistent with Housing Element Policy 7.4, the proposed project would have a relatively small footprint and would support the use of public transit with its close proximity to BART and AC Transit lines.

(5) Historic Preservation Element. The Historic Preservation Element[5] (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 define the criteria that must be met by a resource before it is listed in Oakland's local register of historical resources. Based on a city-wide preliminary architectural inventory completed by 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 their status as historical resource and identifies those properties warranting special consideration in the planning process. Refer to Section IV.L, Cultural and Paleontological Resources, for more detail on the HPE and the OCHS ratings.

The goals of the Historic Preservation Element include the following:

- Goal 1: To use historic preservation to foster the economic vitality and quality of life in Oakland by:
  - (1) Stressing the positive community attributes expressed by well-maintained older properties;
  - (2) Maintaining and enhancing throughout the City the historic character, distinct charm, and special sense of place provided by older properties;
  - (3) Establishing and retaining positive continuity with the past thereby promoting pride, a sense of stability and progress, and positive feelings for the future;
  - (4) Stabilizing neighborhoods, enhancing property values, and conserving housing stock, increasing public and private economic and financial benefits, and promoting tourist trade and interest through preservation and quality maintenance of significant older properties;
  - (5) Preserving and encouraging a city of varied architectural styles and environmental character reflecting the distinct phases of Oakland's cultural, social, ethnic, economic, political, and architectural history; and
  - (6) Enriching the quality of human life in its educational, spiritual, social, and cultural dimensions through continued exposure to tangible reminders of the past.
- Goal 2: To preserve, protect, enhance, perpetuate, use, and prevent the unnecessary destruction or impairment of properties or physical features of special character or special historic, cultural, educational, architectural or aesthetic interest or value. Such properties or physical features include buildings, building components, structures, objects, districts, sites, natural features related to human presence, and activities taking place on or within such properties or physical features.

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

Consistency. The project site is currently occupied by historic landscaped gardens and is adjacent to two historic 1920s apartment buildings and two historic garages. The gardens and four structures are listed on the California Register of Historical Resources, and have been found to be eligible for the National Register of Historic Places. The City of Oakland's local register of historical resources also includes these resources, and the project site is identified in two Areas of Primary Importance: the 244 Lakeside Drive Building Group API and the Lake Merritt API. The proposed project would require complete or near-complete removal of the gardens, and thus would impact the gardens significantly. The proposed project would also significantly impact the four historic structures in the immediate vicinity of the project site by fundamentally altering the structures' setting, which has been identified as a central component of the structures' historic significance. The proposed project is not consistent with either goal of the Historic Preservation Element. Table IV.B-1 describes the project's consistency with the Historic Preservation Element policies. However, the HPE presents a broad multi-faceted strategy that seeks to promote preservation in a manner that is reasonably balanced with other concerns, City goals and objectives. This Element spells out, through specific policies and actions, how the City will treat historic properties and achieve this balance.

Inconsistencies between a project and individual policies do not constitute a significant physical environmental impact in and of themselves. Physical impacts associated with cultural resources are discussed in Section IV.H, Cultural and Paleontological Resources.

(6) Open Space, Conservation and Recreation Element. In the Open Space, Conservation and Recreation (OSCAR) Element, [6] policies address the management of open land, natural resources, and parks in Oakland. OSCAR policies that are applicable to the project site are discussed in Table IV.B-1. The City-wide park acreage goal set by the OSCAR Element is 10 acres of parkland per 1,000 residents. The City's park ratio at the time the OSCAR Element was completed (1996) was approximately 7.5 acres of parkland per 1,000 residents. The Central/Chinatown Area, in which the project site is located, contains approximately 13 percent of the City's open space. Lakeside Park is the best known and most heavily used regional park within the City. To capitalize on the presence of Lake Merritt and Lakeside Park, the OSCAR Element includes recommendations that the perimeter neighborhoods could include a more strongly defined "Lake District" neighborhood within Oakland, creating gateways, views, and improved pedestrian connections to the perimeter park. Circulation changes to improve accessibility from nearby neighborhoods to the lake in order to connect surrounding areas are further developed in the 2002 Lake Merritt Park Master Plan.

Consistency. The proposed project is generally consistent with the OSCAR Element, it would provide approximately 14,220 square feet of public, useable open space, including an entry plaza along 19th Street and stone patio on the western portion of the site, adjacent to Snow Park. In addition, the proposed project may incorporate green technologies, including a rainwater collection system, photovoltaic panels and other solar collectors that would generate energy.

A guiding principle of the OSCAR Element is that there should be no net loss of public open space in the City. The existing garden located on the project site is on private property and is not open to the public. The removal of the garden would not directly conflict with the no net loss of public open space policy as the garden is not a public open space. However, the removal of the existing mature trees (which would be subject to applicable Standard Conditions of Approval related to tree removal

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

and preservation) and garden vegetation would diminish the tree canopy and sense of openness provided by the site, which currently provides visual open space adjacent to Snow Park. Additionally, the proposed project would cast shadows onto Snow Park; however, Snow Park is shadowed by other existing buildings during much of the year, and the addition of the shadow cast by the proposed project is not expected to impact the beneficial use of the park. Other policies contained in the OSCAR that are relevant to the proposed project are discussed in Table IV.B-1.

(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."[7] Noise from these sources is 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.

Consistency. The proposed project would generally be consistent with the Noise Element of the General Plan as it is not expected to result in new noise sources that would significantly increase noise within the project area. Additionally, the proposed project would be subject to Standard Conditions of Approval that would 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.

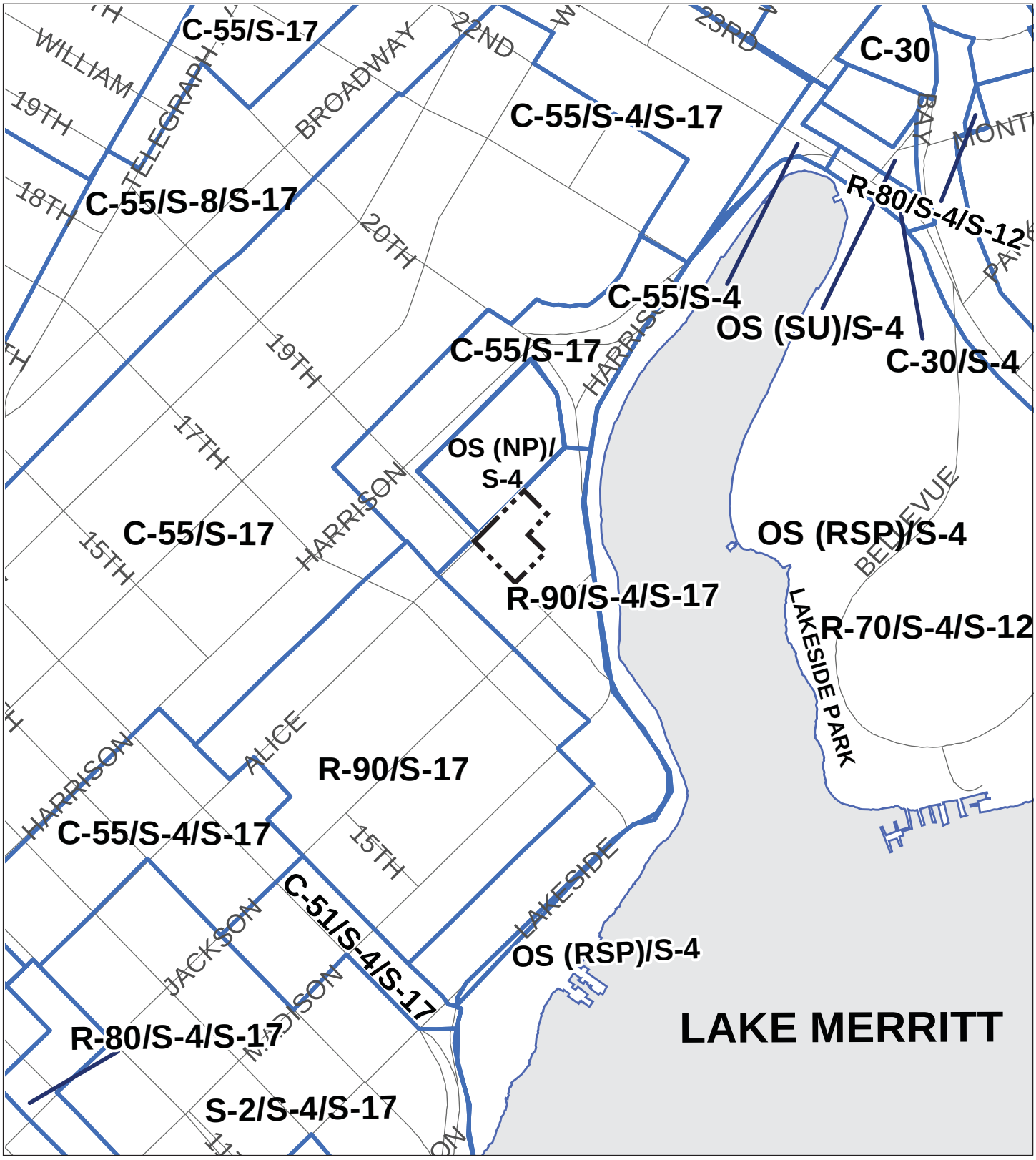
(8) Safety Element. Adopted in November, 2004, the City of Oakland's Safety Element, Protect Oakland, is intended to "reduce the potential risk of death, injuries, property damage, and economic and social dislocation resulting from large-scale hazards."[8] This Element addresses public safety, geologic 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.

Consistency. The proposed project is generally consistent with the Safety Element. The project would be required to conform to all applicable safety regulations including fire codes and emergency access, and requirements regarding seismic safety. 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 districts, each of which is assigned different regulations. These regulations direct the construction, nature, and extent of building use at the time of project application completeness. The project site is designated as R-90 Downtown Apartments Residential Zone; S-4, Design Review; and S-17, Downtown Residential Usable Open Space Zoning Districts, and is shown in Figure IV.B-2.

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

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



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LEGEND

PROJECT SITE

ZONING BOUNDARY

RESIDENTIAL ZONING

R-70 HIGH DENSITY
R-80 HIGH-RISE APT.
R-90 DOWNTOWN APT.

OPEN SPACE ZONING

OS (NP) NEIGHBORHOOD PARK
OS (RSP) REGION-SERVING PARK
OS (SU) SPECIAL USE

COMMERCIAL ZONING

C-30 DISTRICT SHOPPING
C-55 CENTRAL CORE

SPECIAL ZONING

S-2 CIVIC CENTER
S-4 DESIGN REVIEW
S-17 DOWNTOWN RESIDENTIAL

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SOURCE: CITY OF OAKLAND; LSA ASSOCIATES, INC., 2008.

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FIGURE IV.B-2

Emerald Views Residential Development EIR

Zoning Designations

The City of Oakland Planning Code states that the R-90 Downtown Apartments Residential zone is intended to create, preserve, and enhance areas for high-rise apartment living at high densities appropriate to areas within, or in close proximity to, the Oakland Central District. For large-scale developments with over 100,000 square feet of new floor area or more than 120 feet tall in this zone, a Conditional Use permit is required unless a valid planned unit development permit is in effect. There is no maximum height prescribed for residential buildings in this zone. However, the R-90 zone regulations require that any project with three or more dwelling units on a lot undergo the City's Design Review process to ensure the project conforms to the design review criteria for high density housing as adopted by the City Council.

According to the Planning Code, the S-4, Design Review zone "is intended to create, preserve and enhance the visual harmony and attractiveness of areas which require special treatment and the consideration of relationships between facilities, and is typically appropriate to areas of special community, historical, or visual significance." New buildings and facilities in the S-4 zone are required to obtain approval through the design review process pursuant to the Design Review Criteria in the City of Oakland Municipal Code Section 17.136. For residential facilities, design review approval may be granted based on the following criteria, as well as any additional applicable design review criteria:

- The proposed design should create a building or set of buildings that are well related to the surrounding area in their setting, scale, bulk, height, materials, and textures.
- The proposed design should protect, preserve, or enhance desirable neighborhood characteristics.
- The proposed design should be sensitive to the topography and landscape.
- If situated on a hill, the design and massing of the proposed building should relate to the grade of the hill.
- The proposed design should conform in all significant respects with the Oakland Comprehensive Plan and with any applicable district plan or development control map which has been adopted by the City Council.

The provisions of the S-17, Downtown Residential Usable Open Space zone establish open space standards for residential development. The provisions specify that 75 square feet of usable open space be developed for every standard residential unit. In addition, provisions for the S-17 zone define the appropriate size, shape, openness, usability, accessibility, and enclosure of open space associated with residential projects. Residential development within the S-17 zone can provide a combination of private usable open space, public ground floor plaza open space, widened sidewalks, rooftop open space, courtyards, and off-site open space in order to satisfy the open space standards in this zone.

On July 21, 2009, the City of Oakland adopted new Central Business District zoning regulations to make the zoning ordinance consistent with the Central Business District General Plan designation and to reflect current development trends. The intent of the updated zoning regulations is to maintain the downtown as a regional transportation hub, the East Bay's high rise office center and its ideal location for dense residential buildings, while respecting the diversity of existing neighborhoods and preserving historic resources, cultural institutions and open space recreational opportunities. The amended regulations replace 12 zoning designations, including the R-90 Downtown Apartment Residential Zone, one of the zoning designations for the project site. The new zoning designation for the project site is CBD Residential (CBD-R).

The intent of the CBD-R designation is to create, maintain, and enhance areas of the Central Business District appropriate for residential development with small-scaled compatible ground-level commercial uses. The new regulations identify the project site as being within Height Area 4, which requires 90 square feet of lot area per residential unit and allows a maximum building height of 275 feet. A conditional use permit is required for projects that have more than 200,000 square feet of new floor area or a proposed height greater than 250 feet.

While the new regulations have been adopted by the City, the Emerald Views Residential Development applicant submitted a complete application prior to adoption of the new standards. The Ordinance adopting the CBD specifically directs the Planning Commission to consider the project on its merits under the previous zoning and that the new height limits, and other new requirements must not be considered. As such, the old zoning designation development standards (R-90) still apply to the project site.

Consistency. The proposed project would be consistent with the City's R-90 Downtown Apartments Residential zoning designation since it would result in the development of a high-rise apartment building with high density housing appropriate to areas within the Oakland central district. The project would require a Major Conditional Use Permit (CUP) to allow for a large-scale development with over 100,000 square feet of new floor area or more than 120 feet tall within the R-90 Downtown Apartment Residential Zone. A Major Interim Conditional Use Permit is also required for a proposed density that exceeds the R-90 zoning but is permitted by the Central Business District General Plan designation. A Minor Conditional Use Permit is required for General Food Sales activity in the cafe. The project would be required to undergo the City's Design Review process to ensure that the project conforms to the design review criteria for high density housing as adopted by the City Council.

The proposed project would require minor variances for the following elements:

- Outside General Food Sales
- Percentage of compact parking spaces
- Number of required parking spaces for the Permanent Residential and General Food Sales activities
- Parking space dimensions when next to a column of other obstruction
- Omission of three required loading berths

The project site is located within the S-4, Design Review zone and would be required to obtain design review approval through the City's Design Review process. The proposed building would be taller than any buildings in the vicinity of the site and the contrast between the building's height and topography and landscape of Snow Park would be a noticeable difference. The proposed building would include a contemporary architecture design adjacent to buildings with historic, 1920s architectural styles. However, the commercial buildings south and east of the site also have contemporary high-rise architectural styles and the proposed building would be in an area with both contemporary and historical architecture. Further review of the merits of the projects design would occur during the City's Design Review Process. If the CUPs and other variances are approved, then the project would be consistent with zoning regulations.

In accordance with the S-17, Downtown Residential Usable Open Space open space standards, the project's 370 residential units would be required to provide 27,750 square feet of usable open space. The proposed project includes 35,070 square feet of combined private and common open space.

c. Sustainable Development Initiative. The Oakland City Council adopted a Sustainable Community Development 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.

Consistency. The proposed project, which comprises an infill residential project in close proximity to public transportation that would incorporate green building techniques if feasible[9], would generally be considered consistent with the intent and objectives of the Sustainable Development Initiative. The project would include if feasible: installation of photovoltaic panels; installation of solar collectors; reuse of rainwater for landscape watering; vertical axis wind turbines for energy production, and other green building techniques.

d. Lake Merritt Park Master Plan. Lake Merritt Park consists of 155 acres of continuous parkland surrounding Lake Merritt, a unique fresh and salt-water lake. Lake Merritt Park includes a 3.4 mile perimeter lake trail, recreational areas, public gardens, playgrounds, boating facilities, and open space areas. Panoramic views of the skyline in the vicinity of the project site are available from various vantage points within the Park and from the perimeter lake trail.

Views of the skyline in the vicinity of the project site from the east shore of Lake Merritt.

The Lake Merritt Park Master Plan[10] includes design guidelines for landscape, circulation, and buildings on a zone by zone basis within five zones around the Park. The parkland located adjacent to the northeast of the project site is referred to as the Downtown Park edge. The Park Master Plan includes plans to redesign the intersection of Harrison Street and 20th Street to enlarge Snow Park and the lake park border in order to improve pedestrian access from downtown by simplifying the existing intersection and reducing the number of crossings.

The Park Master Plan includes a Sunlight Access and Shadow Study, which observes that tall buildings located on the perimeter of the park reduce solar access for park users and disrupt the

[9] The Proposed Project will be required to construct the new building to mandatory Calgreen performance standards. Calgreen is a newly enacted State building code requirement, which is effective January 2011. The City deemed the project application complete prior to adoption of the local Green Building Ordinance. Therefore, the project is not subject to the Ordinance.

[10] Oakland, City of, 2002. *Lake Merritt Park Master Plan.*

normal growing conditions for park vegetation (including Snow Park). According to the plan, the imbalance of scale presented by these masses can create an uncomfortable sensory condition for those using the lawns, pathways, and benches nearby, often characterized as the feeling as being "walled in." Tall buildings (20+) floors standing alone can be visually distracting when viewed from a distance. Four-to-twelve-story residential buildings, typically found on Lakeside Drive near Snow Park and on Lakeshore Avenue, have greater façade articulation and tall trees in the foreground generally provide a positive atmosphere for park users.

The Park Master Plan states that views of tall buildings on the downtown edge are generally more scenic when viewed from across the lake as opposed to up close due to the more comfortable scale relationship between people and buildings afforded at that distance.

General recommendations in the Park Master Plan include the following:

- Buildings should accommodate ample room for tall tree plantings in the foreground and along the street.
- The design review process required by adjacent zoning should consider sunlight access and building mass impacts to the park and its users.
- The placement of new buildings should consider views to popular landmarks from the Lake Merritt park area. These include the County Court House, the Kaiser Convention Center, the Oakland Hills, St. Paul's Church, the Tribune Building, and other buildings of visual importance.

Consistency. The proposed project would result in the construction of a high-rise residential building approximately 457 feet adjacent to Snow Park and would be visible from Lake Merritt Park. The height of the proposed building could result in reduced solar access to Snow Park and could create an imbalance of scale, as defined by the Lake Merritt Park Master Plan. The Plan states that four-to-twelve-story residential buildings with tall trees incorporated in the landscaping generally provide a positive atmosphere for Park users, while tall buildings located on the perimeter of parks reduce solar access for park users and can create an uncomfortable sensory condition for those using the parks. The height of the proposed residential building would create a stark contrast in its relationship to Snow Park. As required by the S-4 Design Review zoning designation, the proposed project would be required to obtain approval through the design review process. At that time, the height of the proposed building and the proximity of the project to Snow Park would be further reviewed.

A more detailed discussion of potential shade and shadow and visual impacts of the proposed project on parks in the vicinity of the site is provided in Section IV.M, Aesthetics, Shadow and Wind.

2. Impacts and Mitigation Measures

As has been noted throughout this section, the proposed project is generally consistent with the City of Oakland's land use regulations. The exceptions to this general consistency relate to the historic preservation policies contained within the Historic Preservation Element and other elements. The proposed project would result in removal of an identified City of Oakland Historic Resource and changes to the setting of adjacent historic buildings.

As noted earlier, inconsistencies between a project and individual policies do not constitute a significant physical environmental impact in and of themselves; as such, the project's consistency with applicable policies is discussed separately from the physical land use impacts associated with the

project. 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's consistency with regional policies related to physical environmental topics (e.g., air quality, transportation, and noise) is fully analyzed and discussed in those topical sections.

Table IV.B-1 provides a detailed series of evaluations of the proposed project's relationship to select relevant policies from applicable elements of the City's General Plan.

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

Policy	Policy Text	Project's Relationship to Policy
Land Use and Transportation Element (LUTE)		
Industry and Commerce Policies		
Policy I/C3.4	Strengthening Vitality. The vitality of existing neighborhood mixed use and community commercial areas should be strengthened and preserved.	The project would increase the residential population and provide housing in close proximity the downtown commercial district. The proposed project would include a small commercial component.
Policy I/C4.1	Protecting Existing Activities. Existing industrial, residential, and commercial activities and areas which are consistent with long term land use plans for the City should be protected from the intrusion of potentially incompatible land uses.	The proposed project would include residential and commercial uses which would be consistent with the existing land uses in the area.
Transportation and Transit-Oriented Development Policies		
Policy T2.3	Promote neighborhood-serving commercial development within one-quarter mile of established transit routes and nodes.	The project includes a small commercial component and would be located within one-quarter mile of the 19th Street BART station and AC Transit lines.
Policy T3.3	Allowing Congestion Downtown. For intersections within Downtown and for those that provide direct access to Downtown locations, the city should accept a lower level of service and a higher level of traffic congestion than is accepted in other parts of Oakland. The desired pedestrian-orientated nature of Downtown activity and the positive effect of traffic congestion in promoting the use of transit or other methods of travel should be recognized.	The traffic analysis for the project is provided in Section IV.D, Traffic Circulation and Parking. As is described in this section, the project would not result in significant intersection-related traffic impacts to any of the study intersections under the Near Term plus Project conditions. Two intersections (Telegraph Avenue/27th Street and Harrison Street/20th Street/Lakeside Drive) were identified as being significantly impacted by the project under the Cumulative plus Project Conditions. However, mitigation measures are provided which reduce this impact to a less-than-significant level.
Policy T3.6	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.	The closest designated transit streets to the project site are Harrison Street and 19th Street. After implementation of mitigation measures, the proposed project would not result in any significant impacts to intersections in the downtown area. As such, the project would not inhibit the movement of or access to transit vehicles on the nearby transit streets.
Policy T3.8	Screening Downtown Parking. Cars parked in downtown lots should be screened from public view through the use of ground floor store fronts, parks and landscaping, or other pedestrian-friendly, safe, and attractive means.	Parking would be provided in the below-grade garage and would not be visible from the surrounding area.
Policy T3.11	Parking in residential areas should give priority to adjacent residences.	Parking would be provided for residents of the project in the below-grade parking garage.

Table IV.B-1 *Continued*

Policy	Policy Text	Project's Relationship to Policy
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 Oakland 19th Street BART station is located approximately 4 blocks from the project site. The 19th Street BART/Uptown Transit Center, which is served by several transit lines, is approximately three blocks from the project site. Bicycle parking areas would be provided within the project. The proximity of the project site to a variety of transportation modes would allow for easy access to transit options. Additionally, the applicant would be required to submit a Transportation Demand Management (TDM) Plan as described in Standard Condition of Approval COA TRANS-1.
Downtown Policies		
Policy D1.1	The characteristics that make downtown Oakland unique, including its strong core area; proximity to destinations such as Jack London waterfront, Lake Merritt, historic areas, cultural, arts, and entertainment activities; and housing stock, should be enhanced and used to strengthen the downtown as a local and regional asset.	The project would remove a historic garden, which would result in a significant unavoidable impact to this historic resource. It would also cause a substantial adverse change in the historical significance of adjacent historic structures and the Lakeside Drive Building Group API. As such, the project would not enhance or strengthen this historic part of Oakland. However, housing on the site could strengthen the downtown as a local and regional asset. The project applicant would be required to obtain design review approval through the City's Design Review process.
Policy D1.2	The downtown should be viewed as the compilation of a series of distinct districts, including but not limited to City Center, Chinatown, Old Oakland, the Broadway Corridor, Gateway, Kaiser Center, Gold Coast, the Channel Park area south of Lake Merritt, and the Jack London Waterfront. A distinct identity for these downtown districts should be supported and enhanced.	The project would significantly impact the Lakeside Drive Building Group API and the Lake Merritt API, thus changing the current identity of the area. However, the introduction of the new building could lead to a new identity for the area.
Policy D1.7	Planning for the Gold Coast. The Gold Coast should be recognized and conserved as an established neighborhood providing urban density housing in a unique urban setting.	The project would provide urban density housing which would be consistent with the urban nature of the Gold Coast neighborhood.
Policy D2.1	Enhancing the Downtown. Downtown development should be visually interesting, harmonize with its surroundings, respect and enhance important views in and of the downtown, respect the character, history and pedestrian-orientation of the downtown, and contribute to an attractive skyline.	The project would be significantly taller than any of the current surrounding residential development and would exceed the height of any downtown building. While the proposed project would be of a different scale and style than the adjacent buildings, it would not necessarily be incompatible with other buildings in the vicinity of the project site. The proposed project would result in significant impacts to several historic resources onsite and in the immediate vicinity of the project. Additionally, the project applicant would be required to obtain design review approval through the City's Design Review process.

Table IV.B-1 *Continued*

Policy	Policy Text	Project's Relationship to Policy
Policy D3.1	Promoting Pedestrians. Pedestrian-friendly commercial areas should be promoted.	The project would include a commercial component on the ground floor of the building that would include a café with food service accessible to the general public. Additionally, the project would incorporate other pedestrian friendly design features such as landscaping, benches, and lighting on the project site in the vicinity of 19th Street and Snow Park.
Policy D3.2	Incorporating Parking Facilities. New parking facilities for cars and bicycles should be incorporated into the design of any project in a manner that encourages and promotes safe pedestrian activity.	The entrance for the parking garage would be clearly visible to pedestrians on the sidewalk and the parking areas would be located below ground.
Policy D5.1	Encouraging Twenty-Four Hour Activity. Activities and amenities that encourage pedestrian traffic during the work week, as well as evenings and weekends should be promoted.	The project would increase the permanent residential population in the downtown and would assist in encouraging pedestrian traffic throughout the day, as well as in the evenings and on weekends.
Policy D6.2	Reusing Vacant or Underutilized Buildings. Existing vacant or underutilized buildings should be reused. Repair and rehabilitation, particularly of historic or architecturally significant structures, should be strongly encouraged. However, where reuse is not economically feasible, demolition and other measures should be considered. (Landmark and Preservation District properties must follow Policy 2.4 of the Historic Preservation Element.)	The project would involve the demolition of the historic garden currently located on the project site. The proposed project would incorporate features from the existing garden where feasible; the southwest corner of the site, along 19th Street and adjacent to Snow Park, may include a stone patio with elements relocated from the existing garden.
Policy D8.2	Respecting Public Parks. Future office development on Harrison Street opposite Lakeside Park and Snow Park should provide ground level landscaped open space to soften the edge between public park land and the office core. This space should be clearly accessible to office workers and the public.	The proposed project site is immediately adjacent to Snow Park. The project would include landscaping on the ground level. The project would include a café accessible to the general public and an associated patio in the vicinity of 19th Street and Snow Park.
Policy D10.1	Encouraging Housing. Housing in the downtown should be encouraged as a vital component of a 24-hour community presence.	The project would provide an additional 370 residential units in downtown.
Policy D10.2	Locating Housing. Housing in the downtown should be encouraged in identifiable districts, within walking distance of the 12th Street, 19th Street, City Center, and Lake Merritt BART stations to encourage transit use, and in other locations where compatible with surrounding uses.	The project would involve the construction of residential housing units within four blocks of the 19th Street BART station and six blocks to City Center.
Policy D10.3	Framework for Housing Densities. Downtown residential areas should generally be within the Urban Density Residential and Central Business District density range where not otherwise specified. The height and bulk should reflect existing and desired district character, the overall city skyline, and the existence of historic structures or areas.	The project would provide urban housing in the downtown. The project density would exceed the allowable R-90 Downtown Apartment Residential Zone density for the project site of 215 units. The height and modern appearance of the building would be noticeably different than the existing historic apartments in the vicinity of the site. The proposed project would be one of the tallest buildings within the city skyline. See responses to Policies D1.1, D10.5 and D10.6.
Policy D10.4	Providing Housing for a Range of Needs. Housing in the downtown should not be geared toward anyone housing market, but rather should be promoted for a range of incomes, ownership options, household types, household sizes, and needs.	The project would be provide market-rate housing and would provide a limited range of unit types; it would not provide affordable units.

Table IV.B-1 *Continued*

Policy	Policy Text	Project's Relationship to Policy
Policy D10.5	Designing Housing. Housing in the downtown should be safe and attractive, of high quality design, and respect the downtown's distinct neighborhoods and its history.	The project would provide safe housing with a contemporary design. Mitigation Measure CULT-2, the extension of opaque balcony treatments on the floors adjacent to the historic buildings, would partially reduce the impacts to these buildings. The project's contemporary appearance may not respect the historic character of the surrounding areas. The project applicant would be required to obtain design review approval through the City's Design Review process.
Policy D10.6	Creating Infill Housing. Infill housing that respects surrounding development and the streetscape should be encouraged in the downtown to strengthen or create distinct districts.	The project would provide 370 units of infill housing within an existing residential district. The project's modern appearance may not be consistent with the historic character of the surrounding areas. The project applicant would be required to obtain design review approval through the City's Design Review process.
Policy D13.2	Providing Parking. An adequate quantity of car, bicycle, and truck parking, which has been designed to enhance the pedestrian environment, should be provided to encourage housing development and the economic vitality of commercial, office, entertainment, and mixed use areas.	Five stories of below-grade parking would be constructed to provide approximately 357 off-street parking spaces. The Oakland Municipal code requires that the project provide 375 parking spaces. Since the project is only proposing 357 spaces, the project would not meet code requirements for parking supply (a shortfall of 18 spaces). The project would include bike racks for 28 bikes. The proposed project would require a minor variance for the omission of three loading berths. Additionally, the applicant would be required to submit a Transportation Demand Management (TDM) Plan as described in Standard Condition of Approval COA TRANS-1.
Neighborhood Policies		
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 project would provide 370 units of infill housing within an urban area. The project's consistency with the General Plan is analyzed throughout Section IV.B.
Policy N3.8	Require 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.	The project site is located within the S-4 Design Review zone and would be required to obtain design review approval through the City's Design Review process.
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.	The proposed project is oriented to capture sunlight and views of Lake Merritt and downtown. The proposed project is substantially taller than surrounding residential development. Given the height of the building, the proposed project would generate significant shadows: an evaluation of shade/shadow impacts is provided in Section IV. M. The project would include the required amount of on-site open space.
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.	Parking would be provided in below-grade parking areas and would not be visible. However, as proposed, the 357 spaces would fall short of the 375 spaces required by the Oakland Municipal code.

Table IV.B-1 *Continued*

Policy	Policy Text	Project's Relationship to Policy
Policy N5.2	Buffering Residential Areas. Residential areas should be buffered and reinforced from conflicting uses through the establishment of performance-based regulations, the removal of non-conforming uses, and other tools.	Surrounding land uses, which include residential, commercial and open space, are not of a type that would result in a fundamental land use conflict with proposed residential uses.
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.	The project would provide market-rate housing in a limited range of unit types. The project proposes 216 1-bedroom and 154 2-bedroom units.
Policy N6.2	Increased Home Ownership. Housing developments that increase home ownership opportunities for households of all incomes are desirable.	The project would provide 370 units of market-rate condominiums and would provide a limited range of unit types.
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.	The project would be one of the tallest buildings in the area and would be substantiality (14 to 30 stories) higher than surrounding development and adjacent buildings in the R-90 zone. The proposed project would be required to undergo the City's design review process in order to determine the project's compatibility with surrounding areas in terms addressed by that process.
Policy N9.7	Creating Compatible but Diverse Development. Diversity in Oakland's built environment should be as valued as the diversity in population. Regulations and permit processes should be geared toward creating compatible and attractive development, rather than "cookie cutter" development.	The project would be one of the tallest buildings in the area and would be substantiality (14 to 30 stories) higher than surrounding development. The proposed project would be required to undergo the City's design review process in order to determine the projects compatibility with surrounding areas in terms addressed by that process.
Policy N9.9	Respecting Architectural Integrity. The City encourages rehabilitation efforts which respect the architectural integrity of a building's original style. (see the Historic Preservation Element for more information).	The project would involve the demolition of the historic garden currently located on the project site. The proposed project would incorporate features from the existing garden where feasible; the southwest corner of the site, along 19th Street and adjacent to Snow Park, would include a stone patio with possible elements relocated from the existing garden.
Policy N11.3	Requiring Strict Compliance with Variance Criteria. As variances are exceptions to the adopted regulations and undermine those regulations when approved in large number, they should not be granted lightly and without strict compliance with defined conditions, including evidence that hardship will be caused by unique physical or topographic constraints and the owner will be deprived privileges enjoyed by similar properties, as well as the fact that the variance will not adversely affect the surrounding area nor will it grant special privilege to the property. In those instances where large numbers of variances are being requested, the City should review its policies and regulations and determine whether revisions are necessary.	The proposed project would require variances for the following elements: outside general food sales; percentage of compact parking spaces; number of required parking spaces for the permanent residential and general food sales activities; parking space dimensions when next to a column or other obstruction; and omission of three required loading berths.

Table IV.B-1 *Continued*

Policy	Policy Text	Project's Relationship to Policy
Pedestrian Master Plan Policies		
PMP Policy 1.1	Improve pedestrian crossings in areas of high pedestrian activity where safety is an issue.	The project would not directly improve pedestrian crossings. Recommendation TRANS-1 would require the project applicant to install pedestrian crosswalks and ADA-compliant ramps with domes at the intersections of Jackson Street and 19th Street.
PMP Policy 1.3	Strive to maintain a complete sidewalk network free of broken or missing sidewalks or curb ramps	The project would add one driveway midblock on 19th Street between Jackson Street and Alice Street. The project includes a curb cut/drop-off area on 19th Street that would cause an encroachment onto public right-of-way that would be unsafe for pedestrians. However, with implementation of Mitigation Measure TRANS-5 a minimum sidewalk width would be provided which would remove the pedestrian safety issue.
PMP Policy 2.1	Create and maintain a pedestrian route network that provides direct connections between activity centers.	The project would feature pedestrian access to the proposed development. In addition, it would provide direct access to adjacent Snow Park from the project site.
PMP Policy 3.1	Encourage the inclusion of street furniture, landscaping, and art in pedestrian, improvement projects.	The proposed project would incorporate pedestrian friendly design features such as landscaping, benches, and lighting on the project site in the vicinity of 19th Street and Snow Park.
Bicycle Master Plan Policies		
BMP Policy 1A	Develop and improve Oakland's bikeway network.	The proposed project would not result in any changes to the existing bikeway network. Recommendation TRANS-2 would require the project applicant to construct the 20th Street bikeway between Harrison Street and Franklin Street.
Housing Element Policies		
Policy 1.1	Downtown and Major Corridor Housing Program. The City will target development and marketing resources in the downtown and along the City's major corridors that are easily accessible to transit, jobs, shopping and services.	The project would provide 370 units of new housing and would attract approximately 966 additional residents to the downtown. The project site would be accessible to transit, jobs, shopping and services.
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.	If feasible, the proposed project would include installation of photovoltaic panels; installation of solar collectors; reuse of rainwater for landscape watering; and vertical axis wind turbines for energy production.

Table IV.B-1 *Continued*

Policy	Policy Text	Project's Relationship to Policy
Policy 7.2	Minimize Energy Conservation. Encourage the incorporation of energy conservation design features in existing and future residential development beyond minimum standards required by State building codes.	If feasible, energy conservation design features would include: installation of photovoltaic panels; installation of solar collectors; reuse of rainwater for landscape watering; and vertical axis wind turbines for energy production.
Policy 7.3	Encourage Development That Reduces Carbon Emissions. Continue to direct development toward existing communities and encourage infill development at densities that are higher than – but compatible with – the surrounding communities. Encourage development in close proximity to transit, and with a mix of land uses in the same zoning district, or on the same site, so as to reduce the number and frequency of trips made by automobile.	The project would provide 370 additional residential units through infill development and would be consistent with high density urban housing. The proposed density would be greater than surrounding areas.
Policy 7.4	Minimize Environment Impacts From New Housing. Work with developers to encourage construction of new housing that, where feasible, reduces the footprint of the building and landscaping, preserves green spaces, and supports ecological systems.	The project would have a reduced footprint with an emphasis on increased residential space through increased building height. The new residential population created by the project would be in close proximity to public transit. The proposed project would replace the existing private historic garden located on the site; however, the project would provide 13,420 square feet of public open space at ground level.
Historic Preservation Policies		
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."	The project site contains the Schilling Garden, a recognized historic resource that has received a rating of A1+ from the Oakland Heritage Cultural Survey. The project site is adjacent to two historic 1920s apartment buildings and two historic garages. The gardens and four structures are listed on the California Register of Historical Resources, and have been found to be eligible for the National Register of Historic Places. The City of Oakland's local register of historical resources also includes these resources. The project site is identified in two Areas of Primary Importance: The 244 Lakeside Drive Building Group API and the Lake Merritt API. The project would remove a historic garden, which would result in a significant unavoidable impact to this historic resource. It would also cause a substantial adverse change in the historical significance of adjacent historic structures, the Lakeside Drive Building Group API, as well as result in a cumulative impact to the API.
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 City actions.	See above response to Policy 1.2 and Policy D1.1.

Table IV.B-1 *Continued*

Policy	Policy Text	Project's Relationship to Policy
Policy 3.5	Historic Preservation and Discretionary Permit Approvals. For additions or alteration to Heritage Properties or Potential Designated Historic Properties requiring discretionary City permits, the City will make a finding that: (1) the design matches or is compatible with, but not necessarily identical to, the property's existing or historical design; or (2) the proposed design comprehensively modifies and is at least equal in quality to the existing design and is compatible with the character of the neighborhood; or (3) the existing design is undistinguished and does not warrant retention and the proposed design is compatible with the character of the neighborhood. For any project involving complete demolition of Heritage Properties or Potential Designated Historic Properties requiring discretionary City permits, the City will make a finding that: (1) the design quality of the proposed project is at least equal to that of the original structure and is compatible with the character of the neighborhood; or (2) the public benefits of the proposed project outweigh the benefit of retaining the original structure; or (3) the existing design is undistinguished and does not warrant retention and the proposed design is compatible with the character of the neighborhood.	Section IV.H, Cultural and Paleontological Resources, identifies significant and unavoidable impacts to historic resources as a result of implementation of the proposed project. If the City approves the proposed project, the Planning Commission will be required to adopt a Statement of Overriding Considerations, which will identify the benefits of the proposed project and explain the ways in which they counter-balance the loss of the historic resources. As part of the City's permit process, the other finding would also have to be adopted.
Policy 3.7	Property Relocation Rather Than Demolition as Part of Discretionary Projects. 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.	If feasible, the concrete arbor and other garden elements located on the project site may be relocated on the site, and many of the existing plants would be transplanted as part of the proposed Planting Plan. The garden as a whole is not proposed to be reconstructed or relocated to anther site. Implementation of Mitigation Measures CULT-1a through CULT-1e would address impacts to the historic garden and include the reuse and salvage of materials; however, impacts would remain significant and unavoidable.
Open Space, Conservation and Recreation Element Policies		
Policy OS-2.1	Manage Oakland's urban parks to protect and enhance their open space character while accommodating a wide range of outdoor recreational activities.	While the project would remove a historic garden, this private open space is not available to the public and as such, does not contribute to the open space character of the area. The proposed project would cast shadows onto Snow Park; however, Snow Park is shadowed by other existing buildings during much of the year, and the addition of the shadow cast by the proposed project is not expected to impact the beneficial use of the park.

Table IV.B-1 *Continued*

Policy	Policy Text	Project's Relationship to Policy
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.	Approximately 14,220 square feet of public, usable open space would be provided on the project site. An entry plaza would be provided along 19th Street, and the southwest corner of the site would include a stone patio and may include elements relocated from the existing garden. A 40th floor viewing area would be provided. The project would be located adjacent to Snow Park and the landscaped entry plaza on the southwestern portion of the site would be designed to compliment the open space in Snow Park. Approximately 20,850 square feet of private, useable open space would be provided through terraces and balconies, including a roof terrace.
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; (2) views of the downtown and Lake Merritt; (c) views of the shorelines; and (d) panoramic views from Skyline Boulevard, Grizzly Peak Road, and other hillside locations.	The proposed project would be significantly taller than surrounding residential buildings and would change the view of the skyline area from the Lake Merritt area. It would also block existing views from other buildings and from the street level.
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.	While the proposed project would be of a different scale and style than the adjacent buildings, it would not be incompatible with other buildings in the vicinity of the project site. The proposed project would include a 40th floor viewing area, open to the public.
Policy OS-11.1	Access to Downtown Open Space. Provide better access to attractive, sunlit open spaces for persons working or living in downtown Oakland. The development of rooftop gardens is encouraged, especially on parking garages.	The project site would be immediately adjacent to Snow Park and would be within easy access to open space areas around Lake Merritt Park. The entry plaza and patio area would be designed to compliment the open space within Snow Park. The proposed project would include approximately 6,630 square feet of sunlit private, usable open space as part of the green roof.
Policy OS-12.1	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 draft landscape plan included as part of the project application indicates that 14 trees would be planted or transplanted as part of the project. The project applicant would be required to comply with COA BIO-2 (Tree Removal Permit) and COA BIO-3 (Tree Replacement Planting).
Policy CO-1.1	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.	Construction of the project would remove most of the surface soils on the site as part of the foundation excavation. The City's Standard Conditions of Approval require the following: an Erosion and Sedimentation Control Plan; ; a Post-Construction Stormwater Pollution Management Plan; and a Maintenance Agreement. These Conditions of Approval would help to prevent erosion, siltation, and sedimentation.

Table IV.B-1 *Continued*

Policy	Policy Text	Project's Relationship to Policy
Policy CO-7.1	Protect native plant communities, especially oak woodlands, redwood forests, native perennial grasslands, and riparian woodlands, from potential adverse impacts of development. Manage development in a way which prevents or mitigates adverse impacts to these communities.	The project site is a garden, all plant species on the site have been planted for their aesthetic value. However, the project would require the removal of 30 protected trees on the project site, including five coastal redwoods. In addition, due to construction access 14 trees might also require removal on the 244 Lakeside Drive Apartment Building property. The project applicant would be required to comply with COA BIO-2 (Tree Removal Permit) and COA BIO-3 (Tree Replacement Planting).
Policy CO-7.4	Discourage the removal of large trees on already developed sites unless removal is required for biological, public safety, or public works reasons.	See above response to Policy CO-7.1
Policy CO-12.1	Land Use Patterns Which Promote Air Quality. Promote land use patterns and densities which help improve regional air quality conditions by: (a) minimizing dependence on single passenger autos; (b) promoting projects which minimize quick auto starts and stops, such as live-work development, mixed use development, and office development with ground floor retail space; (c) separating land uses which are sensitive to pollution from the sources of air pollution; and (d) supporting telecommuting, flexible work hours, and behavioral changes which reduce the percentage of people in Oakland who must drive to work on a daily basis.	The proposed project would locate approximately 370 units of housing in a high-density project within an urban area of Oakland, facilitating the use of BART, AC Transit, and pedestrian/bicycle routes. Additionally, the applicant would be required to submit a Transportation Demand Management (TDM) Plan as described in Standard Condition of Approval COA TRANS-1.
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.	If feasible, the proposed project may include: installation of photovoltaic panels; installation of solar collectors; reuse of rainwater for landscape watering; and vertical axis wind turbines for energy production. The applicant would be required to submit for review and approval a Greenhouse Gases Emissions Reduction Plan (GHG plan) containing strategies to increase energy efficiency and reduce GHG emissions from the proposed project to the greatest extent feasible (Mitigation Measure AIR-3). The applicant would be required to submit a Transportation Demand Management (TDM) Plan as described in Standard Condition of Approval COA TRANS-1.
Policy CO-12.6	Control of Dust Emissions. Require construction, demolition and grading practices which minimize dust emissions.	COA AIR-1 would require implementation of construction measures to reduce potential dust emissions.

Table IV.B-1 *Continued*

Policy	Policy Text	Project's Relationship to Policy
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.	If feasible, the proposed project may include: installation of photovoltaic panels; installation of solar collectors; reuse of rainwater for landscape watering; and a vertical axis wind turbines for energy production. The applicant would be required to submit for review and approval a Greenhouse Gases Emissions Reduction Plan (GHG plan) containing strategies to increase energy efficiency and reduce GHG emissions from the proposed project to the greatest extent feasible (Mitigation Measure AIR-3).
Policy CO-13.4	Alternative Energy Sources. 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.	If feasible, the proposed project may include: installation of photovoltaic panels; installation of solar collectors; reuse of rainwater for landscape watering; and a vertical axis wind turbines for energy production. The applicant would be required to submit for review and approval a Greenhouse Gases Emissions Reduction Plan (GHG plan) containing strategies to increase energy efficiency and reduce GHG emissions from the proposed project to the greatest extent feasible (Mitigation Measure AIR-3).
Noise Element Policies		
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 Chapter IV.F, Noise, the proposed project would not create a significant increase in noise in the project area with 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 Chapter IV.F, Noise, the proposed project would not create a significant increase in noise in the project area with 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.	Standard Conditions of Approval included in Chapter IV.F, Noise, would minimize residents of the project noise levels exposure. The Standard Conditions of Approval would also minimize project construction related noise.
Safety Element Policies		
Policy FI-1	Maintain and enhance the City's capacity for emergency response, fire prevention and fire fighting.	The first responder to the project site would be Fire Station 12, which is 0.7 miles from the project site. The OFD considers an acceptable distance to maintain the standard response time.
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 would comply with all applicable building codes and all recommendations in the site-specific geotechnical investigation prepared for the site which would be required as a Standard Condition of Approval.

Table IV.B-1 *Continued*

Policy	Policy Text	Project's Relationship to Policy
Policy GE-2	Minimize the potential risks to human and environmental health and safety associated with past and present use, handling, storage and disposal of hazardous materials.	Standard Conditions of Approval included in Chapter IV.L, Public Health and Safety, would minimize the potential risks to humans and environmental health and safety.
Policy HM-2	Reduce the public's exposure to toxic air contaminants through appropriate land use and transportation strategies.	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 respond to such incidents.	The proposed project would develop residential and commercial space and would not involve industrial use or transportation of hazardous materials. See Chapter IV.L, Public Health and Hazards, for further discussion of this issue and applicable Standard Conditions of Approval.
Policy PS-1	Maintain and enhance the city's capacity to prepare for, mitigate, respond to, and recover disaster emergencies.	Harrison Street and Lakeside Drive are both identified as evacuation routes in the City's Safety Element. The project would not interfere with the City's ability to respond to or recover from emergencies.

Source: City of Oakland General Plan Elements: Land Use and Transportation Element, March 1998; Pedestrian Master Plan, November 12, 2002; Bicycle Master Plan, December 2007; Housing Element, June 15, 2004; Historic Preservation Element, August 1998; Open Space, Conservation and Recreation Element. June 1996; Noise Element, June 2005; and Safety Element, November 2004.

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C. POPULATION AND HOUSING

This section addresses existing conditions, trends, and impacts of the project related to population, housing, and employment. The impact analysis focuses on the inducement of population growth on the area's population and housing.

1. Setting

The following sections utilize data from the U.S. Census Bureau, the California Department of Finance (DOF), the Association of Bay Area Governments (ABAG), and land use data available at the City of Oakland Community and Economic Development Agency (CEDA).

The U.S. Census Bureau conducts the census of population and housing once every decade in the year ending in zero. While the U.S. Census data are considered the most comprehensive source, they are only available every ten years. The DOF Demographic Research Unit provides a single official source of demographic data for State planning and budgeting, including annual population estimates by city and county. ABAG data are used to provide long-term demographic projections in this section.

ABAG data have traditionally represented the best available approximation of future population and employment changes in the greater San Francisco Bay Area. Three models are used to produce the economic and demographic forecasts for the Bay Area. The forecast is prepared for various geographic levels: regional, county, subregional study areas, cities, and census tracks. Modeling assumptions include both land use assumptions (available land and local land use policies) and policy assumptions.

a. Population. Oakland is a highly urbanized city and was incorporated into Alameda County in 1852. From approximately 1852 through 1940, the population of Oakland grew steadily through immigration and incorporation of adjacent lands. The population boomed during WWII. From 1945 to 1980, Oakland experienced a decline in population due to changes in the local economy, migration to suburban communities and other factors. Between 1980 and 2000, Oakland experienced significant and sustained population growth as a result of increased job and housing opportunities and the overall growth in the East Bay economy.

(1) Total Population. Oakland is the most populous city in Alameda County and had an estimated total population of 410,600 in 2005.[1] This represents an increase of 11,116 residents since 2000. During this time period, the City grew by approximately 2.8 percent, which was slightly less than that of the approximately 4.3 percent growth in Alameda County. Prior to that, between 1990 and 2000, the City grew from 372,242 to 399,484 persons, or approximately 7.3 percent across the decade. This growth was lower than the approximately 12.8 percent growth of Alameda County for that decade.[2]

ABAG projects moderate population growth in the City through 2030 due to significant infill and redevelopment potential. ABAG's population growth projections for the City of Oakland, Alameda

[1] Association of Bay Area Governments, 2009. *Projections and Priorities 2009, San Francisco Bay Area Population, Household and Job Forecasts.*

[2] United States Census Bureau, 2006. *Census 1990, Summary Tape File 1, P001.Persons, Oakland, California.* http://factfiner.census.gov. April 24.

County, and the region are shown in Table IV.C-1. ABAG projects that the City's population will increase from 410,600 in 2005 to 529,100 in 2030 (the year for cumulative analysis for this project), an increase of approximately 29 percent. This growth is slightly greater than the projected growth rate in both the County (24.5 percent) and region (22.9 percent).

Table IV.C-1: Projected Population

	2005	2010	2015	2020	2025	2030
City of Oakland	410,600	420,900	446,100	470,900	500,100	529,100
Alameda County	1,505,300	1,549,800	1,626,100	1,705,900	1,787,300	1,874,600
Nine County Bay Area Region	7,096,500	7,341,700	7,677,500	8,018,000	8,364,900	8,719,300

Source: ABAG, 2009. Projections and Priorities 2009, San Francisco Bay Area Population, Household and Job Forecasts.

The project site is currently covered with a private, English garden associated with the historic August Shilling Estate. There is no housing, or population on the project site.

(2) Households. ABAG defines a household as an occupied dwelling unit. According to ABAG statistics, the number of households in the City grew by 2.5 percent, from 150,790 households in 2000 to approximately 154,580 households in 2005. The average household in the City contained 2.61 persons in 2005, slightly less than the average of 2.72 persons per household for all of Alameda County. ABAG projects that the average persons per household rate will decrease slightly to 2.60 in the City of Oakland by 2030.

b. Housing Stock. According to the California DOF, the housing stock in Oakland is characterized by a nearly even mix of multi-family (52 percent) and single-family units (48 percent), and moderate vacancy rates (4.27 percent).[3] There are approximately 79,484 single family homes and 85,162 multi-family homes in the City.[4] Approximately 44 percent (63,321 units) of all occupied housing units in the City were owner-occupied in 2006.[5] The median value of an owner-occupied home in Oakland in 2006 was $590,800. This value was slightly less than the median value of owner-occupied homes in Alameda County ($646,800).[6]

c. Regional Housing Needs Allocation. As required by State law, the Housing Element of the City of Oakland discusses the City's "fair share allocation" of regional housing by income group as projected by ABAG. ABAG's determination of the local share of regional housing needs takes into consideration the following factors: market demand for housing; employment opportunities; availability of suitable sites and public facilities; commuting patterns; type and tenure of housing need; loss of units contained in assisted housing that changed to non-low-income use; and special needs housing requirements. The Housing Element of the General Plan was adopted by the City Council on December 21, 2010.

[3] California Department of Finance, 2009. *City/County Population and Housing Estimates.* January 1.

[4] Ibid.

[5] United States Census, 2006. *American Community Survey, Oakland California Fact Sheet.* Website: factfinder.census.gov/home/saff/main.html?_lang=en.

[6] United States Census, 2006. *American Community Survey, Alameda County California Fact Sheet*. Website: factfinder.census.gov/home/saff/main.html?_lang=en.

In May 2008, ABAG adopted the Final Regional Housing Needs Allocation (RHNA) for the period of 2007 to 2014, which allocates housing needs for different income levels among the jurisdictions within the nine-county Bay Area.[7] Cities and counties are required to account for the RHNA in the housing elements of their General Plans. Under State law, all housing elements must be reviewed by the California Department of Housing and Community Development (HCD); housing elements are certified if they comply with State law and meet certain planning objectives. According to ABAG, some public agencies and private foundations will not provide funding for housing and redevelopment projects to jurisdictions that do not have a certified Housing Element. In addition, jurisdictions without certified housing elements have faced lawsuits from housing advocacy organizations. While HCD requires cities and counties to show through their housing elements that they can accommodate a projected housing need, the presence of adequate land designated for residential uses does not necessarily result in the actual construction of adequate housing supplies. There are no penalties imposed on cities and counties that do not build the number of units projected in their housing elements.

Alameda County's allocation under the RHNA for the period of 2007-2014 calls for 44,937 new housing units; 10,017 units for very low income households, 7,616 units for low income households, 9,078 units for moderate income households, and 18,226 units for above moderate income households.[8] Oakland's allocation is 14,629 units which include 1,900 units for very low income households, 2,098 units for low income households, 3,142 units for moderate income households, and 7,489 units for above moderate units.

d. Employment. Business activity and employment grew substantially in Oakland in the late 1990s, and conditions are anticipated to enable Oakland to retain and enhance its competitive position as a business center for the region. Two types of employment data are described below: 1) total jobs – which indicate the number of all jobs within the community; and 2) employed residents – which indicate the number of residents of working age who actively participate in the civilian labor force. A comparison of these data can provide an indication of commute patterns in a community (i.e., if significant out-commuting or in-community occurs).

The civilian labor force includes those who are employed (excepting those in the armed forces) and those who are unemployed but actively seeking employment. Those residents who have never held a job, who have stopped looking for work, or who have been unemployed for a long period of time are not considered to be part of the labor force.

(1) Total Jobs. According to ABAG, from 2000 to 2030, Alameda County will experience an average rate of job growth when compared to other Bay Area counties. According to ABAG's sub-regional growth study data, in 2000 Oakland had 199,470 jobs, comprising approximately 27 percent of all of the jobs in Alameda County. The total number of jobs in Oakland increased 1.6 percent to 202,570 jobs between 2000 and 2005. By 2030, ABAG projects that the total number of jobs in Oakland will increase 31 percent from 2005, reaching approximately 264,390 jobs. Total jobs in the County decreased from 750,160 in 2000 to 730,270 in 2005 (a 2.7 percent decrease) and are projected

[7] Association of Bay Area Governments, 2008. *Final Regional Housing Needs Allocation.* Website: www.abag.ca.gov/planning/housingneeds/pdfs/Final_RHNA.pdf. May 15.

[8] Ibid.

to increase to 970,490 in 2030 (a 33 percent increase). Oakland jobs are expected to contribute 27 percent of the total jobs in the County in 2030.

(2) Employed Residents. According to ABAG, the City contained 178,716 employed residents in 2000. ABAG defines employed residents as employed people who "live in the identified community or county but do not necessarily work there." Unemployed residents are not counted as employed residents, even if they are actively seeking employment.

ABAG estimates that the number of employed residents in Oakland decreased from 178,716 in 2000 to 175,180 in 2005, but projects that it will increase to 276,900 in 2030. This overall growth in employed residents represents an approximately 58 percent increase from 2005 to 2030. The number of employed residents in the County is expected to increase by 45 percent, from 705,900 in 2005 to 1,025,100 in 2030.

e. Jobs-to-Housing Balance. The jobs-to-housing concept is used to determine whether a community has an adequate number of jobs available to provide employment for all the residents within the community seeking employment. Understanding this concept can be useful in examining the relationship between housing affordability, traffic flows and congestion, and air quality within a community and its larger region. However, the jobs/housing ratio is best analyzed at the sub-regional or regional level due to the tendency of people to commute to their jobs at least some distance, often from one city to the next.

(1) Methodology. Typically, the term "jobs-to-housing balance" is used to refer to a relationship between jobs and housing units within a community. A jobs-to-housing units ratio of 1.5 is considered ideal, which takes into account residents who do not participate in the labor force (e.g., those who are retired, disabled, students, or non-working parents). The 1.5 jobs-to-housing units ratio indicates a community has an adequate number of jobs to meet the demand for jobs by its residents, and therefore, is in balance.

A more helpful indicator of balance, however, is the relationship between the number of jobs provided to the number of residents seeking employment (i.e., employed residents). An ideal jobs-to-employed residents ratio is 1.0, which indicates that there is a job for every employed resident in the community.

A jobs-to-employed residents ratio that is greater than 1.0 indicates the community provides more jobs than it has residents seeking jobs. With this out-of-balance condition, the community is likely to experience traffic congestion associated with people coming to jobs from outside the area, as well as intensified pressure for additional residential development to house the labor force. Conversely, a jobs-to-employed residents ratio of less than 1.0 indicates a community has fewer jobs than employed residents. Under this converse, out-of-balance condition, some residents need to commute outside of the community for employment. The resulting commuting patterns can lead to traffic congestion and adverse effects on both local and regional air quality.

This ratio does not, however, account for regional in- or out-commuting due to job/labor mismatches or housing affordability. Even if a community has a numerical balance between jobs and housing/ employed residents, sizeable levels of in- and out-commuting are possible, especially where employment opportunities do not match local skills and/or the educational characteristics of the local labor

force. In such instances, regional commuting tends to occur. For example, a numerically balanced community may have high housing costs and low-wage jobs, thus encouraging its residents to out-commute to their high wage jobs elsewhere, and its workers to in-commute from outside the community where housing costs are affordable in relation to their low wage incomes. This condition is often referred to as a jobs-to-housing *mis*match. A jobs-to-housing match occurs when the types of jobs provided in a community "match" the income needs of the employed workers within the community.

(2) Jobs-to-Employed Residents in Oakland and Alameda County. Table IV.C-2 provides housing and employment data for Oakland and Alameda County. This table also provides data indicating projected jobs-to-housing units and jobs-to-employed residents ratios. As described earlier in this section, a jobs-to-housing units ratio of 1.5 is considered ideal and indicates that a balanced number of jobs are provided given the number of housing units within the community. Similarly, a jobs-to-employed residents ratio of 1.0 is considered ideal.

As shown in Table IV.C-2, Oakland's jobs-to-employed residents ratios in 2005 and 2015 of 1.16 and 1.06, respectively, indicate that the community will move towards a balance of jobs and employed residents over the 10-year period. Alameda County has a rough balance of employed residents and jobs, as indicated by a jobs-to-employed residents ratio of 1.03 in 2005, and 0.98 in 2015. By 2030, ABAG projects that Oakland's jobs-to-employed residents ratio will decrease to 0.95, indicating that in the future the City will have a rough balance of jobs and workers. Alameda County's jobs-to-employed residents ratio will also decrease through 2030 at 0.95, with more workers than jobs County-wide.

Table IV.C-2: Housing and Employment Data – City of Oakland and Alameda County

	2005		2015		2030	
	City	County	City	County	City	County
Total Jobs	202,570	730,270	209,340	761,270	264,390	970,490
Employed Residents	175,180	705,900	197,620	778,900	276,900	1,025,100
Housing Units	154,580	543,790	167,940	585,400	200,530	676,280
Jobs-to-Housing Unit Ratio (Ideal is 1.5)	1.31	1.34	1.25	1.30	1.32	1.44
Jobs-to-Employed Residents Ratio (Ideal is 1)	1.16	1.03	1.06	0.98	0.95	0.95

Source: ABAG, 2009. Projections and Priorities 2009, San Francisco Bay Area Population, Household and Job Forecasts.

2. Impacts and Mitigation Measures

This section analyzes impacts related to population and housing that could result from the implementation of the proposed project. The section begins with the criteria of significance, which establish the thresholds 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, as appropriate.

a. Criteria of Significance. The proposed project would have a significant impact on population and housing if it would:

- Induce substantial population growth in a manner not contemplated in the General Plan, either directly (for example, by proposing new homes and businesses) or indirectly (for example,

through extensions of roads or other infrastructure), such that additional infrastructure is required but the impacts of such were not previously considered or analyzed;

- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere in excess of that contained in the City's Housing Element.
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere in excess of that contained in the City's Housing Element.

b. Less-Than-Significant Population and Housing Impacts. Implementation of the proposed project would result in the following less-than-significant impacts.

(1) Population Growth. Based on an average household size of 2.61 persons in the City of Oakland, implementation of the proposed project could add approximately 966 persons (370 units x 2.61 persons per unit) to the City's population. However, the proposed project would include 216 one-bedroom units and 154 two-bedroom units, and it is likely that a relatively higher proportion of one-bedroom units would have a smaller than average household size, resulting in fewer than 966 new residents.

The proposed project could also lead to a small amount of indirect population growth associated with the café and other jobs created during the construction and operation phases of the project. The construction jobs would only be temporary and so are not considered below to add to population growth. The proposed café area and associated open space would total 2,832 square feet, which could generate 8 jobs.[9] In addition, 8 to 12 part time or full time employees would be needed for building operation (i.e., management and valets) and maintenance. Assuming each new job translates into a new resident in Oakland, the proposed project has the potential to add approximately 986 residents to the City of Oakland.

ABAG projects that the City will gain approximately 35,500 residents between 2005 and 2015, and approximately 118,500 residents between 2005 and 2030. The population growth that could result from the proposed project would comprise 3 percent of expected population growth in the City between 2005 and 2015 and less than 1 percent of expected population growth between 2005 and 2030. This growth would not be considered significant.

The project site is located within the Oakland Downtown and is currently designated Central Business District (CBD) in the General Plan. The Central Business District (CBD) classification is intended to encourage, support, and enhance the downtown area as a high density mixed use urban center including a mix of large-scale offices, commercial, urban (high-rise), residential, and open space land uses. Population increases associated with infill and redevelopment in the City of Oakland Downtown has been accounted for in both the City's General Plan and ABAG projections.

In addition, the proposed project would constitute infill development within an urbanized area currently served by existing utility infrastructure and would not extend infrastructure to an undeveloped area. The development of high density projects on infill sites is considered by most regional planning agencies to be an efficient and environmentally-sound way to add housing to growing

[9] Assumes an employee generation rate for retail uses (including eating and drinking places) of an employee for every 350 square feet of retail space.

metropolitan regions. The proposed project would not induce substantial unforeseen population growth within the City of Oakland.

(2) Displaced Population or Housing. No housing units or residents currently occupy the project site. Therefore, implementation of the proposed project would not displace residents or housing.

(3) Jobs-to-Housing Ratio. The proposed project would result in approximately 20 jobs on the project site and 370 housing units. Assuming that the existing (2005) and projected (2030) number of employed residents and housing units in the City and County do not take into account project-generated employment growth (20 jobs) and (as exemplified by the Zoning Compliant alternative) only account for 350 housing units on the site, the jobs-to-housing outcome is essentially a wash. There would be an additional 20 jobs and an additional 20 housing units. In order to affect a change in the City's jobs-to-housing ratio at the 0.01 level (e.g., to increase the City's ratio from 1.31 to 1.32), would require either jobs or housing would have a net change of more than 2,000.

(4) Jobs-to-Employed-Residents Ratio. For the same reasons as described above for the jobs-to-housing ratio, the jobs-to-employed-residents ratio would not change as a result of the proposed project.

c. Significant Population and Housing Impacts. Implementation of the proposed project would not result in any significant population or housing impacts.

d. Cumulative Population and Housing Impacts. The proposed project would add 370 housing units to the past and present (i.e., existing) housing stock within the City of Oakland. ABAG anticipates that the number of households in the City of Oakland would increase from 154,580 households in 2005 to 167,940 households in 2015.[10] The units proposed as part of this project would represent approximately 2.8 percent of this projected increase. The addition of 370 housing units would represent less than 1 percent of the existing households within the City of Oakland.

As described previously in this section, the proposed project is anticipated to increase the population of the City of Oakland by 966 persons. This increase represents less than 2.8 percent of the expected population increase between the years 2005 and 2015, and would represent less than 1 percent of the City's current population. This residential growth and increase in residential units is well within the anticipated population growth for the City of Oakland. Implementation of the proposed project along with other cumulative projects in the vicinity would generally fit within the anticipated growth for the City. The proposed project's contribution to this growth would not be cumulatively considerable.

In addition, the project would add approximately 20 jobs to the project site and 20 housing units beyond that allowed under existing zoning. As previously stated, these small changes would not impact the City or County's jobs-to-housing units or jobs-to-employed residents ratios in the short or the long term.

[10] Association of Bay Area Governments, 2009, op. cit.

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D. TRANSPORTATION AND CIRCULATION

This section describes the existing traffic and site access conditions in the vicinity of the proposed project and analyzes the potential impacts of the project on the transportation network.

The transportation impact assessment included in this section conforms to the requirements and methodologies of the City of Oakland Community and Economic Development Agency (CEDA) Transportation Services Division (TSD). The traffic analysis describes the operational characteristics of the existing study area circulation system, determines the circulation system needs based on future traffic demand, and summarizes the potential circulation and transit travel time impacts associated with the development of the proposed project during both the weekday morning and evening peak hours. Appendix B contains technical traffic background information.

This analysis evaluates traffic-related impacts of the proposed project during both the weekday morning and evening peak hours. Traffic conditions are analyzed at 26 key intersections and eight roadway segments in the study area for the following six scenarios:

- Existing Conditions – 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.
- Cumulative Year 2015 (No Project) Conditions – Future conditions with planned population and employment growth and planned transportation system improvements for the year 2015. Growth factors between the Alameda County Congestion Management Agency's Countywide Travel Demand Model (ACCMA Model) base year (2005) and future year (2030) were calculated for each intersection approach, and interpolated to obtain future year (2015) growth factors. These growth factors were applied to Existing Conditions traffic volumes to derive Cumulative Year 2015 (No Project) Conditions traffic volumes.
- Cumulative Year 2015 plus Project Conditions – Future forecasted conditions for the year 2015, as determined in the Cumulative Year 2015 (No Project) Conditions scenario, plus project-related traffic.
- Cumulative Year 2030 (No Project) Conditions – Future conditions with planned population and employment growth and planned transportation system improvements for the year 2030. Growth factors between the ACCMA Model base year (2005) and future year (2030) were calculated for each intersection approach. These growth factors were applied to Existing Conditions traffic volumes to derive Cumulative Year 2030 (No Project) Conditions traffic volumes.
- Cumulative Year 2030 plus Project Conditions – Future forecasted conditions for the year 2030, as determined in the Cumulative Year 2030 (No Project) Conditions scenario, plus project-related traffic.

Although not expressly required by CEQA, this section also includes discussion of other transportation-related topics, including transit loading, BART faregate queuing, 95th percentile queues, signal warrant analysis, intersection collision history, and parking and loading.

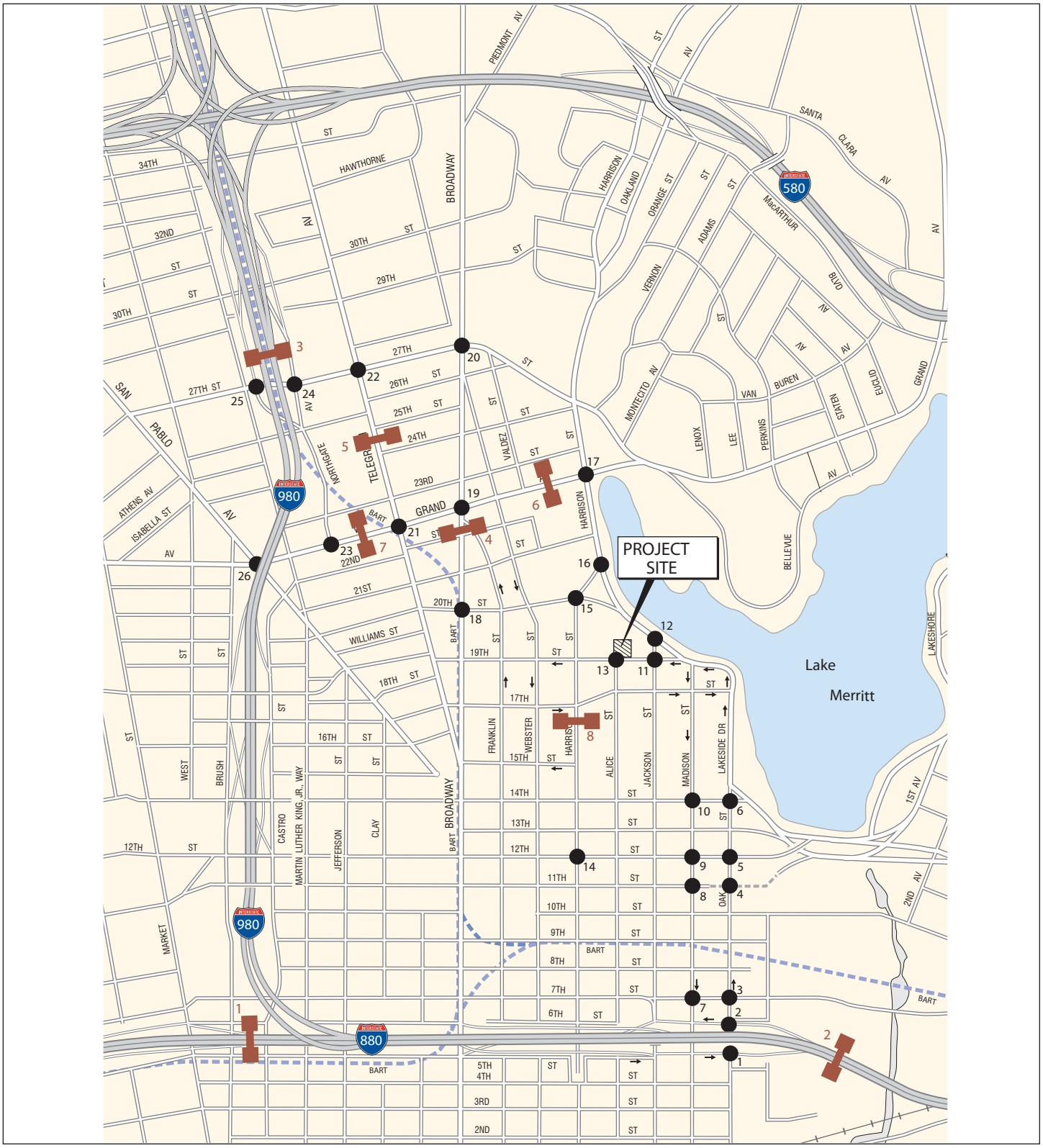
1. Setting

This section describes the existing transportation system in the vicinity of the proposed project, including the regional and local roadway networks, bicycle facilities, pedestrian facilities, and transit services. Existing roadway operations are described and an explanation of the methods used for the traffic analysis is provided. The project study area and study intersections and roadway segments are illustrated in Figure IV.D-1.

a. Existing Roadway Network

(1) Regional Access. A brief description of the regional roadway network serving the project site is provided below. Average daily traffic volumes were obtained from Caltrans' *Traffic Volumes on the State Highway System* (2007).

- ***Interstate 80 (I-80)*** is a regional freeway extending west to San Francisco via the San Francisco-Oakland Bay Bridge, and east through Berkeley, Sacramento, and into Nevada. Four to five lanes are generally provided in each direction on this freeway west of the project site. Access to and from I-80 is provided by Interstate 580 (I-580), Interstate 880 (I-880), and Interstate 980 (I-980). Average daily traffic is 254,000 vehicles per day on the Bay Bridge and 294,000 vehicles per day north of the I-580 Junction.
- ***Interstate 580 (I-580)*** is a regional freeway located west of the project site, stretching from U.S. 101 in Marin County to Interstate 5 (I-5) south of Tracy. I-580 joins I-80 just south of the project site, splitting off further north near Richmond. Access to and from I-580 is provided via I-980. Average daily traffic on I-580 west of the I-580/I-980/State Route 24 (SR 24) Interchange is 218,000 vehicles per day. Additional access to I-580 is provided at the Oakland Avenue/Harrison Street Interchange, with average daily traffic at 201,000 vehicles per day west of the interchange and 203,000 vehicles per day east of the interchange.
- ***Interstate 880 (I-880)*** is a regional freeway located south of the project site, extending between I-80 in Emeryville and Interstate 280 (I-280) in San Jose. Four lanes are generally provided in each direction on this freeway near the project area. Access to and from I-880 is provided at the Jackson Street/Oak Street and Broadway Interchanges, as well as I-980 to the east. Average daily traffic on I-880 is 199,000 vehicles north of Broadway and 222,000 vehicles south of Jackson Street/Oak Street.
- ***Interstate 980 (I-980)*** is a local freeway extending from I-880 to I-580/SR 24 in Oakland. I-980 has three lanes in each direction in the vicinity of the project area. Access to and from I-980 is provided at the 17th Street/18th Street Interchange. Average daily traffic on I-980 north of the interchange is approximately 97,000 vehicles.
- ***State Route 24 (SR 24)*** is a regional freeway between Walnut Creek to the east and Downtown Oakland to the west. SR 24 becomes I-980 at the I-580 interchange. Three lanes are generally provided in each direction on this freeway near the project site. Access to and from SR 24 is provided by I-580 and I-980. Average daily traffic on SR 24 just east of the I-580/I-980/SR 24 Interchange is 137,000 vehicles per day.



LSA

FIGURE IV.D-1

N

NOT TO SCALE

● STUDY INTERSECTIONS

STUDY ROADWAY SEGMENT

Emerald Views Residential Development EIR

Study Intersections and Roadway Segments

SOURCE: DMJM HARRIS, 2009

I:\SDZ0601 19th street\figures\Fig_IVD1.ai (10/29/09)

(2) Local Access. A brief description of the local and arterial streets serving the project site is given below:

- ***Broadway*** is a major north-south arterial stretching from Jack London Square in the south to SR 24 in the north. In the vicinity of the project, Broadway consists of two lanes in the northbound direction and three lanes in the southbound direction. Broadway is the primary north-south roadway in the Downtown area.
- ***Telegraph Avenue*** is a major north-south arterial, beginning at Broadway in Downtown Oakland and continuing north into Berkeley. Generally, there are two through lanes in each direction. Telegraph Avenue, along with San Pablo Avenue, are the primary local roadways connecting Downtown Oakland with Berkeley.
- ***San Pablo Avenue*** is a major north-south arterial stretching from Downtown Oakland north to the City of San Pablo. It is designated as State Route 123 (SR 123). In the vicinity of the project site, San Pablo Avenue operates with two lanes in each direction, with left-turn pockets provided at key intersections. Along with Telegraph Avenue, it is one of the primary local roadways connecting Downtown Oakland with Berkeley.
- ***Harrison Street and Webster Street*** are north-south collectors providing access between the Webster and Posey Tubes to Alameda, Downtown Oakland, and I-580. South of 10th Street, Webster Street and Harrison Street operate as a one-way couplet, with Webster Street serving southbound traffic (towards Alameda) and Harrison Street serving northbound traffic (from Alameda). North of 10th Street, Harrison Street becomes a two-way roadway, while Webster Street remains one-way southbound, operating in a couplet with Franklin Street. In the vicinity of the project site, both Harrison Street and Webster Street generally provide four lanes. Harrison Street continues north of Grand Avenue and offers access to and from I-580 at the Oakland Avenue/Harrison Street Interchange.
- ***Madison Street and Oak Street/Lakeside Drive*** are north-south collectors providing access between I-580, the Lake Merritt area, and I-880. Madison Street and Oak Street/Lakeside Drive operate as a one-way couplet, with Madison Street serving southbound traffic and Oak Street/ Lakeside Drive serving northbound traffic. In the vicinity of the project site, both Madison Street and Oak Street/Lakeside Drive generally provide four lanes. North of 14th Street, Oak Street officially becomes Lakeside Drive, while north of 20th Street, Lakeside Drive merges with Harrison Street and continues north, providing access to I-580 at the Oakland Avenue/Harrison Street Interchange.
- ***20th Street (Thomas L. Berkley Way)*** is an east-west collector between Harrison Street/Lakeside Drive and Castro Street. In the vicinity of the project site, it operates with two lanes in each direction.
- ***Grand Avenue*** is an east-west arterial extending east from Broadway before veering north to connect with Pleasant Valley Avenue. Grand Avenue continues west past Broadway as West Grand Avenue until Maritime Street near the Oakland Army Base, offering access to I-80. In the vicinity of the project site, Grand Avenue generally operates with two lanes in each direction.
- ***19th Street*** is a two-lane, one-way westbound minor street beginning at Lakeside Drive and connecting with 18th Street before ending at Martin Luther King, Jr. Way.

b. Study Intersections. Intersection operating conditions were analyzed at twenty-six (26) key intersections in the vicinity of the project site for the weekday AM and PM peak hours (7:00-9:00

a.m. and 4:00-6:00 p.m.) – hereafter referred to simply as the "AM peak hour" and "PM peak hour." A trip generation and trip assignment study was conducted using the ACCMA model; 26 intersections were selected for study in coordination with the City of Oakland TSD staff and include all locations which could be significantly affected by project traffic. The following study intersections were selected for analysis:

- Intersections outside of Downtown Oakland[1]
    20. Broadway/27th Street (*signalized*);
    22. Telegraph Avenue/27th Street (*signalized*);
    24. Northgate Avenue/27th Street/I-980 Eastbound On-Ramp (*signalized*);
    25. Northgate Avenue/27th Street/I-980 Westbound Off-Ramp (*signalized*); and,
    26. San Pablo Avenue/West Grand Avenue (*signalized*).
- Intersections within Downtown Oakland
    1. Oak Street/5th Street/I-880 Southbound On-Ramp (*signalized*);
    2. Oak Street/6th Street/I-880 Northbound Off-Ramp (*signalized*);
    3. Oak Street/7th Street (*signalized*);
    4. Oak Street/11th Street (*one-way stop-controlled*);
    5. Oak Street/12th Street (*signalized*);
    6. Oak Street/14th Street (*signalized*);
    7. Madison Street/7th Street (*signalized*);
    8. Madison Street/11th Street (*signalized*);
    9. Madison Street/12th Street (*signalized*);
    10. Madison Street/14th Street (*signalized*);
    11. Jackson Street/19th Street (*all-way stop-controlled*);
    12. Jackson Street/Lakeside Drive (*signalized*);
    13. Alice Street/19th Street (*all-way stop-controlled*);
    14. Harrison Street/12th Street (*signalized*);
    15. Harrison Street/20th Street/Kaiser Center Access Road (*signalized*);
    16. Harrison Street/Lakeside Drive (*signalized*);
    17. Harrison Street/Grand Avenue (*signalized*);
    18. Broadway/20th Street (signalized);
    19. Broadway/Grand Avenue (signalized);
    21. Telegraph Avenue/West Grand Avenue (signalized); and
    23. Northgate Avenue/West Grand Avenue (signalized).

c. CMP and MTS Roadway Segments. Based on preliminary trip generation estimates, the project is expected to generate more than 100 trips in both the AM and PM peak hours and therefore requires an Alameda County Congestion Management Agency (ACCMA) analysis. The following roadway segments in the vicinity of the proposed project are designated as part of the Congestion Management Program (CMP) and Metropolitan Transportation System (MTS) roadway networks and were selected for analysis:

[1] Downtown is defined in the Land Use and Transportation Element of the City of Oakland 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.

- Caltrans facilities
    1. I-880, from Market Street to I-980 (*eastbound/westbound*);
    2. I-880, from Oak Street to 5th Avenue (*eastbound/westbound*); and,
    3. I-980, from 27th Street to 29th Street (*northbound/southbound*).
- Non-Caltrans facilities
    4. Broadway, from 19th Street to Grand Avenue (*northbound/southbound*);
    5. Telegraph Avenue, from 20th Street to 27th Street *(northbound/southbound*);
    6. Grand Avenue, from Telegraph Avenue to San Pablo Avenue (*eastbound/westbound*);
    7. Grand Avenue, from Broadway to Harrison (*eastbound/westbound*); and,
    8. Harrison Street, from 14th Street to 20th Street (*northbound/southbound).*

d. Transit Services. The project is served by AC Transit and Bay Area Rapid Transit (BART). The existing network in the vicinity of the project is illustrated in Figure IV.D-2.

(1) Bus Services. AC Transit provides local and regional bus service within Alameda and Contra Costa Counties and between the East Bay and San Francisco's Transbay Terminal. AC Transit bus service in the vicinity of the project is summarized in Table IV.D-1.

In the immediate vicinity of the project, AC Transit lines 11 and 59 provide local service within Oakland. In addition, Line NL provides direct service to San Francisco and parts of the Diamond District and East Oakland via MacArthur Boulevard. In addition to these services within the immediate vicinity of the project, multiple AC Transit lines converge at the 19th Street/Oakland ("19th Street") BART Station and the Uptown Transit Center. These routes provide additional local service within Oakland and regional service to Emeryville, Berkeley, Albany, El Cerrito, and Richmond in the north and San Leandro and Hayward in the south. In addition to the services summarized in Table IV.D-1, an extensive network of "all-nighter" services also connects the project with San Francisco and major destination points in the East Bay during the late evening and early morning.

(2) BART. BART provides local and regional rail service. The 19th Street BART station is located underneath Broadway between 19th Street and 20th Street. The closest station entrance to the project site is located on the southeast corner of the intersection of Broadway/19th Street. This entrance is approximately one quarter mile from the project site, an estimated seven minutes walking distance away.

Three BART lines serve 19th Street Station (Richmond – Millbrae, Pittsburg/Bay Point – San Francisco International Airport (SFO), and Richmond – Fremont). In this regard, all BART stations (with the exception of Dublin/Pleasanton and Castro Valley) have direct service to and from 19th Street Station during the weekday peak and midday periods.

Weekday peak period and midday frequencies on these lines are every 15 minutes, except for the Pittsburg/Bay Point – SFO line, which operate every five to ten minutes during the weekday peak periods. The Richmond – Millbrae line does not operate weekday or Saturday evenings, and does not operate at all on Sundays. Directly above the Station at ground level is the Uptown Transit Center on 20th Street, which allows for easy connections between the various AC Transit lines and BART. Service at 19th Street Station is summarized in Table IV.D-2.

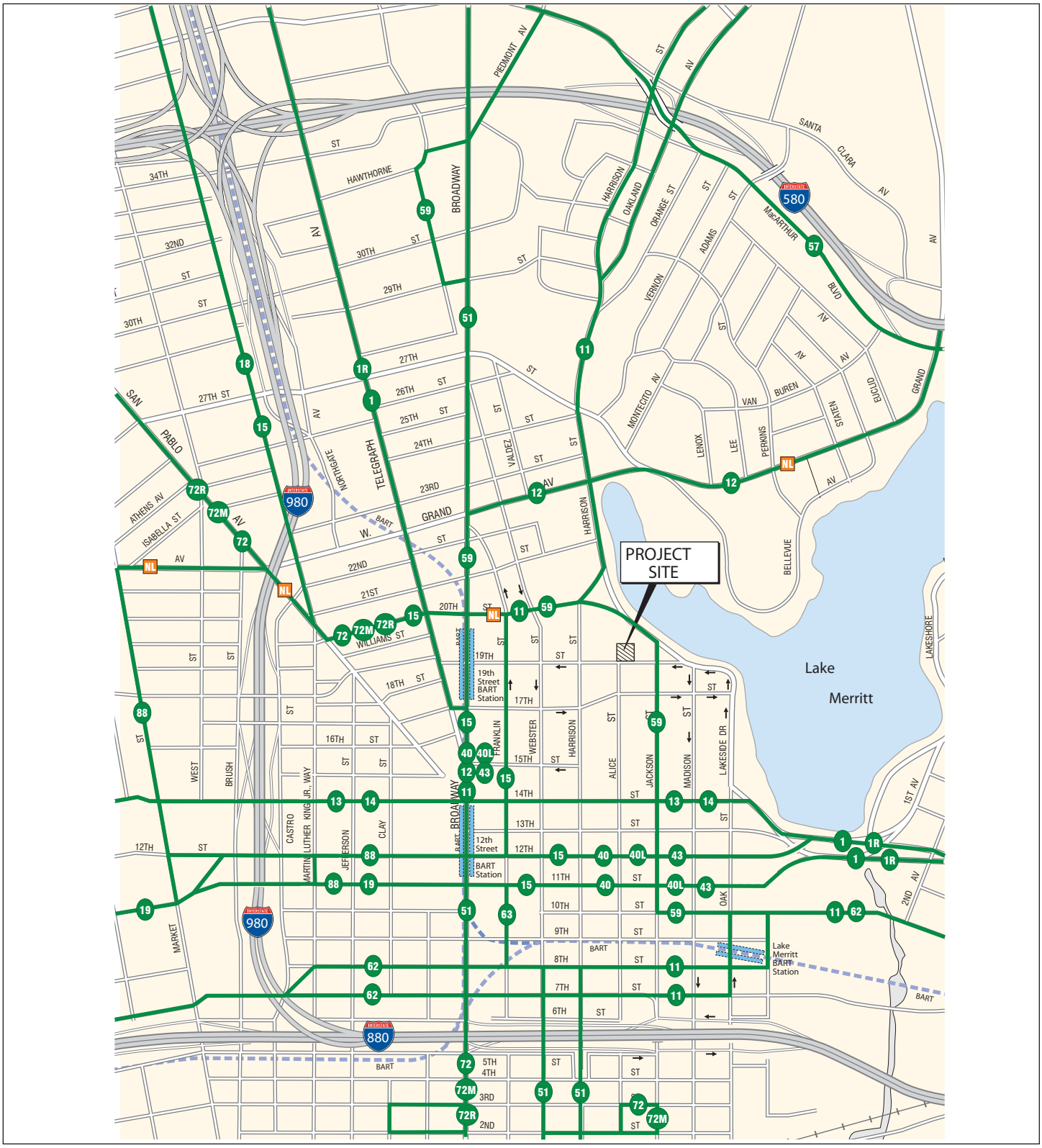


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FIGURE IV.D-2

Emerald Views Residential Development EIR

Existing Transit Network

SOURCE: DMJM HARRIS, 2009

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Table IV.D-1: Existing AC Transit Network

Line	Route	Service Frequency (minutes)		
		Weekday Peak	Weekday Off-Peak	Weekend
1 International	From Downtown Berkeley to Bay Fair BART via Telegraph Ave. and International Blvd.	15	20	20
1R International Rapid	From Downtown Berkeley to Bay Fair BART via Telegraph Ave. and International Blvd.	12	12	15
11 Harrison	From Diamond to Piedmont via 14th Ave., Lake Merritt, Downtown Oakland, and Oakland Ave.	20	30	60
12 Grand	From MacArthur BART to Downtown Oakland via Grand Ave.	20	30	30
13 14th Street	From Oakland Army Base to Trestle Glen via 14th St. and Lakeshore Ave.	20	30	60
14 East 18th Street	From MacArthur BART to Fruitvale via Adeline St., East 18th St., and High St.	15	30	30
15 MLK, Jr.	From UC Berkeley to Downtown Oakland via Martin Luther King, Jr. Way	20	20	20
18	From Albany to Montclair via Shattuck Avenue, Martin Luther King, Jr. Way, and Park Blvd.	15	20	20
19 Hollis	From Downtown Berkeley to Fruitvale via Hollis St. and Alameda	30	30	30
40	From Bay Fair BART to Downtown Oakland via Bancroft Ave. and Foothill Blvd.	8-12	8-12	8-12
51 Broadway	From Berkeley Amtrak to Alameda via University Ave., College Ave., and Broadway Ave.	8-10	8-10	15
59 Piedmont Avenue	From Rockridge BART to Lake Merritt BART via Piedmont Ave. and Downtown Oakland	60	60	60
72 San Pablo Avenue	From Hilltop Mall to Jack London Square via San Pablo Ave.	30	30	30
72M Macdonald	From Point Richmond to Jack London Sq. via San Pablo Ave.	30	30	30
72R San Pablo Rapid	From Contra Costa College to Jack London Sq. via San Pablo Ave.	12	12	----
88 Market	From North Berkeley BART to Lake Merritt BART via Sacramento St. and Market St.	20	20	20
NL MacArthur	From Eastmont Transit Center to San Francisco via MacArthur Blvd.	15	15	30

Source: AC Transit, 2009.

Table IV.D-2: Existing BART Service at 19th Street Station

Corridor	Areas Served	Service Frequency (minutes)		
		Weekday Peak	Weekday Midday	Weekend
Richmond	Richmond, El Cerrito, Albany, Berkeley, North Oakland	7-8	7-8	5-15
Pittsburg/Bay Point	Pittsburg, Concord, Pleasant Hill, Walnut Creek, Lafayette, Orinda, Rockridge	5-10	15	20
Fremont/ Dublin-Pleasanton	Fremont, Union City, Hayward, Dublin, Pleasanton, Castro Valley, San Leandro, East Oakland, Fruitvale	15	15	20
San Francisco/ Daly City/Millbrae	Millbrae, San Bruno, South San Francisco, Colma, Daly City, San Francisco	5	7-8	10

Source: BART, 2009.

As shown in Table IV.D-2, service on BART corridors to/from 19th Street Station generally operates every ten minutes or less during the weekday peak periods. The only exceptions are stations on the Fremont/Dublin-Pleasanton Lines which have 15-minute headways.

Given the nature of Downtown Oakland as a center of commercial activities, transit service heading into Downtown Oakland during the weekday AM and PM peak periods is generally well-utilized. Service in the reverse commute direction (i.e., away from Downtown Oakland) is generally less well-utilized, with the exception of service on routes heading out of Downtown Oakland towards San Francisco, which are generally more utilized during the AM peak period.

e. Pedestrian and Bicycle Conditions. Site observations undertaken during the weekday AM and midday peak periods indicated that the existing bicycle and pedestrian facilities currently operate under acceptable conditions.

(1) Pedestrian Facilities. Sidewalks are provided on all streets in the vicinity of the project site including along 19th Street – the primary pedestrian route between the 19th Street BART Station and the project site. Currently, sidewalks are eight to ten feet in width along most streets in the project vicinity. Sidewalks on Lakeside Drive are narrower, approximately six feet in width. The City of Oakland currently requires that sidewalks be a minimum of five feet in width with a three foot wide through passage provided for new development. These dimensions conform to sidewalk requirements found in the Americans with Disabilities Act Accessibility Guidelines (ADAAG) which are minimum widths for passage, and not sidewalk width recommendations. City of Oakland Pedestrian Master Plan guidelines[2] and the Institute of Transportation Engineers *Design and Safety of Pedestrian Facilities* recommend an unobstructed sidewalk width of five feet. Pedestrian crosswalks are provided in all directions at every intersection within a four block radius of the project site, with the exception of Jackson Street at 18th Street and 19th Street where crosswalks are provided on the west side of the intersection (closest to the project site).

(2) Bicycle Facilities. Bikeways are typically classified as Class 1, Class 2, and Class 3 facilities, depending primarily on the level of separation from vehicular traffic.

- ***Class 1 bicycle facility***: Also known as a bicycle path, this is a dedicated path for bicyclists and pedestrians that does not permit motorized travel. Bicycle paths create a relaxed environment for non-motorized travel and reduce the risk of potential conflict between vehicles and bicyclists. Often these facilities are located in parks or greenway areas, areas connecting two dead-end streets, or atop railroad right-of-way that is no longer in use. The only existing Class 1 bicycle facility in the vicinity of the project consists of portions along the north and west shore of Lake Merritt.
- ***Class 2 bicycle facility***: Also known as a bicycle lane, this is a portion of the roadway network that has been striped and signed for bicycle use. Implementation of Class 2 facilities requires sufficient right-of-way between the vehicle stream and the curb or curbside parking. Bicycle lanes are typically used along collector or major streets with medium to high traffic volumes, providing additional travel space for bicyclists along busy roadway segments. Bicycle lanes exist on most of Grand Avenue/West Grand Avenue and portions of Broadway in the vicinity of the project.

[2] Oakland, City of, 2002. *City of Oakland General Plan, Pedestrian Master Plan Guidelines,* pg. 67. November 12.

- ***Class 3 bicycle facility***: Also known as a bicycle route, this is a bikeway that primarily serves to connect other facilities and destinations in the bikeway network but provides a lower level of service than Class 1 or Class 2 bikeway facilities. These routes include signage but do not have roadway markings or striping to indicate reserved space for the bicyclist. Bicycle routes are easier to implement because they do not require right of way to be reallocated from vehicular traffic. Bicycle routes currently exist on Grand Avenue between Telegraph Avenue and Webster Street.
- ***Class 3A and 3B facilities***: These facilities are similar to Class 3 facilities in that they are shared bicycle-automobile facilities. Class 3A facilities ("arterial bicycle routes") generally have lower posted speed limits (around 25 miles per hour) and feature shared-lane bicycle stencils with wide curb lanes. Class 3B facilities ("bicycle boulevards") are bikeways on low-volume residential streets that prioritize bicycle traffic.

The *2000 US Census* indicates that the bicycle mode share for the census tract containing the project site is approximately 3.5 percent. Figure IV.D-3 illustrates the existing and proposed bikeway network in the vicinity of the project. It should be noted that the existing bikeways illustrated represent the network before the implementation of Measure DD-related bikeway projects (particularly, Lakeside Drive) and other more recent projects such as the Oakland Avenue bike lane.

f. Parking Conditions. The existing on-street and off-street parking supply and occupancy within the project study area are described below.

(1) On-Street Parking. On-street parking is provided on most streets in the immediate vicinity of the project, with the exception of Lakeside Drive, and occupancy rates are low. On-site surveys conducted in October 2008 observed that weekday midday peak on-street parking occupancy was approximately 75 percent along most streets in the vicinity of the project. Most on-street parking in the vicinity of the project is metered or restricted, but some street sections currently provide unrestricted parking. Metered parking is currently charged at the rate of $2.00 per hour (Monday through Saturday, 8:00 a.m. to 8:00 p.m.) within the City of Oakland. Figure IV.D-4 illustrates on-street parking restrictions in the vicinity of the project.

(2) Off-Street Parking. In addition to on-street parking, several off-street parking facilities are located within walking distance of the project. These facilities operate 24 hours, although most of them are not staffed during the evening periods. Observations of off-street parking occupancy indicate that there is significant capacity in these facilities during the evening period, which coincides with the peak parking demand period for residential uses. During the midday period, these facilities have high occupancy rates as a result of employees from office buildings in the area who commute by car. The majority of the surrounding parking facilities charge approximately $3.00 to $4.00 per hour, limited to a maximum daily charge of approximately $8.00 to $20.00.

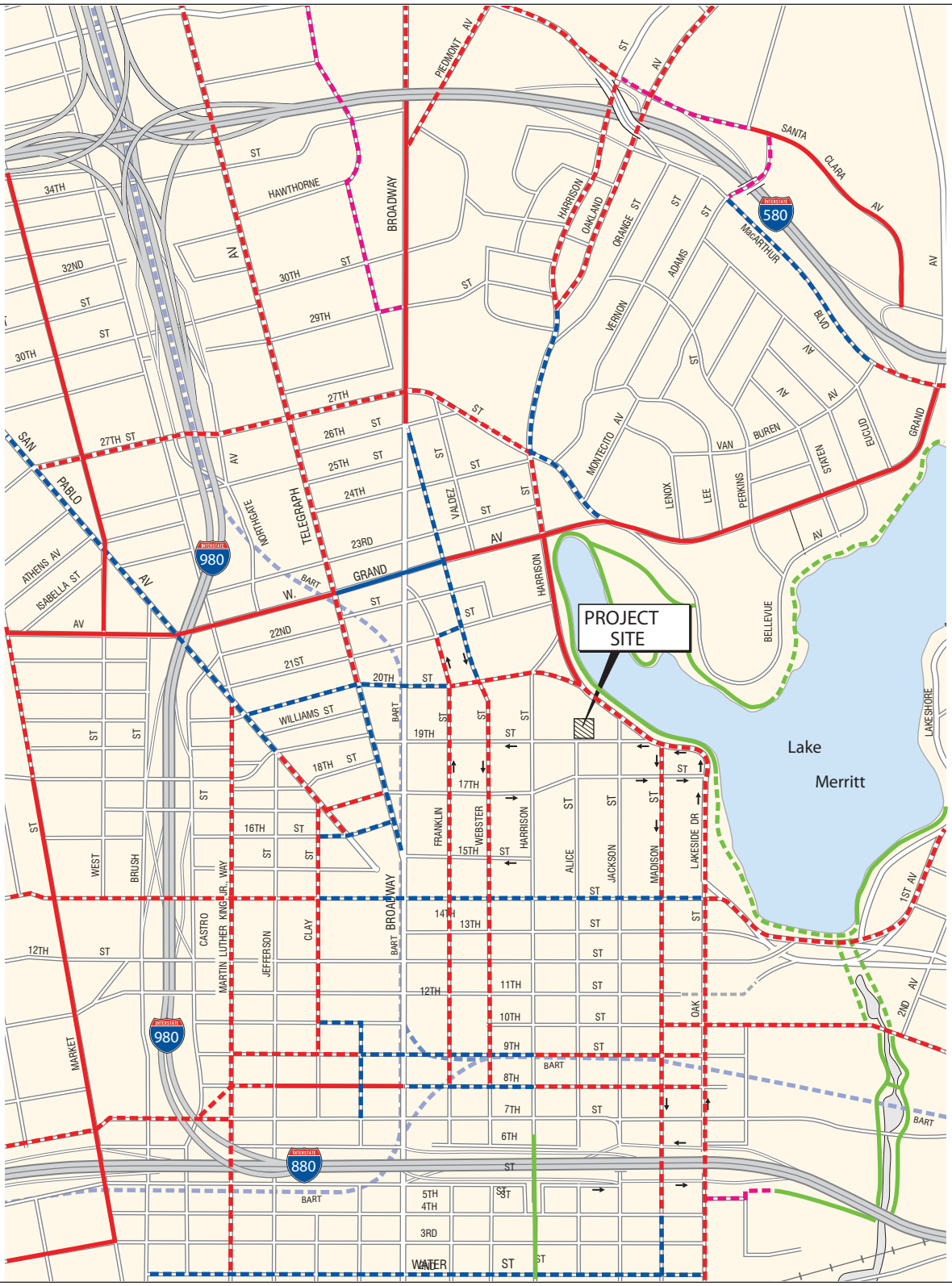

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FIGURE IV.D-3

BIKE PATH (CLASS 1)
BIKE LANE (CLASS 2)
BIKE ROUTE (CLASS 3)
ARTERIAL BIKE ROUTE (CLASS 3A)
BIKE BOULEVARD (CLASS 3B)

NOT TO SCALE

Emerald Views Residential Development EIR

Existing and Proposed Bikeway Network

SOURCE: DMJM HARRIS, 2009

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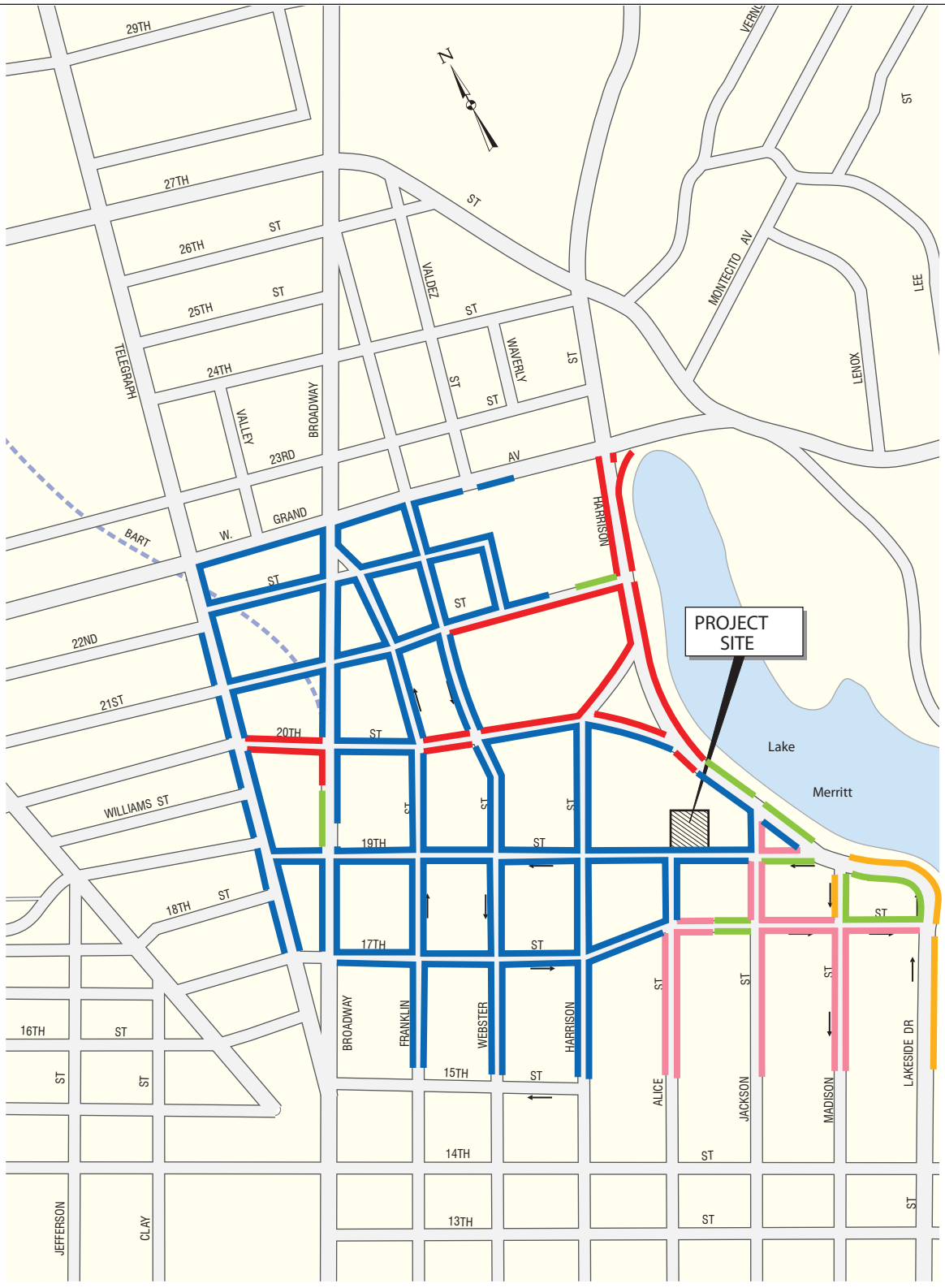

LSA

FIGURE IV.D-4

1-2 HOUR LIMIT METERED
UNRESTRICTED
2 HOUR LIMIT FREE
2 HOUR LIMIT RESIDENT PERMIT EXPECTED
NO PARKING ANYTIME

NOT TO SCALE

NOTE
1. STREET CLEANING RESTRICTIONS ARE NOT NOTED AS THEY DO NOT COINCIDE WITH MIDDAY PEAK.
2. PARKING RESTRICTIONS ARE REFLECTIVE OF THE GENERAL STREET AND DO NOT DISPLAY LOADING, DISABLED, TAXI, ETC. PARKING AREAS.

Emerald Views Residential Development EIR

On-Street Parking in Project Vicinity

SOURCE: DMJM HARRIS, 2009

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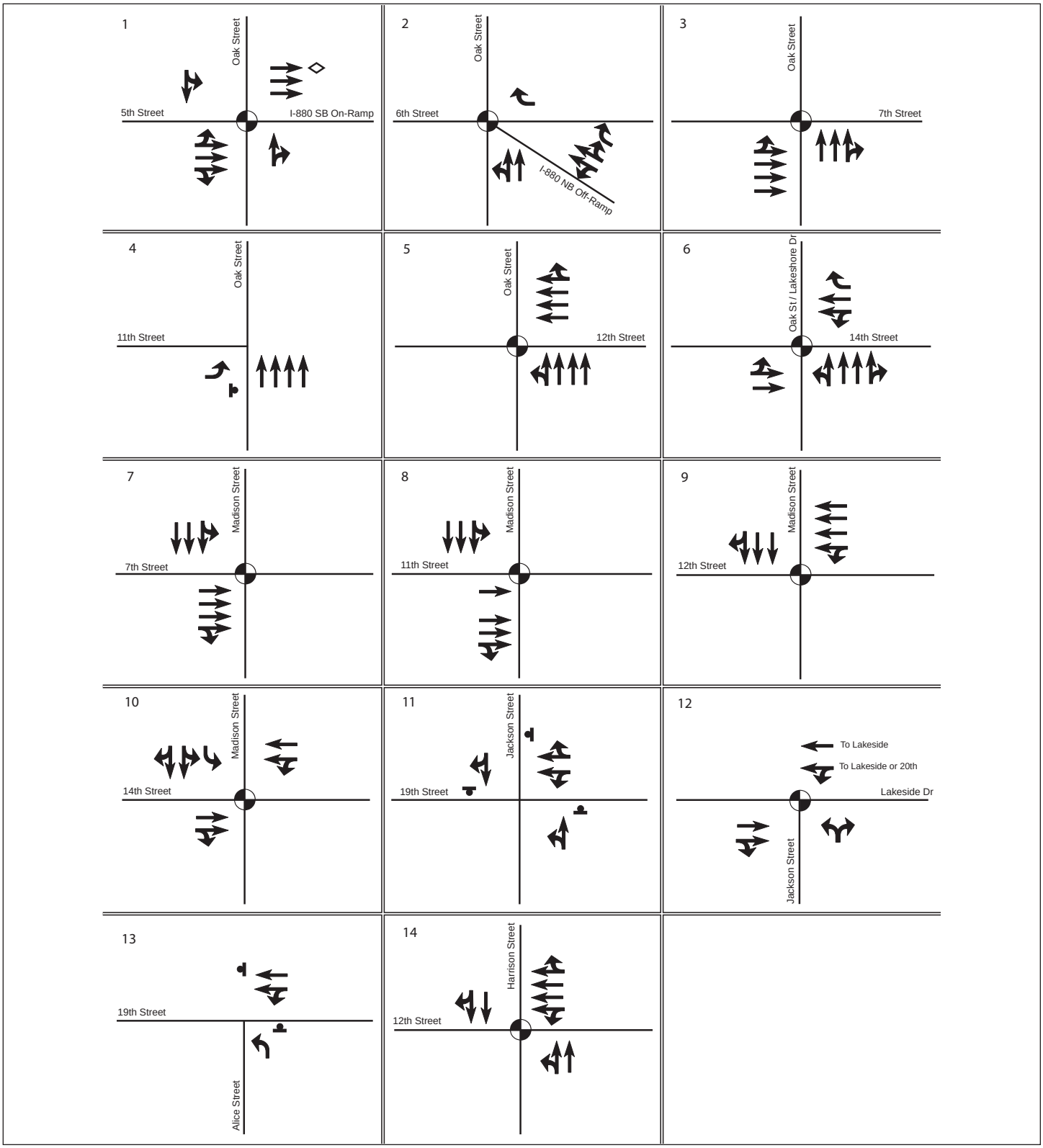

LSA

FIGURE IV.D-5a

N

Traffic Signal

Stop Sign

Emerald Views Residential Development EIR

Existing Intersection Geometry

NOT TO SCALE

SOURCE: DMJM HARRIS, 2009

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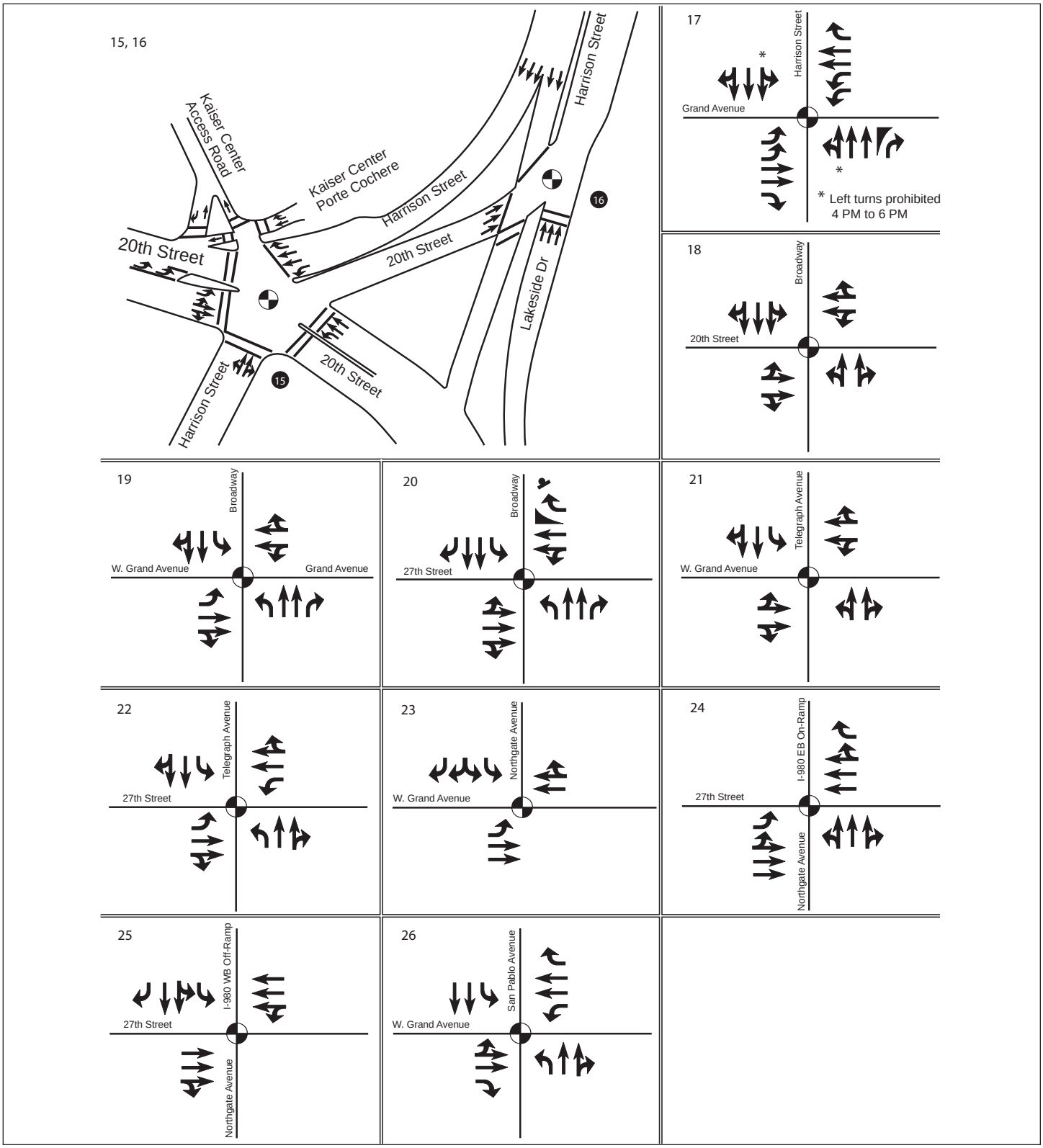

LSA

FIGURE IV.D-5b

SOURCE: DMJM HARRIS, 2009

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Emerald Views Residential Development EIR

Existing Intersection Geometry

g. Existing Conditions Traffic Volumes. To establish existing conditions, weekday turning movement counts for the morning (7:00-9:00 a.m.) and evening (4:00-6:00 p.m.) peak hours were collected on Tuesdays, Wednesdays, and Thursdays of non-holiday weeks in July of 2006; July and September of 2007; in May, June, August, October, and November of 2008; and, in January of 2009. Data concerning the existing intersection configurations and control were collected in the field and are shown on Figures IV.D-5a and 5b. Existing intersection geometry changes were assumed at the following two (2) study intersections in the existing scenarios due to the completion of construction of the proposed improvements as part of the Measure DD Implementation Project:

5. Oak Street/12th Street; and,
6. Oak Street/14th Street.

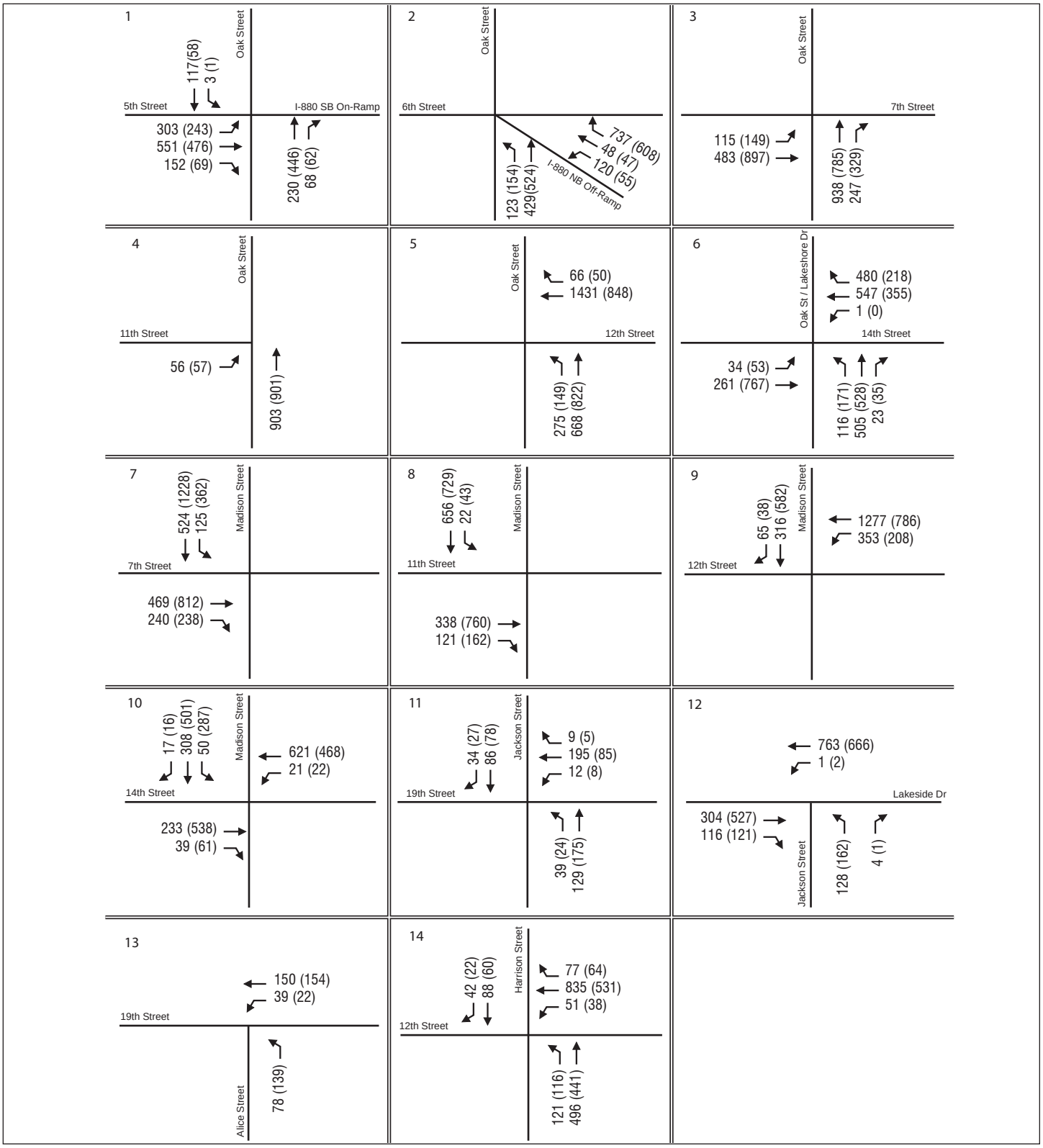
Existing traffic signal timing data was collected for all of the signalized study intersections from the City of Oakland Transportation Services Division, and compared against the actual conditions at study intersections to verify accuracy. Existing AM and PM peak hour volumes are shown on Figures IV.D-6a and 6b.

(1) Level of Service Methodology. The operation of a local roadway network is commonly evaluated using the Level of Service (LOS) methodology. This methodology qualitatively characterizes traffic conditions associated with varying levels of vehicular traffic, ranging from 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). The LOS methodology applies to both signalized and unsignalized intersections and is summarized in Table IV.D-3.

As shown in Table IV.D-3, LOS A, B, and 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 F are generally considered unacceptable. For the Downtown area—generally defined as the area 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—LOS E is considered acceptable.

(2) Signalized Intersections. At signalized study intersections, traffic conditions were evaluated using the *2000 Highway Capacity Manual* (HCM) operations methodology. The operations analysis uses various intersection characteristics (e.g., traffic volumes, lane geometry, and signal phasing/timing) to estimate the average control delay experienced by motorists at an intersection.

(3) Unsignalized Intersections. At unsignalized (one-way, two-way, and all-way stop-controlled) study intersections, traffic conditions were also evaluated using the HCM operations methodology. With this methodology, the LOS is related to the total delay per vehicle for the intersection as a whole (for all-way stop-controlled intersections) or for each stop-controlled approach only (for one- and two-way stop-controlled intersections). Total delay is defined as the total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs the queue. This time includes the time required for a vehicle to travel from the last-in-queue position to the first-in-queue position.



LSA

FIGURE IV.D-6a

N

NOT TO SCALE

Emerald Views Residential Development EIR

Existing Traffic Volumes AM (PM) Peak Hour

SOURCE: DMJM HARRIS, 2009

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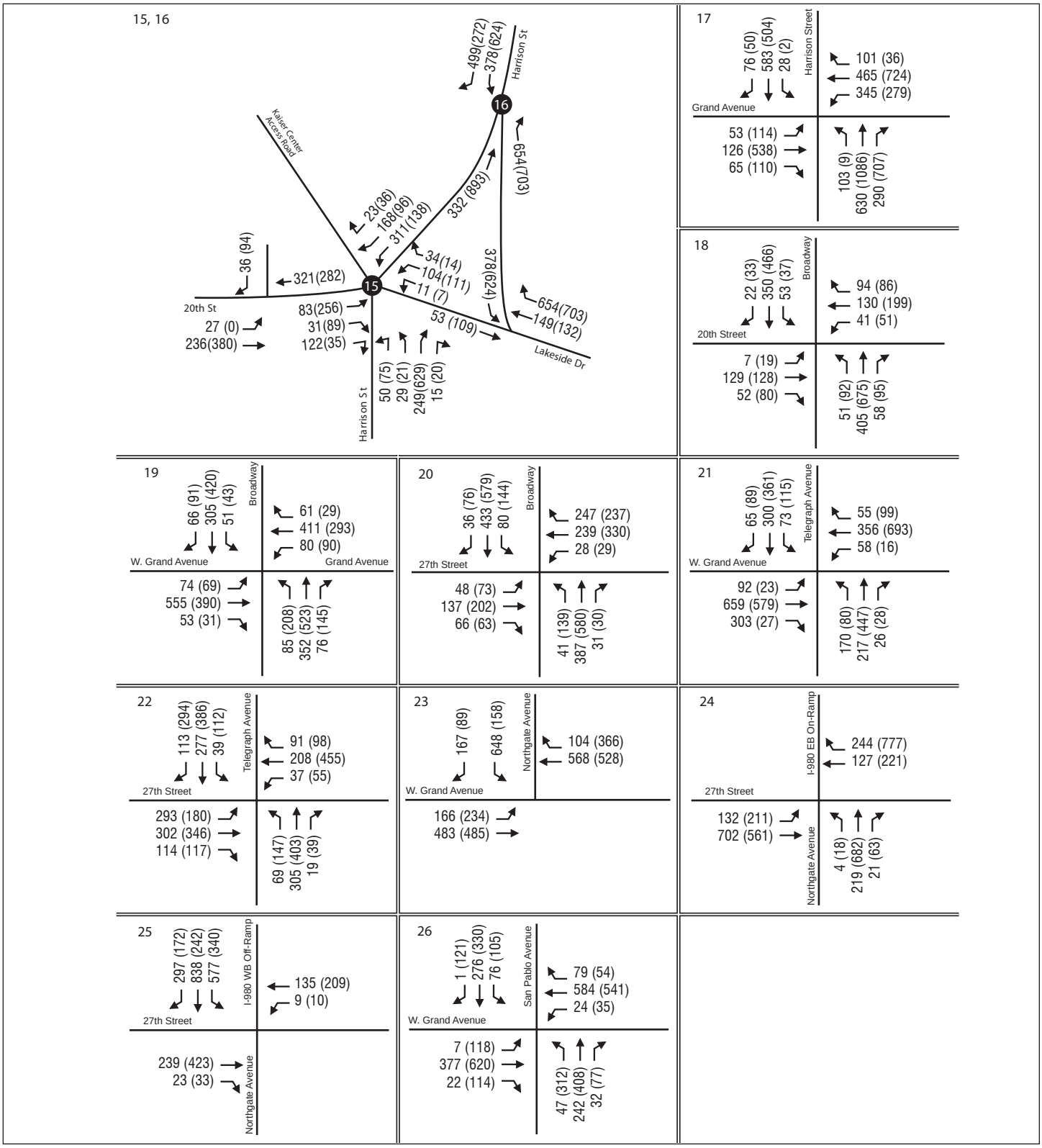

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FIGURE IV.D-6b

NOT TO SCALE

Emerald Views Residential Development EIR

Existing Traffic Volumes AM (PM) Peak Hour

SOURCE: DMJM HARRIS, 2009

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Table IV.D-3: Intersection Level of Service Definitions

Level of Service	Description of Traffic Conditions	Average Delay (seconds per vehicle)
Signalized Intersections		
A	Insignificant Delays: No approach phase is fully utilized and no vehicle waits longer than one red indication.	≤10.0
B	Minimal Delays: An occasional approach phase is fully utilized. Drivers begin to feel restricted.	>10.0 and ≤20.0
C	Acceptable Delays: Major approach phase may become fully utilized. Most drivers feel somewhat restricted.	>20.0 and ≤35.0
D	Tolerable Delays: Drivers may wait through more than one red indication. Queues may develop but dissipate rapidly, without excessive delays.	>35.0 and ≤55.0
E	Significant Delays: Volumes approaching capacity. Vehicles may wait through several signal cycles and long vehicle queues form upstream.	>55.0 and ≤80.0
F	Excessive Delays: Represents conditions at capacity, with extremely long delays. Queues may block upstream intersections.	>80.0
Unsignalized Intersections		
A	No delay for stop-controlled approaches.	≤10.0
B	Operations with minor delay.	>10.0 and ≤15.0
C	Operations with moderate delays.	>15.0 and ≤25.0
D	Operations with some delays.	>25.0 and ≤35.0
E	Operations with high delays, and long queues.	>35.0 and ≤50.0
F	Operation with extreme congestion, with very high delays and long queues unacceptable to most drivers.	>50.0

Source: Highway Capacity Manual, Transportation Research Board, 2000.

(4) CMP and MTS Roadway Segments. The ACCMA analysis addresses project impacts to roadway facilities on the CMP and MTS networks. Caltrans facilities are evaluated using the 2000 HCM methodology, while non-Caltrans facilities are evaluated using the 1985 HCM Methodology. HCM capacity analysis provides a roadway LOS methodology, similar to intersection LOS, based on the volume-to-capacity (v/c) ratio of the roadway. The 1985 Methodology and 2000 HCM Methodology are summarized in Table IV.D-4.

The assumed capacities are 2,000 vehicles per hour per lane (vphpl) for typical freeway segments, and 900 vphpl for arterials such as Broadway, Telegraph Avenue, Grand Avenue, and Harrison Street. LOS E or better is generally considered acceptable and LOS F is considered unacceptable.

Table IV.D-4: Roadway Level of Service Definitions

Level of Service	Description of Traffic Conditions	V/C Ratio	
		1985 HCM Methodology	2000 HCM Methodology
A	Vehicles travel at free-flow speeds and can maneuver almost freely within the traffic stream.	≤ 0.30	≤ 0.30
B	Vehicles travel at free-flow speeds and movement within the traffic stream is only slightly restricted	> 0.30 and ≤ 0.50	> 0.30 and ≤ 0.50
C	Vehicles travel at or near free-flow speed and movement is somewhat restricted. Incidents can cause local queuing.	> 0.50 and ≤ 0.70	> 0.50 and ≤ 0.71
D	Vehicle speed declines as density increases, and maneuverability within the traffic stream is noticeably limited	> 0.70 and ≤ 0.84	> 0.71 and ≤ 0.89
E	Roadway is operating at or near capacity, with vehicles closely spaced. Any incident can cause backups that propagate upstream.	> 0.84 and ≤ 1.00	> 0.89 and ≤ 1.00
F	Roadway operates beyond capacity, with significant queuing at bottlenecks such as key intersections or lane drops. Vehicles are closely spaced and maneuverability is extremely restricted.	> 1.00	> 1.00

Source: Highway Capacity Manual, Transportation Research Board, 1985, 2000.

h. Existing Conditions Intersection Level of Service. It should be noted that the Existing Conditions analysis assumes roadway changes recently installed, (completed in October, 2009), or currently in the process of being constructed as part of the Measure DD Implementation project. Existing (No Project) Conditions analysis has been updated since circulation of the Notice of Preparation (NOP) to ensure consistency with other reports and to ensure a more accurate analysis. These changes include the following improvements:

- Lakeside Drive has been narrowed from the existing four lanes of traffic to two lanes from 14th Street to just beyond 17th Street, and striped with a new Class 2 bicycle facility (bicycle lane).
- The shoreline east of Lakeside Drive has been improved and new trails constructed, and a staircase has been built connecting Lakeside Drive to the Municipal Boathouse.
- Bulbouts have been constructed along Lakeside Drive at the Scottish Rite Center (midblock between 14th Street and 17th Street) and at 17th Street.

The 26 study intersections were analyzed using Trafficware's Synchro 7 (Build 773) software package based on the methodologies outlined in the *2000 HCM*. The existing AM and PM peak hour intersection LOS for the 26 study intersections are shown in Table IV.D-5. The LOS calculation sheets for all study intersections and for all scenarios are provided in Appendix B.

Generally, the City of Oakland's Thresholds of Significance consider LOS E or better acceptable for intersections within the Downtown area and LOS D or better acceptable for intersections outside of the Downtown area. As shown in Table IV.D-5, the Oak Street/5th Street/I-880 SB On-Ramp (PM) study intersection operates at an unacceptable LOS under existing conditions.

Table IV.D-5: Existing Conditions Intersection Levels of Service

No.	Intersection	Traffic Control	Peak Hour	Existing Conditions	
				LOS	Delay
Outside Downtown					
20	Broadway/ 27th Street	Signalized	AM	B	14.8
			PM	B	18.0
22	Telegraph Avenue/ 27th Street	Signalized	AM	B	18.8
			PM	C	29.0
24	Northgate Avenue/ 27th Street/I-980 EB On-Ramp	Signalized	AM	A	8.9
			PM	B	10.9
25	Northgate Avenue/ 27th Street/I-980 WB Off-Ramp	Signalized	AM	B	12.0
			PM	B	11.0
26	San Pablo Avenue/ West Grand Ave	Signalized	AM	B	13.0
			PM	C	21.5
Within Downtown					
1	Oak Street/ 5th Street/I-880 SB On-Ramp	Signalized	AM	E	65.3
			PM	**F**	**>120.0**
2	Oak Street/ 6th Street/I-880 SB On-Ramp	Signalized	AM	B	14.9
			PM	B	11.2
3	Oak Street/ 7th Street	Signalized	AM	A	9.4
			PM	B	14.2
4	Oak Street/ 11th Street[a]	One-Way Stop-Controlled	AM	B	10.5
			PM	B	10.7
5	Oak Street/ 12th Street	Signalized	AM	B	12.8
			PM	B	12.8
6	Oak Street/ 14th Street	Signalized	AM	B	17.4
			PM	C	34.6
7	Madison Street/ 7th Street	Signalized	AM	A	8.8
			PM	B	11.8
8	Madison Street/ 11th Street	Signalized	AM	B	12.1
			PM	B	10.9
9	Madison Street/ 12th Street	Signalized	AM	A	7.7
			PM	A	7.8
10	Madison Street/ 14th Street	Signalized	AM	A	9.6
			PM	B	10.1
11	Jackson Street/ 19th Street	All-Way Stop-Controlled	AM	A	8.6
			PM	A	8.3
12	Jackson Street/ Lakeside Drive	Signalized	AM	A	8.5
			PM	C	24.0
13	Alice Street/ 19th Street	All-Way Stop-Controlled	AM	A	7.6
			PM	A	8.1
14	Harrison Street/ 12th Street	Signalized	AM	B	16.3
			PM	B	13.1
15	Harrison Street/20th Street/ Kaiser Center Access Road	Signalized	AM	C	25.8
			PM	C	25.9
16	Harrison Street/ Lakeside Drive	Signalized	AM	A	6.3
			PM	A	9.4
17	Harrison Street/ Grand Ave	Signalized	AM	C	27.8
			PM	D	39.0
18	Broadway/ 20th Street	Signalized	AM	B	14.2
			PM	B	19.1
19	Broadway/ Grand Avenue	Signalized	AM	B	19.3
			PM	B	16.2
21	Telegraph Avenue/ West Grand Avenue	Signalized	AM	C	24.9
			PM	C	26.3
23	Northgate Avenue/ West Grand Ave	Signalized	AM	C	21.3
			PM	B	17.7

Bold indicates intersections operating at LOS E (outside downtown) or LOS F (outside and within downtown).
[a] Analyzed for worst-approach.
Source: AECOM, 2009.

i. Existing Conditions CMP and MTS Roadway Segment Level of Service. The Existing Conditions AM and PM peak hour roadway segment LOS for the selected study roadway segments are shown in Table IV.D-6. A roadway facility operating at LOS F indicates that the facility is over-capacity (i.e., v/c ratio is greater than 1.00). As shown in Table IV.D-6, all of the study roadway segments currently operate at acceptable conditions (LOS E or better).

2. Cumulative Year 2015 (No Project) Traffic Conditions

This section evaluates traffic operations and potential impacts at the study intersections under Cumulative Year 2015 (No Project) Conditions without the proposed project. Cumulative Year 2015 (No Project) Conditions assumes implementation of planned and funded intersection geometry changes.

a. Future Year Projections. Cumulative Year 2015 (No Project) Conditions traffic volumes were forecast using the June 2007 release of the ACCMA Model. The ACCMA Model was calibrated and validated to Spring 2007 travel conditions (the most up-to-date conditions possible using ABAG Projections 2005 land use data) within Oakland. Refinements to the volume forecasts within the City of Oakland were made to allow for more accurate representation of projected travel demand within city limits.

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 (No Project) scenario assumes no new development on the project site. More information on model assumptions surrounding land use and other developments in the project vicinity is provided in Appendix B.

b. Planned and Funded Transportation Improvements. Planned and funded transportation improvements would affect the intersection geometry at the following seven (7) study intersections in future year scenarios:

- Outside Downtown
    20. Broadway/27th Street;
    22. Telegraph Avenue/27th Street;
    24. Northgate Avenue/27th Street/I-980 Eastbound On-Ramp; and,
    25. Northgate Avenue/27th Street/I-980 Westbound Off-Ramp.
- Within Downtown
    12. Jackson Street/Lakeside Drive;
    15. Harrison Street/20th Street/Kaiser Center Access Road; and,
    16. Harrison Street/Lakeside Drive.

Roadway and intersection geometry changes occurring in the area within the year 2015 timeframe are a result of several different projects. Those projects and associated roadway and intersection geometry changes are described below.

Table IV.D-6: Existing Conditions CMP and MTS Roadway Segment Levels of Service

No.	Roadway Segment	Direction	Existing Conditions	
			LOS	v/c
AM Peak Hour				
Caltrans Facilities				
1	**I-880** between Market Street to I-980	EB	B	0.38
		WB	B	0.47
2	**I-880** between Oak Street and 5th Avenue	EB	C	0.62
		WB	C	0.70
3	**I-980** between 27th Street and 29th Street	NB	A	0.27
		SB	D	0.78
Non-Caltrans Facilities				
4	**Broadway** between 19th Street and Grand Avenue	NB	A	0.29
		SB	A	0.24
5	**Telegraph Avenue** between 20th Street and 27th Street	NB	A	0.26
		SB	B	0.37
6	**West Grand Avenue** between Telegraph Avenue and San Pablo Avenue	EB	C	0.59
		WB	B	0.37
7	**Grand Avenue** between Broadway and Harrison Street	EB	B	0.38
		WB	B	0.36
8	**Harrison Street** between 20th Street and 14th Street	NB	A	0.26
		SB	A	0.25
PM Peak Hour				
Caltrans Facilities				
1	**I-880** between Market Street to I-980	EB	B	0.40
		WB	B	0.43
2	**I-880** between Oak Street and 5th Avenue	EB	D	0.72
		WB	C	0.63
3	**I-980** between 27th Street and 29th Street	NB	C	0.60
		SB	B	0.31
Non-Caltrans Facilities				
4	**Broadway** between 19th Street and Grand Avenue	NB	B	0.49
		SB	B	0.33
5	**Telegraph Avenue** between 20th Street and 27th Street	NB	B	0.38
		SB	B	0.31
6	**West Grand Avenue** between Telegraph Avenue and San Pablo Avenue	EB	B	0.40
		WB	B	0.48
7	**Grand Avenue** between Broadway and Harrison Street	EB	B	0.42
		WB	B	0.44
8	**Harrison Street** between 20th Street and 14th Street	NB	B	0.41
		SB	A	0.16

Source: AECOM, 2009.

(1) Measure DD Implementation Project. Measure DD improvements for Lakeshore Avenue, El Embarcadero, and Lakeside Drive have recently been installed or are currently under construction. Remaining improvements as part of the Measure DD Implementation Project (Original Measure DD configuration) include the removal of the 20th Street leg of the Harrison Street/Lakeside Drive/20th Street "triangle." The former right-of-way would then be converted to open space as part of an expanded Snow Park. The intersection of Harrison Street/Lakeside Drive would be reconfigured into a "T" intersection (this would require the realignment of Lakeside Drive). The reconfiguration of the triangle would improve pedestrian access to Lake Merritt from the Downtown area by simplifying routes for pedestrians and reducing the number of crossings. In addition, Lakeside Drive has been

narrowed from the existing four lanes of traffic to two lanes from 14th Street to just beyond 17th Street, and striped with a new Class 2 bicycle facility (bicycle lane). The shoreline east of Lakeside Drive has been improved and new trails constructed, and a staircase has been built to connect Lakeside Drive to the Municipal Boathouse. Bulbouts have been constructed along Lakeside Drive at the Scottish Rite Center (midblock between 14th Street and 17th Street) and at 17th Street. The proposed Measure DD Implementation Project, Original Measure DD configuration roadway and intersection geometry changes at this location are illustrated in Figure IV.D-7.

Intersection geometry changes resulting from the implementation of Original Measure DD are described below:

- Jackson Street/Lakeside Drive. Reconfiguration of this intersection would include the removal of one through lane along Lakeside Drive in the north- and south-bound directions. The reconfigured northbound approach from Lakeside Drive would consist of one shared through-left lane. The reconfigured southbound approach from Lakeside Drive would consist of one shared through-right lane.
- Harrison Street/20th Street/Kaiser Center Access Road. Reconfiguration of this intersection would include the removal of the 20th Street leg. The reconfigured eastbound approach from Harrison Street would consist of one exclusive left-turn lane, two through lanes (to northbound Harrison Street), and one shared through-right lane.
- Harrison Street/Lakeside Drive. Lakeside Drive has been narrowed between 14th Street and 17th Street, and striped with a new Class 2 bicycle facility (bicycle lane). The reconfigured northbound approach from Lakeside Drive would consist of one exclusive left turn lane, one shared left-right turn lane, and one exclusive right turn lane. The reconfigured eastbound approach from Harrison Street would consist of two through lanes, and one shared through-right lane.

The Original Measure DD configuration has been refined and a preferred alternative configuration was developed through a collaborative consideration of design opportunities and constraints. Analysis of the Preferred Measure DD configuration is provided in the Project Traffic Impact Analysis section of this chapter. The Preferred Measure DD configuration is illustrated in Figure IV.D-15 of this report.

(2) 27th Street/Bay Place Bike Lanes. The City of Oakland is in the process of expanding its bikeway network. Bike lanes along 27th Street and Bay Place have already been approved and funded and are thus assumed under Cumulative Year 2015 and Cumulative Year 2030 scenarios. One auto travel lane in each direction would be removed along 27th Street and Bay Place to accommodate the bike lanes.

Intersection geometry changes resulting from the expansion of the bikeway network along 27th Street and Bay Place are described below:

- Broadway/27th Street. Reconfiguration of this intersection would include the removal of one through lane along 27th Street in the eastbound direction. The reconfigured eastbound approach from 27th Street would consist of one exclusive left turn lane, one through lane, and one shared through-right lane.

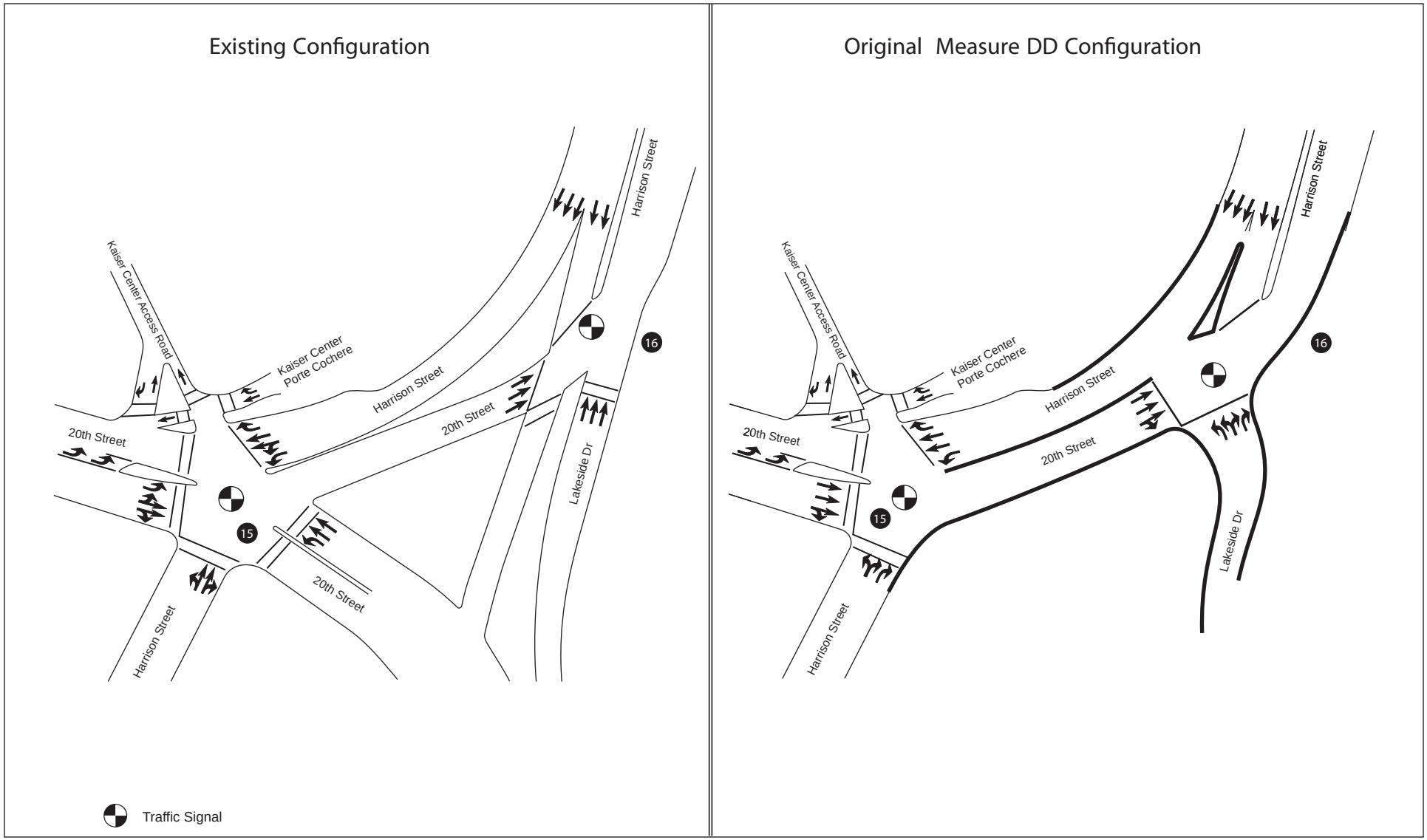

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FIGURE IV.D-7

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SOURCE: AECOM, 2011.

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Emerald Views Residential Development EIR

Measure DD Implementation Geometry Changes

- Telegraph Avenue/27th Street. Reconfiguration of this intersection would include the removal of one through lane along 27th Street in the eastbound and westbound direction. The reconfigured westbound approach from 27th Street would consist of one exclusive left turn lane, one through lane, and one exclusive right turn lane. The reconfigured eastbound approach from 27th Street would consist of one exclusive left turn lane, one through lane, and one exclusive right turn lane.
- Northgate Avenue/27th Street/I-980 Eastbound On-Ramp. Reconfiguration of this intersection would include the removal of one through lane along 27th Street in the eastbound and westbound directions. The reconfigured westbound approach from 27th Street would consist of two exclusive through lanes, and two exclusive right turn only lanes (onto the I-980 EB On-Ramp). The reconfiguration of the eastbound approach from 27th Street would consist of one exclusive left turn lane, one shared left-through lane, and one exclusive right through lane.
- Northgate Avenue/27th Street/I-980 Westbound Off-Ramp. Reconfiguration of this intersection would include the removal of one through lane along 27th Street in the eastbound and westbound directions. The reconfigured westbound approach from 27th Street would consist of one shared left-through lane, and one exclusive through lane. The reconfigured eastbound approach from 27th Street would consist of two exclusive through lanes and one exclusive right turn only lane.

c. Other Transportation Improvements. In addition to the changes to the Harrison Street/Lakeside Drive/20th Street triangle as part of the Measure DD Implementation Project and the geometry changes as part of the 27th Street/Bay Place bike lanes, additional transportation improvements have also been proposed as part of the following projects:

- AC Transit East Bay Bus Rapid Transit (BRT) Project;
- Harrison Street/Oakland Avenue Community-Based Transportation Plan (CBTP) Study for improvements to the Harrison Street/Oakland Avenue couplet between Grand Avenue and Monte Vista Avenue to improve access for all modes;
- Broadway Retail Corridor Specific Plan; and,
- I-880 Broadway/Jackson Street Interchange.

The listed projects are in various stages of planning and are neither fully funded nor approved. In several cases, such as for the Harrison Street/Oakland Avenue CBTP and Broadway Retail Corridor Specific Plan, the exact nature of planned transportation improvements has yet to be finalized.

Although only funded and approved projects are typically considered for inclusion in impact analyses, supplementary traffic analyses have been conducted as part of this EIR for the BRT project. Appendix B summarizes the results of these supplementary analyses, includes a discussion of possible transportation improvements under the other projects, and includes a comparison of the findings from this DEIR and the CBTP Study.

(1) Pedestrian and Bicycle Facility Improvements. The planned reconfiguration of the intersections of Harrison Street/20th Street and Harrison Street/Lakeside Drive (discussed under Cumulative Year 2015 (No Project) Conditions) would improve pedestrian access between Downtown and Lake Merritt, and enlarges the park adjacent to the lake, helping to create a pedestrian-friendly environment in the immediate vicinity of the project.

In addition, the City of Oakland Bicycle Master Plan (December 2007) calls for the implementation of the following bikeway network improvements:

- Class 2/3 facilities on Lakeside Drive/Harrison Street, extending south of I-880 and north of Grand Avenue;
- Class 2/3 facilities on 20th Street between Lakeside Drive and San Pablo Avenue;
- Class 2/3 facilities on Webster Street/Franklin Street between 8th Street and Broadway;
- Class 2/3 facilities on 14th Street extending east and west from Downtown Oakland;
- Class 2/3 facilities on 8th Street/9th Street between Lakeside Drive and Martin Luther King, Jr. Way; and,
- Class 2/3 facilities on 27th Street between Grand Avenue and San Pablo Avenue.

Class 2 bicycle lanes on Telegraph Avenue between Aileen Street and 20th Street are provisionally designated as part of the City of Oakland's proposed bikeway network. The provisional designation will only be lifted, and this segment automatically incorporated into the proposed bikeway network, if further environmental review is performed and appropriate CEQA findings are adopted by the City.

Additionally, the Lake Merritt Master Plan proposes the completion of a Class 1 "loop" around Lake Merritt by upgrading the existing recreational paths to accommodate bicycles. A reduction of traffic lanes is planned on Oak Street between 12th and 14th Streets.

d. Cumulative Year 2015 (No Project) Conditions Traffic Volumes. Growth factors between the ACCMA Model's base year (2005) and future year (2030) were calculated for each intersection approach, and interpolated to obtain future year (2015) growth factors. These growth factors were applied to Existing Conditions traffic volumes to derive Cumulative Year 2015 (No Project) Conditions traffic volumes. The volumes were then compared to the City of Oakland Measure DD Implementation Project Environmental Impact Report approved in April 2008 to ensure consistency. Cumulative Year 2015 (No Project) Conditions traffic volumes at the 26 study intersections are illustrated in Figures IV.D-8a and 8b.

e. Cumulative Year 2015 (No Project) Conditions Intersection Level of Service. The resulting AM and PM peak hour intersection LOS for the 26 study intersections are shown in Table IV.D-7. As shown in Table IV.D-7, the following five study intersections are expected to operate under unacceptable conditions during at least one peak hour under Cumulative Year 2015 (No Project) Conditions:

- Outside Downtown
    22. Telegraph Avenue/27th Street (PM).
- Within Downtown
    1. Oak Street/5th Street/I-880 SB On-Ramp. (AM/PM);
    12. Jackson Street/Lakeside Drive (AM/PM);
    15. Harrison Street/20th Street/Kaiser Center Access Road (PM); and,
    17. Harrison Street/Grand Avenue (PM).

Several of these intersections primarily accommodate freeway-related traffic such as Oak Street/5th Street or carry traffic from heavily-utilized streets such as Harrison Street/Lakeside Drive. The intersection of Telegraph Avenue/27th Street worsens in Cumulative 2015 (No Project) Conditions as a

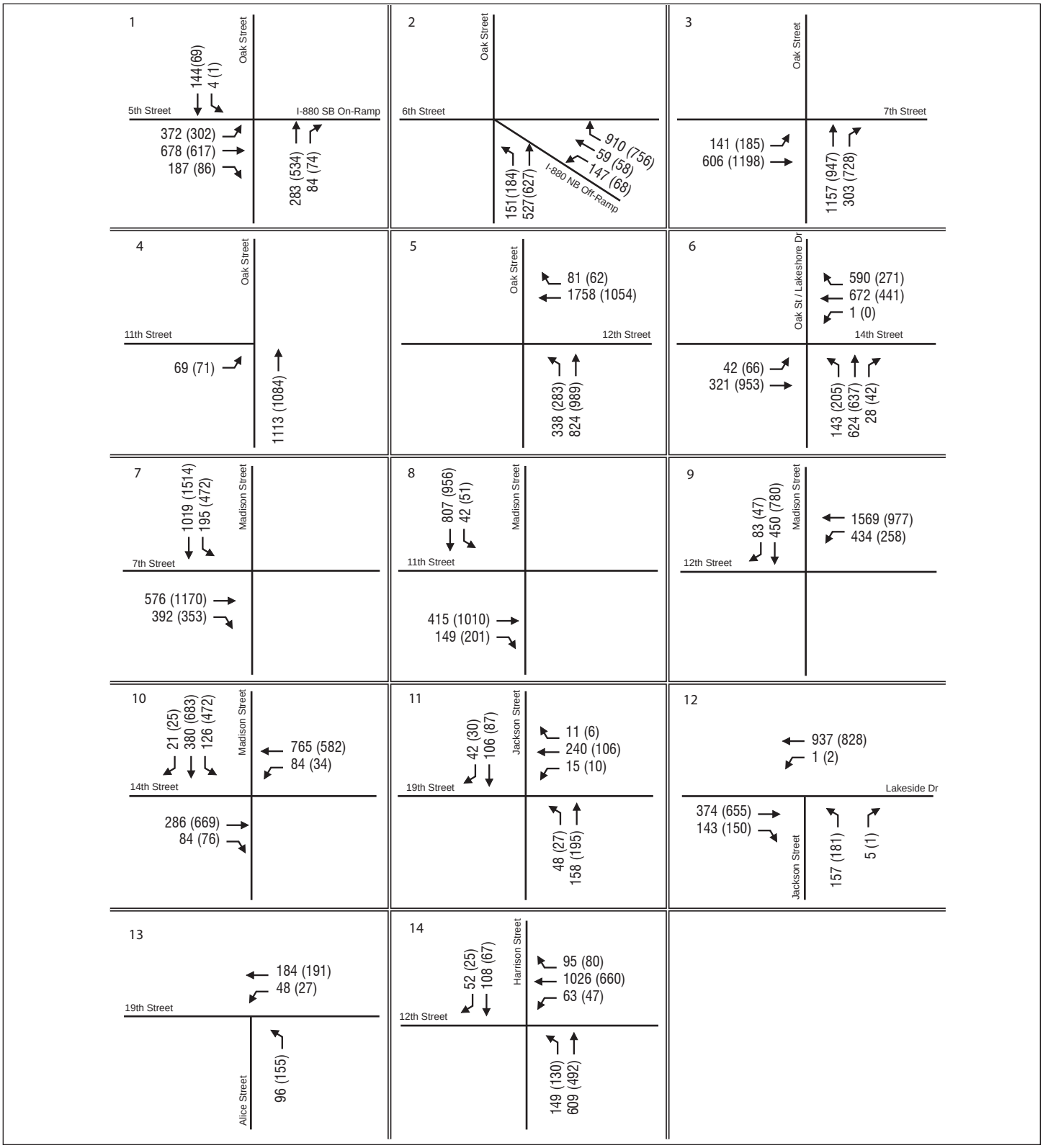

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FIGURE IV.D-8a

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Cumulative Year 2015 (No Project) Traffic Volumes
AM (PM Peak Hour)

SOURCE: DMJM HARRIS, 2009

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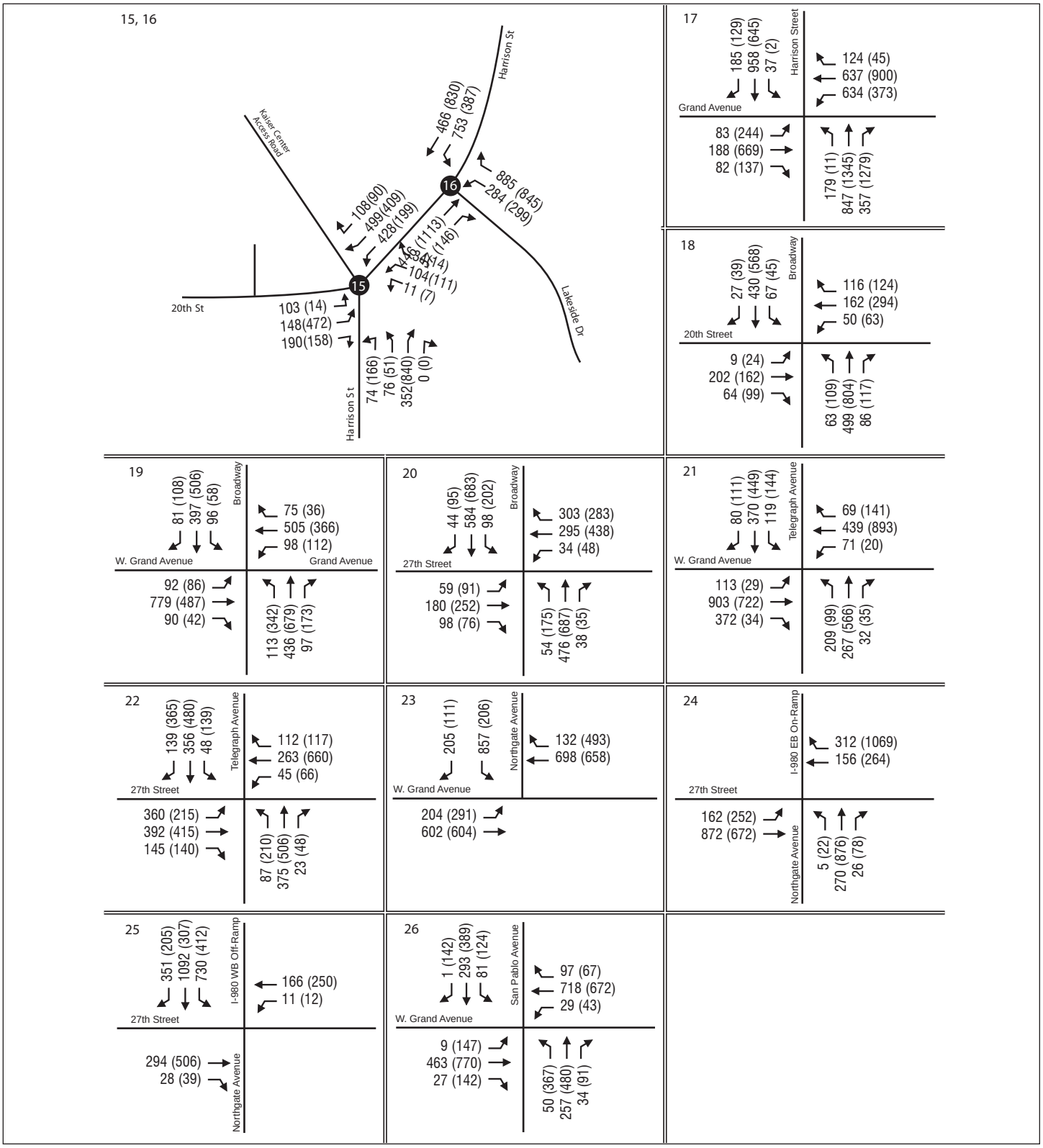

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FIGURE IV.D-8b

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Emerald Views Residential Development EIR

Cumulative Year 2015 (No Project) Traffic Volumes
AM (PM Peak Hour)

SOURCE: DMJM HARRIS, 2009

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result of the proposed and funded single-lane reduction in both east- and west-bound directions along 27th Street as part of the 27th Street/Bay Place Bike Lane improvements project. The intersection of Jackson Street/Lakeside Drive worsens in Cumulative 2015 (No Project) Conditions as a result of the proposed and funded single-lane reduction in both north- and southbound directions along Lakeside Drive as part of the Measure DD Implementation Project (Original Measure DD and Preferred Measure DD configurations).

Average delay at some intersections would decrease under Cumulative Year 2015 (No Project) Conditions due to greater growth on movements which are under capacity (non-critical movements) and underutilization of the green time allotted by the signal, thereby, resulting in a higher vehicle throughput and reduced overall intersection average delay.

f. Cumulative Year 2015 (No Project) Conditions CMP and MTS Roadway Segment Level of Service. The Cumulative Year 2015 (No Project) Conditions AM and PM peak hour roadway segment LOS for the study roadway segments is summarized in Table IV.D-8. As shown in Table IV.D-8, all study roadway segments would operate at acceptable conditions under Cumulative Year 2015 (No Project) Conditions (LOS E or better).

3. Cumulative Year 2030 (No Project) Traffic Conditions

This section evaluates traffic operations and potential impacts at the study intersections under Cumulative Year 2030 (No Project) Traffic Conditions.

a. Future Year Projections. Cumulative Year 2030 (No Project) Conditions traffic volumes were forecast using the June 2007 release of the ACCMA Model. The model was calibrated and validated to Spring 2007 travel conditions (the most up-to-date conditions possible using ABAG.

Projections 2005 land use data) within Oakland. Refinements to the volume forecasts within the City of Oakland were made to allow for more accurate representation of projected travel demand within city limits.

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 (No Project) scenario assumes no new development on the project site. More information on model assumptions surrounding land use and other developments in the project vicinity is included in a Memorandum provided in Appendix B.

b. Cumulative Year 2030 (No Project) Conditions Traffic Volumes. Growth factors between the ACCMA Model's base year (2005) and cumulative year (2030) were calculated for each intersection approach. These growth factors were applied to Existing Conditions traffic volumes to derive Cumulative Year 2030 Conditions traffic volumes. The volumes were then compared to the City of Oakland Measure DD Implementation Project Environmental Impact Report approved in April 2008 to ensure consistency. Cumulative Year 2030 (No Project) Conditions traffic volumes at the 26 study intersections are illustrated in Figures IV.D-9a and 9b.

Table IV.D-7: Cumulative Year 2015 (No Project) Conditions Intersection Levels of Service

No.	Intersection	Traffic Control	Peak Hour	Existing Conditions		Cumulative 2015 Conditions	
				LOS	Delay	LOS	Delay
Outside Downtown							
20	Broadway/ 27th Street[b]	Signalized	AM	B	14.8	B	16.7
			PM	B	18.0	C	24.1
22	Telegraph Avenue/ 27th Street[b]	Signalized	AM	B	18.8	B	19.7
			PM	C	29.0	**E**	**64.5**
24	Northgate Avenue/27th Street/I-980 EB On-Ramp[b]	Signalized	AM	A	8.9	B	11.3
			PM	B	10.9	B	16.6
25	Northgate Avenue/27th Street/I-980 WB Off-Ramp[b]	Signalized	AM	B	12.0	B	14.6
			PM	B	11.0	B	11.8
26	San Pablo Avenue/ West Grand Avenue	Signalized	AM	B	13.0	B	12.3
			PM	C	21.5	D	36.9
Within Downtown							
1	Oak Street/ 5th Street/I-880 SB On-Ramp	Signalized	AM	E	65.3	**F**	**>120.0**
			PM	**F**	**>120.0**	**F**	**>120.0**
2	Oak Street/ 6th Street/I-880 SB On-Ramp	Signalized	AM	B	14.9	C	20.0
			PM	B	11.2	B	13.6
3	Oak Street/ 7th Street	Signalized	AM	A	9.4	B	10.0
			PM	B	14.2	B	19.5
4	Oak Street/ 11th Street[a]	OWSC	AM	B	10.5	B	11.1
			PM	B	10.7	B	11.1
5	Oak Street/ 12th Street	Signalized	AM	B	12.8	B	13.9
			PM	B	12.8	B	14.0
6	Oak Street/ 14th Street	Signalized	AM	B	17.4	C	29.6
			PM	C	34.6	D	53.8
7	Madison Street/ 7th Street	Signalized	AM	A	8.8	B	10.1
			PM	B	11.8	B	17.5
8	Madison Street/ 11th Street	Signalized	AM	B	12.1	B	11.8
			PM	B	10.9	B	10.4
9	Madison Street/ 12th Street	Signalized	AM	A	7.7	A	8.7
			PM	A	7.8	A	9.2
10	Madison Street/ 14th Street	Signalized	AM	A	9.6	B	11.1
			PM	B	10.1	B	11.7
11	Jackson Street/ 19th Street	AWSC	AM	A	8.6	B	10.1
			PM	A	8.3	A	9.3
12	Jackson Street/ Lakeside Drive[b]	Signalized	AM	A	8.5	**F**	**84.0**
			PM	C	24.0	**F**	**>120.0**
13	Alice Street/ 19th Street	AWSC	AM	A	7.6	A	8.5
			PM	A	8.1	A	9.0
14	Harrison Street/ 12th Street	Signalized	AM	B	16.3	B	18.3
			PM	B	13.1	B	15.7
15	Harrison Street/20th Street/ Kaiser Center Access Road[b]	Signalized	AM	C	25.8	D	46.8
			PM	C	25.9	**F**	**115.2**
16	Harrison Street/ Lakeside Drive[b]	Signalized	AM	A	6.3	B	18.4
			PM	A	9.4	C	29.0
17	Harrison Street/ Grand Avenue	Signalized	AM	C	27.8	D	53.5
			PM	D	39.0	**F**	**>120.0**
18	Broadway/ 20th Street	Signalized	AM	B	14.2	B	13.9
			PM	B	19.1	C	20.2
19	Broadway/ Grand Avenue	Signalized	AM	B	19.3	C	22.3
			PM	B	16.2	C	21.2
21	Telegraph Avenue/ West Grand Avenue	Signalized	AM	C	24.9	C	30.0
			PM	C	26.3	D	52.2
23	Northgate Avenue/ West Grand Avenue	Signalized	AM	C	21.3	C	25.0
			PM	B	17.7	B	18.5

Table notes on next page.

Bold indicates intersections operating at LOS E (outside downtown) or LOS F (outside and within downtown).
AWSC = All-Way Stop-Controlled
OWSC = One-Way Stop-Controlled
[a] Analyzed for worst-approach.
[b] Cumulative 2015 Conditions assumes implementation of planned and funded intersection geometry changes.
Source: AECOM, 2009.

Table IV.D-8: Cumulative Year 2015 (No Project) Conditions CMP and MTS Roadway Segment Levels of Service

No.	Segment	Direction	Existing Conditions		Cumulative 2015 Conditions	
			LOS	v/c	LOS	v/c
AM Peak Hour						
Caltrans Facilities						
1	**I-880** between Market Street to I-980	EB	B	0.38	B	0.41
		WB	B	0.47	B	0.49
2	**I-880** between Oak Street and 5th Avenue	EB	C	0.62	D	0.71
		WB	C	0.70	D	0.79
3	**I-980** between 27th Street and 29th Street	NB	A	0.27	B	0.30
		SB	D	0.78	D	0.88
Non-Caltrans Facilities						
4	**Broadway** between 19th Street and Grand Avenue	NB	A	0.29	B	0.36
		SB	A	0.24	B	0.33
5	**Telegraph Avenue** between 20th Street and 27th Street	NB	A	0.26	B	0.32
		SB	B	0.37	B	0.45
6	**West Grand Avenue** between Telegraph Avenue and San Pablo Avenue	EB	C	0.59	D	0.77
		WB	B	0.37	B	0.46
7	**Grand Avenue** between Broadway and Harrison Street	EB	B	0.38	C	0.54
		WB	B	0.36	C	0.56
8	**Harrison Street** between 20th Street and 14th Street	NB	A	0.26	B	0.32
		SB	A	0.25	B	0.34
PM Peak Hour						
Caltrans Facilities						
1	**I-880** between Market Street to I-980	EB	B	0.40	B	0.40
		WB	B	0.43	B	0.45
2	**I-880** between Oak Street and 5th Avenue	EB	D	0.72	D	0.80
		WB	C	0.63	D	0.72
3	**I-980** between 27th Street and 29th Street	NB	C	0.60	C	0.66
		SB	B	0.31	B	0.37
Non-Caltrans Facilities						
4	**Broadway** between 19th Street and Grand Avenue	NB	B	0.49	C	0.66
		SB	B	0.33	B	0.41
5	**Telegraph Avenue** between 20th Street and 27th Street	NB	B	0.38	B	0.51
		SB	B	0.31	B	0.39
6	**West Grand Avenue** between Telegraph Avenue and San Pablo Avenue	EB	B	0.40	B	0.50
		WB	B	0.48	C	0.61
7	**Grand Avenue** between Broadway and Harrison Street	EB	B	0.42	C	0.58
		WB	B	0.44	C	0.58
8	**Harrison Street** between 20th Street and 14th Street	NB	B	0.41	C	0.59
		SB	A	0.16	A	0.20

Source: AECOM, 2009.

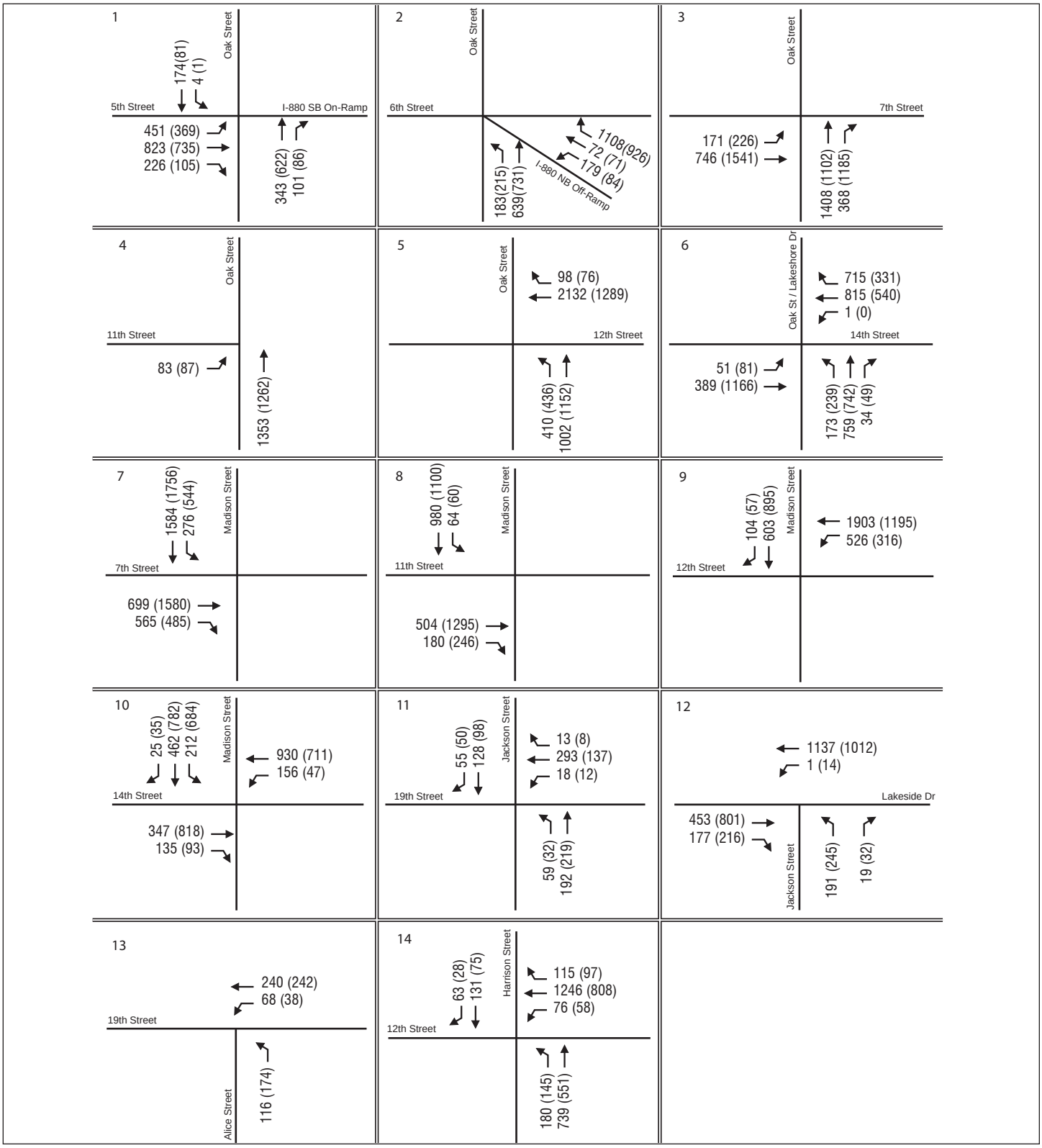

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FIGURE IV.D-9a

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Emerald Views Residential Development EIR

Cumulative Year 2030 (No Project) Traffic Volumes
AM (PM Peak Hour)

SOURCE: DMJM HARRIS, 2009

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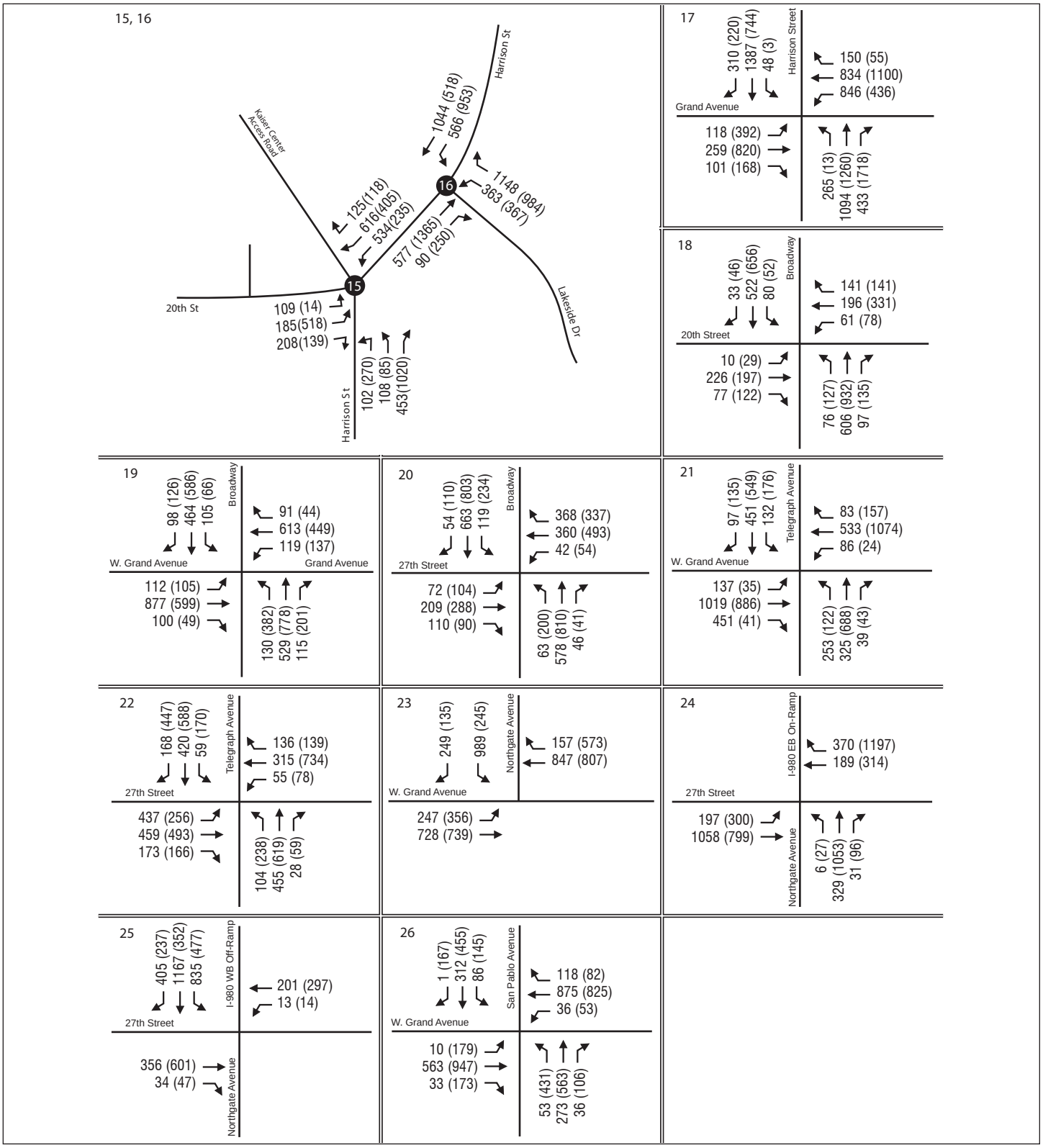

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FIGURE IV.D-9b

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Emerald Views Residential Development EIR

Cumulative Year 2030 (No Project) Traffic Volumes

AM (PM Peak Hour)

SOURCE: DMJM HARRIS, 2009

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c. Cumulative Year 2030 (No Project) Conditions Intersection Level of Service. The resulting AM and PM peak hour intersection LOS for the 26 study intersections are shown in Table IV.D-9. As shown in Table IV.D-9, the following nine study intersections are expected to operate under unacceptable conditions during at least one peak hour under Cumulative Year 2030 (No Project) Conditions:

- Outside Downtown
    22. Telegraph Avenue/27th Street (PM); and,
    26. San Pablo Avenue/West Grand Avenue (PM).
- Within Downtown
    1. Oak Street/5th Street/I-880 SB On-Ramp (AM/PM);
    3. Oak Street/7th Street (PM);
    6. Oak Street/14th Street (PM);
    12. Jackson Street/Lakeside Drive (AM/PM);
    15. Harrison Street/20th Street/Kaiser Center Access Road (AM/PM);
    16. Harrison Street/Lakeside Drive (PM); and,
    17. Harrison Street/Grand Avenue (AM/PM).

These intersections primarily accommodate freeway-related traffic such as Oak Street/5th Street or carry traffic from heavily-utilized streets such as Harrison Street/Lakeside Drive. The intersection of Jackson Street/Lakeside Drive worsens in Cumulative 2030 (No Project) Conditions as a result of the proposed and funded single-lane reduction in both north- and southbound directions along Lakeside Drive as part of Original Measure DD.

While the number of vehicles would increase in the Cumulative Year 2015 (No Project) Conditions due to background growth, these vehicles would make use of under capacity (non-critical movements) approaches and underutilization of the green time allotted by the signal capacity.This would result in a higher vehicle throughput and reduced overall intersection average delay.

d. Cumulative Year 2030 (No Project) Conditions CMP and MTS Roadway Segment Level of Service. The Cumulative Year 2030 (No Project) Conditions AM and PM peak hour roadway segment LOS for the study roadway segments is summarized in Table IV.D-10. As shown in Table IV.D-10, one study roadway segment, I-980, between 27th Street and 29th Street (SB AM), is expected to operate under unacceptable conditions during at least one peak hour under Cumulative Year 2030 (No Project) Conditions.

Table IV.D-9: Cumulative Year 2030 (No Project) Conditions Intersection Levels of Service

No.	Intersection	Traffic Control	Peak Hour	Existing Conditions		Cumulative 2015 Conditions		Cumulative 2030 Conditions	
				LOS	Delay	LOS	Delay	LOS	Delay
Outside Downtown									
20	Broadway/ 27th Street[b]	Signalized	AM	B	14.8	B	16.7	B	18.9
			PM	B	18.0	C	24.1	D	47.1
22	Telegraph Avenue/ 27th Street[b]	Signalized	AM	B	18.8	B	19.7	C	21.8
			PM	C	29.0	E	64.5	**F**	**112.2**
24	Northgate Avenue/ 27th Street/ I-980 EB On-Ramp[b]	Signalized	AM	A	8.9	B	11.3	B	15.5
			PM	B	10.9	B	16.6	C	29.0
25	Northgate Avenue/ 27th Street/ I-980 WB Off-Ramp[b]	Signalized	AM	B	12.0	B	14.6	B	16.4
			PM	B	11.0	B	11.8	B	12.3
26	San Pablo Avenue/ West Grand Avenue	Signalized	AM	B	13.0	B	12.3	B	11.6
			PM	C	21.5	D	36.9	**F**	**89.2**
Within Downtown									
1	Oak Street/5th Street/ I-880 SB On-Ramp	Signalized	AM	E	65.3	**F**	**>120.0**	**F**	**>120.0**
			PM	**F**	>120.0	**F**	**>120.0**	**F**	**>120.0**
2	Oak Street/6th Street/ I-880 SB On-Ramp	Signalized	AM	B	14.9	C	20.0	D	37.8
			PM	B	11.2	B	13.6	B	18.9
3	Oak Street/ 7th Street	Signalized	AM	A	9.4	B	10.0	B	15.2
			PM	B	14.2	B	19.5	**F**	92.4
4	Oak Street/ 11th Street[a]	OWSC	AM	B	10.5	B	11.1	B	11.9
			PM	B	10.7	B	11.1	B	11.9
5	Oak Street/ 12th Street	Signalized	AM	B	12.8	B	13.9	B	15.8
			PM	B	12.8	B	14.0	B	16.0
6	Oak Street/ 14th Street	Signalized	AM	B	17.4	C	29.6	E	66.5
			PM	C	34.6	D	53.8	**F**	>120.0
7	Madison Street/ 7th Street	Signalized	AM	A	8.8	B	10.1	B	13.5
			PM	B	11.8	B	17.5	D	41.1
8	Madison Street/ 11th Street	Signalized	AM	B	12.1	B	11.8	B	11.7
			PM	B	10.9	B	10.4	B	11.4
9	Madison Street/ 12th Street	Signalized	AM	A	7.7	A	8.7	B	11.0
			PM	A	7.8	A	9.2	B	10.2
10	Madison Street/ 14th Street	Signalized	AM	A	9.6	B	11.1	C	21.0
			PM	B	10.1	B	11.7	B	14.5
11	Jackson Street/ 19th Street[a]	AWSC	AM	A	8.6	B	10.1	B	11.5
			PM	A	8.3	A	9.3	B	10.1
12	Jackson Street/ Lakeside Drive[b]	Signalized	AM	A	8.5	**F**	**84.0**	**F**	**>120.0**
			PM	C	24.0	**F**	**>120.0**	**F**	**>120.0**
13	Alice Street/ 19th Street[a]	AWSC	AM	A	7.6	A	8.5	A	8.9
			PM	A	8.1	A	9.0	A	9.5

Table IV.D-9 *Continued*

No.	Intersection	Traffic Control	Peak Hour	Existing Conditions		Cumulative 2015 Conditions		Cumulative 2030 Conditions	
				LOS	Delay	LOS	Delay	LOS	Delay
14	Harrison Street/ 12th Street	Signalized	AM	B	16.3	B	18.3	B	19.8
			PM	B	13.1	B	15.7	B	17.6
15	Harrison Street/ 20th Street/Kaiser Center Access Road[b]	Signalized	AM	C	25.8	D	46.8	E	77.1
			PM	C	25.9	**F**	**115.2**	**F**	**>120.0**
16	Harrison Street/ Lakeside Drive[b]	Signalized	AM	A	6.3	B	18.4	C	24.4
			PM	A	9.4	C	29.0	**F**	113.4
17	Harrison Street/ Grand Avenue	Signalized	AM	C	27.8	D	53.5	**F**	>120.0
			PM	D	39.0	**F**	**>120.0**	**F**	**>120.0**
18	Broadway/ 20th Street	Signalized	AM	B	14.2	B	13.9	B	15.4
			PM	B	19.1	C	20.2	C	35.4
19	Broadway/ Grand Avenue	Signalized	AM	B	19.3	C	22.3	C	28.1
			PM	B	16.2	C	21.2	D	45.1
21	Telegraph Avenue/ West Grand Avenue	Signalized	AM	C	24.9	C	30.0	D	44.2
			PM	C	26.3	D	52.2	E	75.3
23	Northgate Avenue/ West Grand Avenue	Signalized	AM	C	21.3	C	25.0	C	33.3
			PM	B	17.7	B	18.5	D	47.8

Bold indicates intersections operating at LOS E (outside downtown) or LOS F (outside and within downtown).
AWSC = All-Way Stop-Controlled
OWSC = One-Way Stop-Controlled
[a] Analyzed for worst-approach.
[b] Cumulative Year 2015 Conditions and Cumulative Year 2030 Conditions assume implementation of planned and funded intersection geometry changes.
Source: AECOM, 2009.

Table IV.D-10: Cumulative Conditions CMP and MTS Roadway Segment Levels of Service

No.	Roadway Segment	Direction	Existing Conditions		Cumulative 2015 Conditions		Cumulative 2030 Conditions	
			LOS	v/c	LOS	v/c	LOS	v/c
AM Peak Hour								
Caltrans Facilities								
1	**I-880** between Market Street to I-980	EB	B	0.38	B	0.41	B	0.48
		WB	B	0.47	B	0.49	C	0.56
2	**I-880** between Oak Street and 5th Avenue	EB	C	0.62	D	0.71	E	0.92
		WB	C	0.70	D	0.79	E	0.99
3	**I-980** between 27th Street and 29th Street	NB	A	0.27	B	0.30	B	0.38
		SB	D	0.78	D	0.88	**F**	**1.11**
Non-Caltrans Facilities								
4	**Broadway** between 19th Street and Grand Avenue	NB	A	0.29	B	0.36	B	0.43
		SB	A	0.24	B	0.33	B	0.38

Table IV.D-10 *Continued*

No.	Roadway Segment	Direction	Existing Conditions		Cumulative 2015 Conditions		Cumulative 2030 Conditions	
			LOS	v/c	LOS	v/c	LOS	v/c
5	**Telegraph Avenue** between 20th Street and 27th Street	NB	A	0.26	B	0.32	B	0.38
		SB	B	0.37	B	0.45	C	0.55
6	**West Grand Avenue** between Telegraph Avenue and San Pablo Avenue	EB	C	0.59	D	0.77	E	0.89
		WB	B	0.37	B	0.46	C	0.56
7	**Grand Avenue** between Broadway and Harrison Street	EB	B	0.38	C	0.54	C	0.61
		WB	B	0.36	C	0.56	D	0.78
8	**Harrison Street** between 20th Street and 14th Street	NB	A	0.26	B	0.32	B	0.36
		SB	A	0.25	B	0.34	B	0.41
PM Peak Hour								
Caltrans Facilities								
1	**I-880** between Market Street to I-980	EB	B	0.40	B	0.40	B	0.42
		WB	B	0.43	B	0.45	C	0.50
2	**I-880** between Oak Street and 5th Avenue	EB	D	0.72	D	0.80	E	0.99
		WB	C	0.63	D	0.72	E	0.90
3	**I-980** between 27th Street and 29th Street	NB	C	0.60	C	0.66	D	0.80
		SB	B	0.31	B	0.37	C	0.50
Non-Caltrans Facilities								
4	**Broadway** between 19th Street and Grand Avenue	NB	B	0.49	C	0.66	D	0.76
		SB	B	0.33	B	0.41	B	0.48
5	**Telegraph Avenue** between 20th Street and 27th Street	NB	B	0.38	B	0.51	C	0.60
		SB	B	0.31	B	0.39	B	0.48
6	**West Grand Avenue** between Telegraph Avenue and San Pablo Avenue	EB	B	0.40	B	0.50	C	0.61
		WB	B	0.48	C	0.61	D	0.74
7	**Grand Avenue** between Broadway and Harrison Street	EB	B	0.42	C	0.58	D	0.77
		WB	B	0.44	C	0.58	D	0.74
8	**Harrison Street** between 20th Street and 14th Street	NB	B	0.41	C	0.59	D	0.77
		SB	A	0.16	A	0.20	A	0.22

Bold indicates segments operating at LOS F.
Source: AECOM, 2009.

4. Regulatory Framework

Applicable plans, policies and regulations that pertain to the Emerald Views Residential Development Project Transportation and Circulation Element are presented below.

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. This Project is reviewed for compliance with the following local plans and policies:

- General Plan LUTE
- City of Oakland Pedestrian Master Plan
- City of Oakland Bicycle Master Plan
- City of Oakland Bicycle Parking Ordinance
- AC Transit Short-Range Transit Plan
- BART Strategic Plan

a. City of Oakland General Plan. The City of Oakland General Plan (General Plan) is a comprehensive plan for the growth and development of the City. The General Plan includes policies related to: land use and circulation; housing; recreation; conservation and open space; noise; environmental hazards; and historic resources. These topics are addressed within individual elements of the General Plan: Land Use and Transportation; Pedestrian Master Plan; Bicycle Master Plan; Housing; Historic Preservation; Open Space; Conservation; Recreation; Noise; and Safety. Each is addressed separately below.

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)

(1) Land Use and Transportation Element. The following policies are included in the LUTE:

> *LUTE Policy Framework, Encouraging Alternative Means of Transportation:* "A key challenge for Oakland is to encourage commuters to carpool or use alternative modes of transportation, including bicycling or walking. The Policy Framework proposes that congestion be lessened by promoting alternative means of transportation, such as transit, biking, and walking, providing facilities that support alternative modes, and implementing street improvements. The City will continue to work closely with local and regional transit providers to increase accessibility to transit and improve intermodal transportation connections and facilities. Additionally, policies support the introduction of light rail and trolley buses along appropriate arterials in heavily traveled corridors, and expanded use of ferries in the bay and estuary."
>
> *Policy T3.5, Including Bikeways and Pedestrian Walks*: The City should include bikeways and pedestrian walks in the planning of new, reconstructed, or realized streets, wherever possible.
>
> *Policy T3.6, Encouraging Transit*: The City should encourage and promote use of public transit in Oakland by expediting the movement of and access to transit vehicles on designated "transit streets" as

shown on the Transportation Plan. (Policies T3.6 and T3.7 are based on the City Council's passage of "Transit First" policy in October 1996.)

Policy T3.7, Resolving Transportation Conflicts: The City, in constructing and maintaining its transportation infrastructure, should resolve any conflicts between public transit and single occupant vehicles in favor of the transportation mode that has the potential to provide the greatest mobility and access for people, rather than vehicles, giving due consideration to the environmental, public safety, economic development, health and social equity impacts.

Policy T4.1, Incorporating Design Features for Alternative Travel: The City will require new development, rebuilding, or retrofit to incorporate design features in their projects that encourage use of alternative modes of transportation such as transit, bicycling, and walking.

(2) 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. In the study area, the PMP designates a Pedestrian Route Network throughout Oakland and identifies a "City Route" on Broadway, Lakeside Drive – Harrison Street, and Grand Avenue, and a "Neighborhood Route" on Webster Street, and 20th and 17th Streets.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(3) Bicycle Master Plan. The Oakland City Council adopted the Oakland Bicycle Master Plan Update in December 2007. The adopted plan includes the following policy-supporting actions that are applicable to the Proposed Project:

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

Action 1A.1, Bicycle Lanes (Class 2): Install bicycle lanes where feasible as the preferred bikeway type for all streets on the proposed bikeway network (except for the bicycle boulevards proposed for local streets with low traffic volumes and speeds).

Action 1A.3, Bicycle Boulevards (Class 3B): Enhance bicycle routes on local streets by developing bicycle boulevards with signage, striping, and intersection modifications to prioritize bicycle travel.

Action 1A.6, Dedicated Right Turn Lanes and "Slip Turns": Where feasible, avoid the use of dedicated right turn lanes on streets included in the bikeway network. Where infeasible, consider a bicycle through lane to the left of the turn lane or a combined bicycle lane/right turn lane.

Policy 1B, Routine Accommodation: Address bicycle safety and access in the design and maintenance of all streets.

Action 1B.2, Traffic Signals: Include bicycle-sensitive detectors, bicycle detector pavement markings, and adequate yellow time for cyclists with all new traffic signals and in the modernization of all existing signals.

Policy 1C, Safe Routes to Transit: Improve bicycle access to transit, bicycle parking at transit facilities, and bicycle access on transit vehicles.

Action 1C.1, Bikeways to Transit Stations: Prioritize bicycle access to major transit facilities from four directions, integrating bicycle access into the station design and connecting the station to the surrounding neighborhoods.

Policy 1D, Parking and Support Facilities: Promote secure and conveniently located bicycle parking at destinations throughout Oakland.

Action 1D.6, Bicycle Parking Ordinance: Adopt an ordinance as part of the City's Planning Code that would require new development to include short and long-term bicycle parking.

Action 1D.7, Development Incentives: Consider reduced automobile parking requirements in exchange for bicycle facilities as part of transportation demand management strategies in new development.

(4) City of Oakland Bicycle Parking Ordinance. The Oakland City Council adopted a Bicycle Parking Ordinance in 2008. The ordinance is contained in Municipal Code Chapter 17.117, and requires new development to provide both short-term (i.e., bicycle racks) and long-term bicycle parking (i.e., lockers or indoor storage) for bicycles.

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

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

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

5. City of Oakland Conditions of Approval

The City's Standard Conditions of Approval (SCA) relevant to reducing traffic and circulation impacts due to the proposed project 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 less than significant impacts from traffic. The Conditions of Approval are incorporated and required as part of the project, so they are not listed as mitigation measures. Conditions of Approval applicable to potential transportation, circulation and parking impacts due to the Project include:

COA TRANS-1: Parking and Transportation Demand Management. *Prior to issuance of a final inspection of the building permit.*

A qualified traffic consultant with Transportation Demand Management (TDM) experience shall be retained by the project applicant to develop a TDM plan containing strategies to reduce on-site parking demand and single occupancy vehicle travel and submit such to the City Planning and Zoning Division and the Transportation Services Department for review and final approval. The applicant shall implement the approved TDM plan. The TDM shall include strategies to increase bicycle, pedestrian, transit, and carpools/vanpool use. All four modes of travel shall be considered. Strategies to consider include the following:

a) Inclusion of additional bicycle parking, shower, and locker facilities that exceed the requirement
b) Construction of bike lanes per the Bicycle Master Plan; Priority Bikeway Projects
c) Signage and striping onsite to encourage bike safety
d) Installation of safety elements per the Pedestrian Master Plan (such as cross walk striping, curb ramps, count down signals, bulb outs, etc.) to encourage convenient crossing at arterials
e) Installation of amenities such as lighting, street trees, trash receptacles per the Pedestrian Master Plan and any applicable streetscape plan.
f) Direct transit sales or subsidized transit passes
g) Guaranteed ride home program
h) Pre-tax commuter benefits (checks)
i) On-site car-sharing program (such as City Car Share, Zip Car, etc.)
j) On-site carpool/vanpool/ridematching program
k) Distribution of information concerning alternative transportation options
l) Parking spaces sold/leased separately

To further implement this Standard Condition of Approval:

m) Parking management strategies; including attendant/valet parking and shared/tandem parking spaces
n) Introductory transportation information packet provided to new residents and employees
o) On-site Transportation Information Center managed by a Transportation Coordinator (such as TravelChoice in Alameda)
p) Carpool/Vanpool/Ridematching services
q) Broadway-Valdez Shuttle Service: the building owner shall work with the City of Oakland to determine the building owner's appropriate financial contribution share and/or other efforts to support the Broadway-Valdez or other shuttle service which provides service along Broadway and connects the project to upper Broadway, downtown, and Jack London Square.

COA TRANS-2: Construction Management Plan. *Prior to issuance of a demolition, grading, or building permit.*

The project applicant shall submit to the Planning and Zoning Division and the Building Services Division for review and approval a construction management plan that identifies the conditions of approval and mitigation measures related to construction impacts of the project and explains how the project applicant will comply with these construction-related conditions of approval and mitigation measures.

To further implement this Standard Condition of Approval:

The City-approved construction staging and access agreement referenced in COA TRANS-3, subsection B and C shall be incorporated into the Construction Management Plan.

COA TRANS-3: Construction Traffic and Parking. *Prior to issuance of a demolition, grading, or building permit.*

A. The project applicant and construction contractor shall meet with appropriate City of Oakland agencies to determine traffic management strategies to reduce, to the maximum extent feasible, traffic congestion and the effects of parking demand by construction workers during construction of this project and other nearby projects that could be simultaneously under construction. The project applicant shall develop a construction management plan for review and approval by the Planning and Zoning Division, the Building Services Division, and the Transportation Services Division. The plan shall include at least the following items and requirements:

a) A set of comprehensive traffic control measures, including: scheduling of major truck trips and deliveries to avoid peak traffic hours; detour signs if required; lane closure procedures, signs, cones for drivers, bicycles and pedestrians; and designated construction access routes.
b) Notification procedures for adjacent property owners and public safety personnel regarding when major deliveries, detours, and lane closures will occur.
c) Location of construction staging areas for materials, equipment, and vehicles at an approved location.
d) A process for responding to, and tracking, complaints pertaining to construction activity, including identification of an onsite complaint manager. The manager shall determine the cause of the complaints and shall take prompt action to correct the problem. Planning and Zoning shall be informed who the Manager is prior to the issuance of the first permit issued by Building Services.
e) Provision for accommodation of pedestrian and bicycle flow.
f) Provision of parking management and spaces for all construction workers to ensure that construction workers do not park in on street spaces.
g) Any damage to the street caused by heavy equipment, or as a result of this construction, shall be repaired, at the applicant's expense, within one week of the occurrence of the damage (or excessive wear), unless further damage/excessive wear may continue; in such case, repair shall occur prior to issuance of a final inspection of the building permit. All damage that is a threat to public health or safety shall be repaired immediately. The street shall be restored to its condition prior to the new construction as established by the City Building Inspector and/or photo documentation, at the applicant's expense, before the issuance of a Certificate of Occupancy.
h) Any heavy equipment brought to the construction site shall be transported by truck, where feasible.
i) No materials or equipment shall be stored on the traveled roadway at any time.
j) Prior to construction, a portable toilet facility and a debris box shall be installed on the site, and properly maintained through project completion.
k) All equipment shall be equipped with mufflers.
l) Prior to the end of each work day during construction, the contractor or contractors shall pick up and properly dispose of all litter resulting from or related to the project, whether located on the property, within the public rights of way, or properties of adjacent or nearby neighbors.

To further implement this Standard Condition of Approval:

B. If the project applicant uses Lakeside Drive for construction staging and access to the proposed parcel, the owner or owners of 222 19th Street and 244 Lakeside shall submit for review and approval by the City attorney an agreement guaranteeing that such access will be maintained and reserved for use during the duration of demolition, grading, and construction activity. The agreement shall be recorded with the Alameda County Recorder and submitted to and approved by the Planning and Zoning Division, Building Services Division, and the Engineering Division.

C. If the applicant decides to use Lakeside Drive for construction staging and access at a later date, but prior to that phase of construction, after approval of the construction and traffic management plan, the applicant shall submit a revised construction management plan and submit the access agreement per Section B of this Condition.

6. Impacts and Mitigation Measures

This section discusses potential impacts to transportation and circulation that could result from the implementation of the proposed project. The section begins with the significance criteria, which establish the thresholds used to determine whether an impact is significant.[3] The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as appropriate. With respect to transportation and circulation, the project would have a significant impact on the environment if it meets or exceeds the City of Oakland interim revised CEQA transportation thresholds of significance (June 30, 2010) detailed below

a. Project Impacts. The project would have a significant impact on the environment if it would conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass

[3] Oakland, City of, 2010. Interim Revised CEQA Transportation Thresholds of Significance, June 30.

transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit, specifically:

Traffic Load and Capacity Thresholds

- at a study, signalized intersection which is located **outside the Downtown**[4] area, the project would cause the level of service (LOS) to degrade to worse than LOS D (i.e., E);
- at a study, signalized intersection which is located **within the Downtown** area, the project would cause the LOS to degrade to worse than LOS E (i.e., F);
- at a study, signalized intersection **outside the Downtown** area where the level of service is LOS E, the project would cause the total intersection average vehicle delay to increase by four (4) or more seconds, 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 E, the project would cause an increase in the average delay for any of the critical movements of six (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 two (2) or more seconds, or (b) an increase in average delay for any of the critical movements of four (4) seconds or more; or (c) the volume-to-capacity ("v/c") ratio exceeds three (3) percent (but only if the delay values cannot be measured accurately)[5];
- 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; and
- for a Congestion Management Program (CMP) required analysis, (i.e., projects that generate 100 or more p.m. peak hour trips) cause a roadway segment on the Metropolitan Transportation System to operate at LOS F or increase the v/c ratio by more than three (3) percent for a roadway segment that would operate at LOS F without the project;
- Result in substantially increased travel times for AC Transit buses.

Other Thresholds. The project would also have a significant impact on the environment if it would:

- 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 unless otherwise determined by the Fire Chief, or his/her designee, in specific instances due to climatic, geographic or topographic conditions; or,

[4] 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.

[5] Delay values over 120.0 seconds tend to increase exponentially and are thus generally considered unreliable.

- Fundamentally conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

b. Cumulative Impacts

- A project's contribution to cumulative impacts is considered "considerable" (i.e., significant) when the project exceeds at least one of the thresholds listed above under a future year scenario.

c. Project Traffic Impact Analysis. This section evaluates traffic operations at the 26 study intersections in the vicinity of the project site under Existing plus Project Conditions, Cumulative Year 2015 plus Project Conditions, and Cumulative Year 2030 plus Project Conditions. Mitigation measures to improve the operation of study intersections are provided where project impacts are identified that would result in unacceptable LOS in accordance with City of Oakland policies.

(1) Project Land Use. The project site is located on the north side of 19th Street between Jackson Street and Alice Street in Oakland and is a mixed-use building located in an R-90 (Downtown Apartment) zoning district. The proposed project site plan is illustrated in Figure III-2 in Chapter III, Project Description. The proposed 19th Street Condominium project would include 216 1-bedroom units, 154 2-bedroom units, and 1,000 square feet of commercial retail/café space. The proposed land use program is summarized in Table IV.D-11.

Table IV.D-11: Project Land Use Summary

Land Use	Unit	Amount
Condominiums	DU	370
1-bedroom	*DU*	*216*
2-bedroom	*DU*	*154*
Commercial Retail	SF	1,000

Source: ib+a architecture, 2007.
DU = Dwelling Unit
SF = Square Feet

(2) Project Trip Generation. Trip generation estimates are based on rates from the Institute of Transportation Engineers' (ITE) *Trip Generation, 7th Edition*, the industry standard for land-use based trip generation. The rates presented are derived from a national sample of sites of similar land uses.

It should be noted that the Trip Generation Manual typically provides both a weighted average rate and a regression equation "fitted curve" with which to calculate the trips generated by each land use. Generally, in cases where the sample size for a particular land use is 20 or greater and where the coefficient of determination is greater than or equal to 0.75, the regression equation is used to determine that land use's trip generation[6]. In cases where the sample size is less than 20 sites and where the coefficient of determination is less than 0.75, the weighted average is used to determine the trip generation.

The City of Oakland CEDA TSD has specific mode splits deemed appropriate for projects in Downtown Oakland and account for the extensive transit facilities available in the Downtown area. TSD requires an eighty-three (83) percent automobile and seventeen (17) percent transit mode split, used in conjunction with the ITE trip generation rates, which is typical for Downtown projects. For the purposes of achieving a more conservative analysis, a 100 percent automobile split was assumed for all traffic (intersection and roadway) analysis. Transit loading impacts resulting from project-generated trips were analyzed separately assuming a seventeen (17) percent transit mode split. The

[6] The coefficient of determination (R^2) is an estimate of the accuracy of the fit of the regression equation.

results of this analysis can be found in the Planning-Related Non-CEQA Considerations discussion of this section.

Trip generation rates and equations used for the analysis of the proposed project are presented in Table IV.D-12. The project vehicle trip generation is presented in Table IV.D-13.

As shown by Table IV.D-13, the proposed project is expected to generate approximately 159 vehicle trips during the AM peak hour and 187 trips during the PM peak hour. It should be noted that as the project generates more than 100 trips in both the AM and PM peak hours, a CMA analysis is required.

Table IV.D-12: Trip Generation Rates and Equations

Land Use (ITE Code)	Size	Unit	AM Peak Hour	PM Peak Hour
Condominiums (230)	370	DU	Ln(T) = 0.80 Ln(X) + 0.26	Ln(T) = 0.82 Ln(X) + 0.32
Café (932)	1.00	KSF	T = 11.52(Y)	T = 10.92(Y)

X = Dwelling Unit
Y = Per Square Foot of floor area
Source: ITE, 2003.

Table IV.D-13: Project Vehicle Trip Generation

Land Use (ITE Code)	Size	Unit	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Condominiums (230)	370	DU	25	122	147	118	58	176
Cafe (932)	1.00	KSF	6	7	12	6	4	11
Total			**31**	**129**	**159**	**124**	**62**	**187**

Source: AECOM, 2009.

(3) Project Trip Distribution and Assignment. The project's trip distribution pattern was developed using information from the ACCMA Model. The project trip distribution pattern is illustrated in Figure IV.D-10 and summarized below:

- Regional Trips
  - Twenty-one (21) percent to/from I-880 South;
  - Seven (7) percent to/from I-880 North;
  - Fifteen (15) percent to/from I-580 West;
  - Nine (9) percent to/from I-980 North; and,
  - Seven (7) percent to/from I-980 South.
  - Seventeen (17) percent to/from West Grand Avenue (west of project site);
  - Ten (10) percent to/from Grand Avenue (east of project site);
  - Three (3) percent to/from Piedmont Avenue (north of project site); and
  - Two (2) percent to/from Broadway (north of project site).
- Internal Trips
  - Five (5) percent within Downtown Oakland (south of project site);
  - Two (2) percent to/from Telegraph Avenue (north of project site);

- Two (2) percent to/from 23rd Street (west of project site); and
- One (1) percent to/from Montecito Avenue (north of project site).

The project-generated AM and PM peak hour turning movement volumes are shown in Figures IV.D-11a and 11b.

(4) Existing plus Project Conditions Traffic Volumes. Project-generated traffic was added to the Existing Conditions traffic volumes to derive Existing plus Project Conditions traffic volumes. The resulting AM and PM peak hour turning movement volumes are shown in Figures IV.D-12a and 12b.

(5) Existing plus Project Conditions Intersection Level of Service. The resulting AM and PM peak hour intersection LOS for the 26 study intersections are shown in Table IV.D-14. As shown in Table IV.D-14, all intersections would operate at acceptable levels (LOS E or better) except the Oak Street/5th Street/I-800 SB On-Ramp (PM), which would operate at unacceptable conditions (LOS F) under Existing plus Project Conditions. However, the addition of project-generated traffic would not cause an increase in v/c ratio above the three (3) percent threshold and, as such, implementation of the proposed project would not result in a significant impact at this intersection.

(6) Existing plus Project Conditions CMP and MTS Roadway Segment Level of Service. The Existing plus Project Conditions AM and PM peak hour roadway segment LOS for the study roadway segments are summarized in Table IV.D-15. As shown in Table IV.D-15, the addition of project traffic increases the v/c ratio for some study roadway segments. However, all segments are expected to operate under acceptable conditions (LOS E or better) under Existing plus Project Conditions.

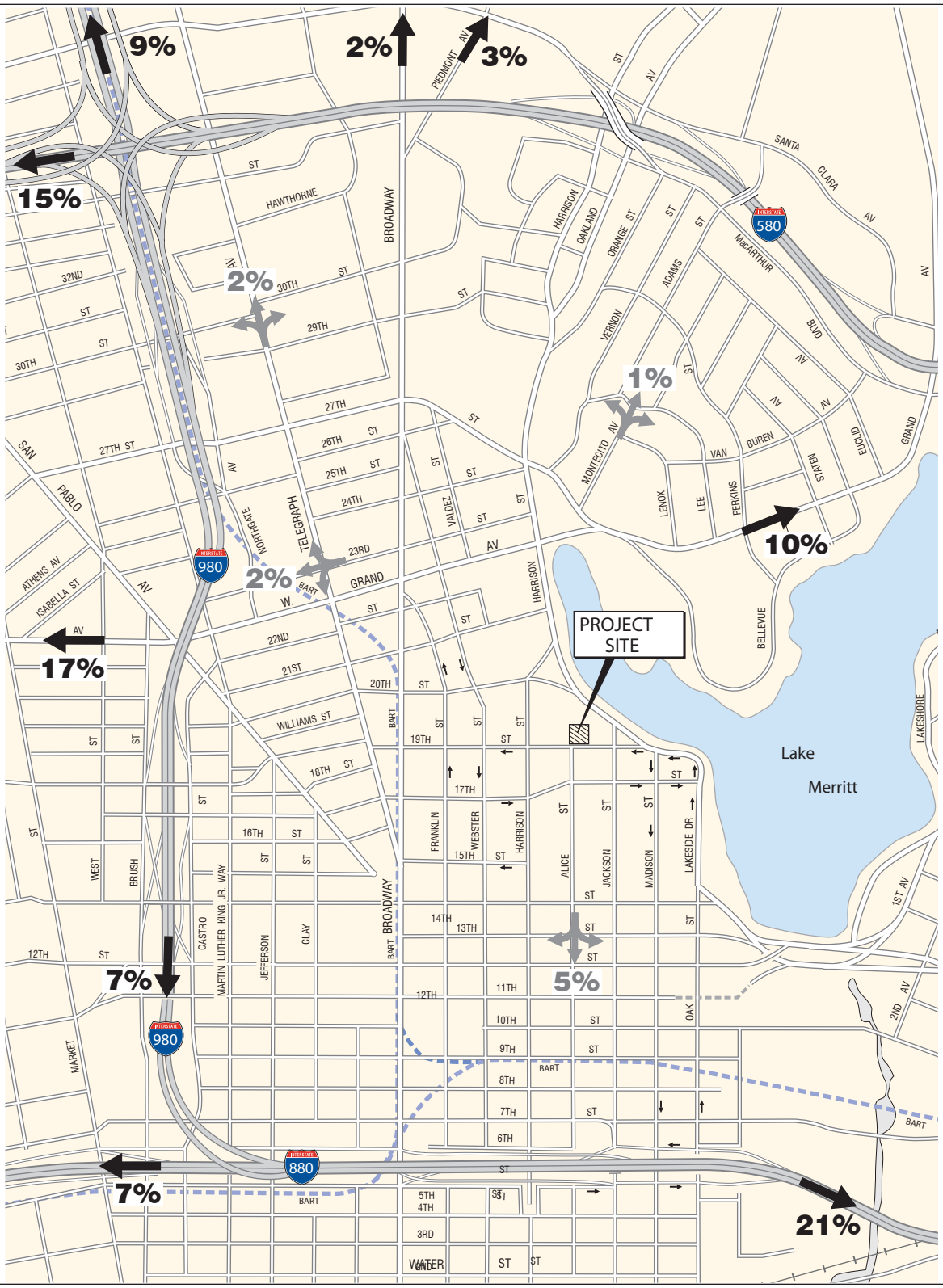

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FIGURE IV.D-10

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REGIONAL TRIPS

INTERNAL TRIPS

Emerald Views Residential Development EIR

Project Trip Distribution

SOURCE: DMJM HARRIS, 2009

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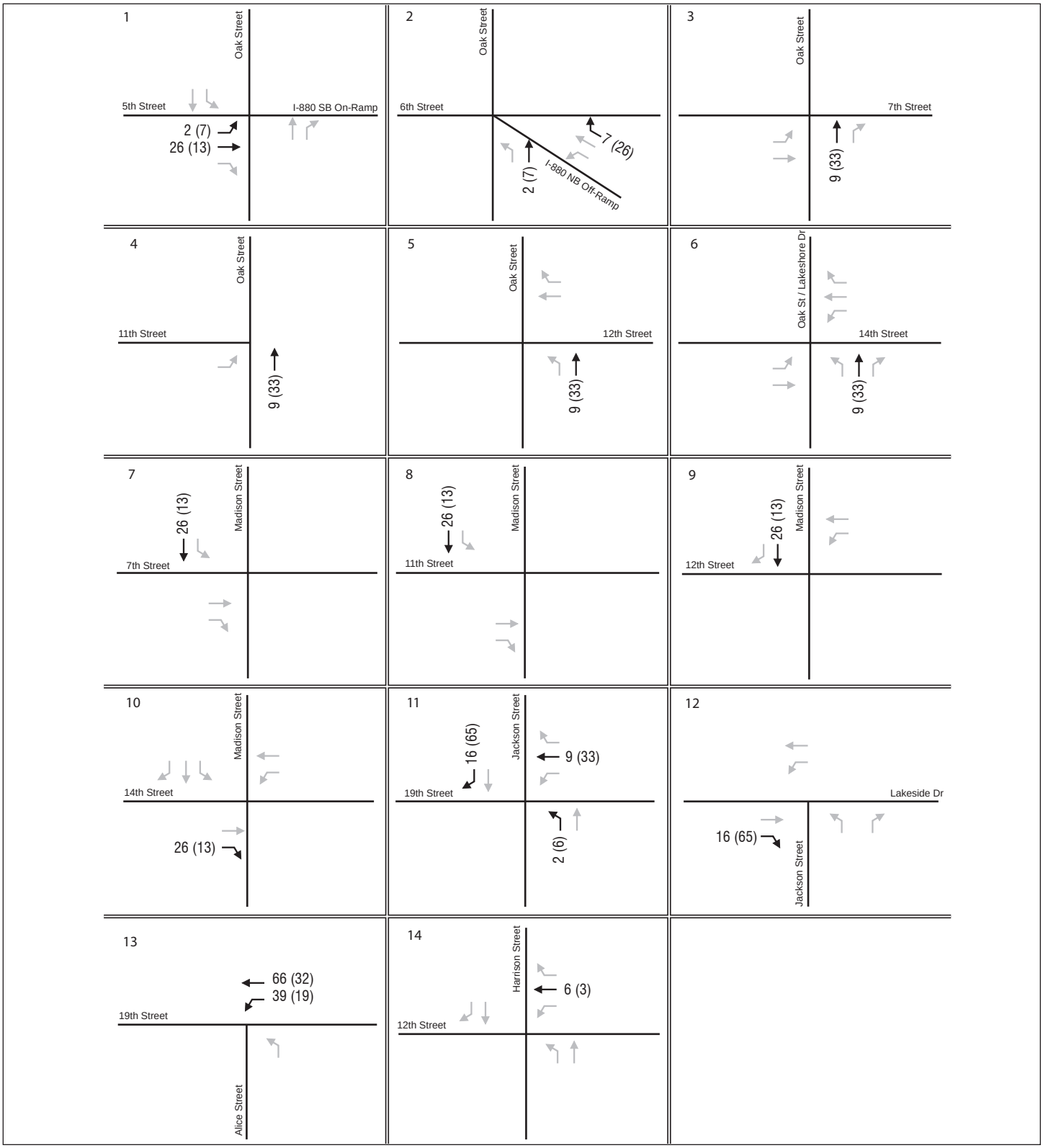

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FIGURE IV.D-11a

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Emerald Views Residential Development EIR

Project Traffic Volumes

AM (PM Peak Hour)

SOURCE: DMJM HARRIS, 2009

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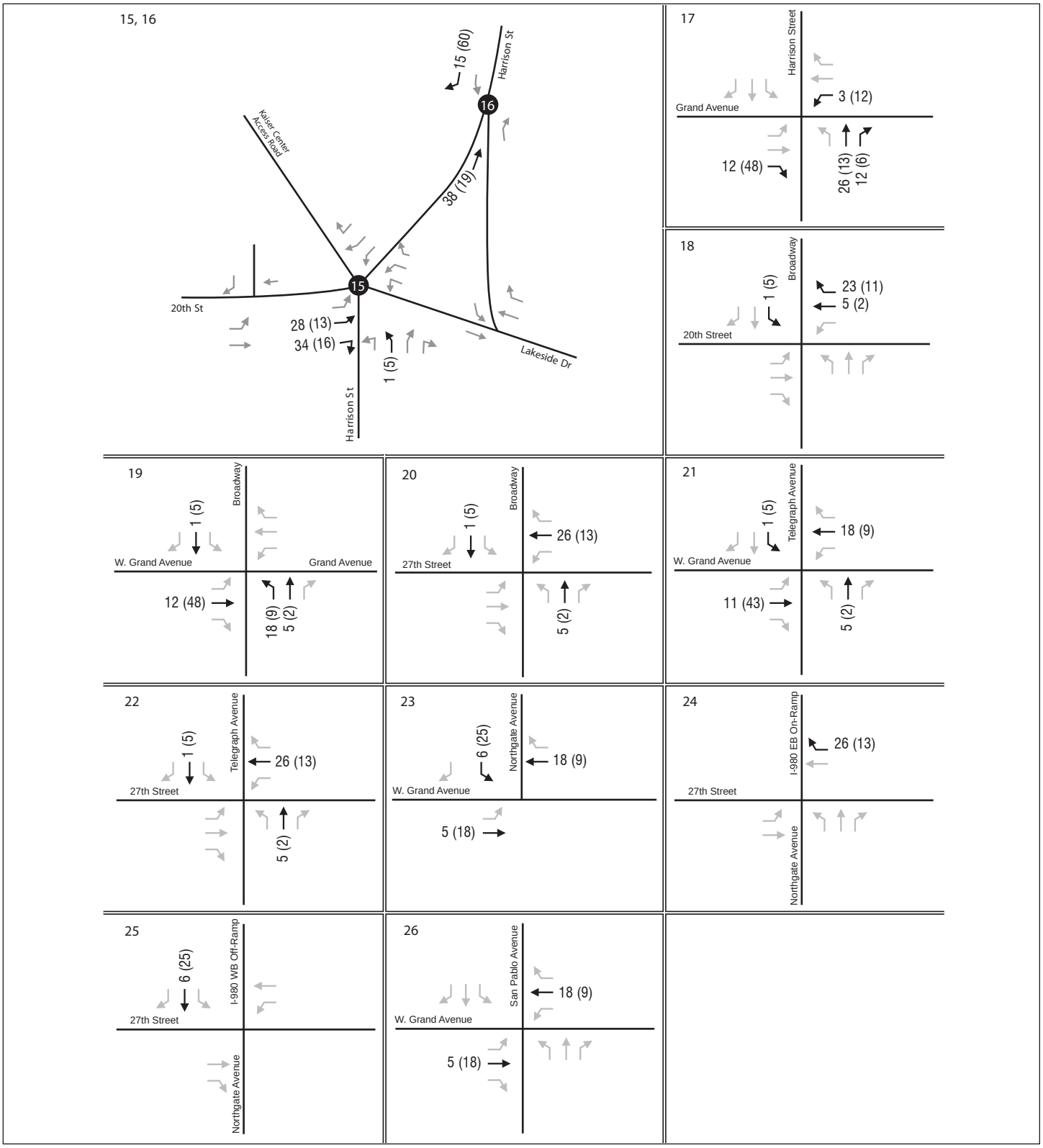

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FIGURE IV.D-11b

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Emerald Views Residential Development EIR

Project Traffic Volumes

AM (PM Peak Hour)

SOURCE: DMJM HARRIS, 2009

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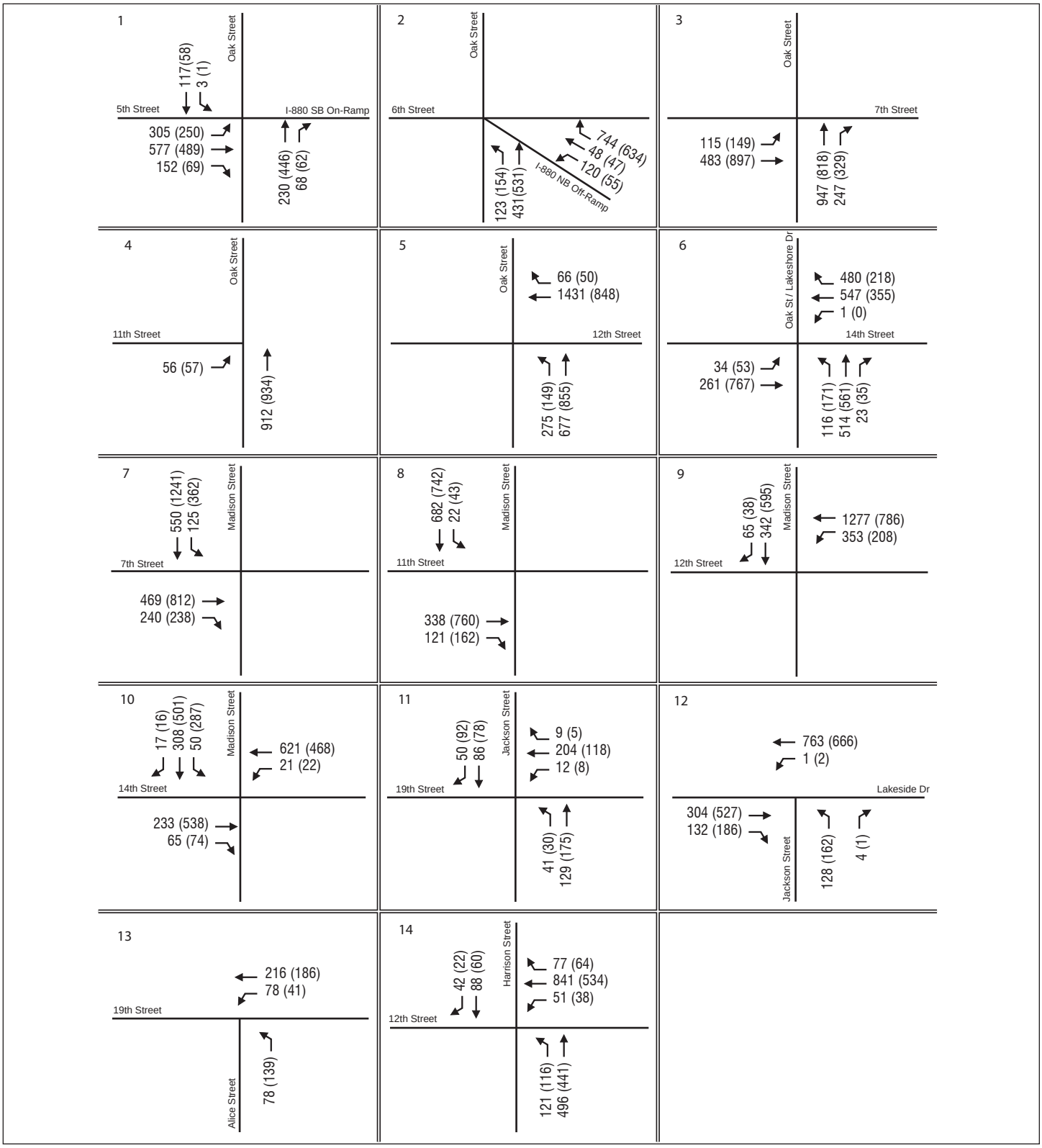

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FIGURE IV.D-12a

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Emerald Views Residential Development EIR
Existing Plus Project Traffic Volumes
AM (PM) Peak Hour

SOURCE: DMJM HARRIS, 2009

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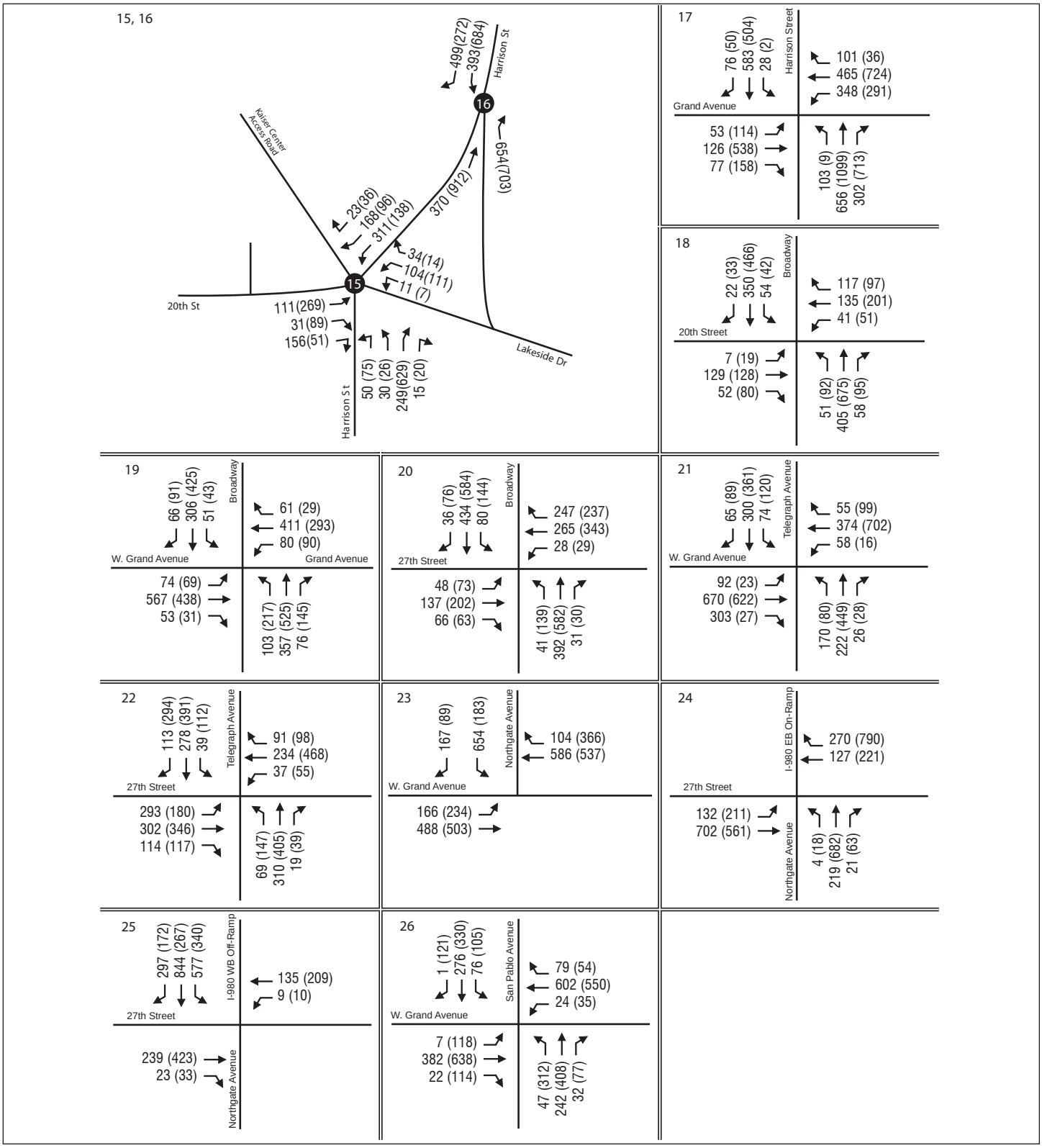

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FIGURE IV.D-12b

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Emerald Views Residential Development EIR

Existing Plus Project Traffic Volumes

AM (PM) Peak Hour

SOURCE: DMJM HARRIS, 2009

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Table IV.D-14: Existing plus Project Conditions Levels of Service

No.	Intersection	Traffic Control	Peak Hour	Existing Conditions		Existing plus Project Conditions	
				LOS	Delay	LOS	Delay
Outside Downtown							
20	Broadway/ 27th Street	Signalized	AM	B	14.8	B	15.3
			PM	B	18.0	B	18.0
22	Telegraph Ave/ 27th Street	Signalized	AM	B	18.8	B	18.8
			PM	C	29.0	C	28.9
24	Northgate Avenue/27th Street/ I-980 EB On-Ramp	Signalized	AM	A	8.9	A	8.9
			PM	B	10.9	B	11.0
25	Northgate Avenue/27th Street/ I-980 WB Off-Ramp	Signalized	AM	B	12.0	B	12.0
			PM	B	11.0	B	11.0
26	San Pablo Avenue/ West Grand Avenue	Signalized	AM	B	13.0	B	12.9
			PM	C	21.5	C	21.5
Within Downtown							
1	Oak Street/ 5th Street/I-880 SB On-Ramp	Signalized	AM	E	65.3	E	76.0
			PM	**F**	**>120.0**	**F**	**> 120.0**
2	Oak Street/ 6th Street/I-880 SB On-Ramp	Signalized	AM	B	14.9	B	15.0
			PM	B	11.2	B	11.5
3	Oak Street/ 7th Street	Signalized	AM	A	9.4	A	9.4
			PM	B	14.2	B	14.4
4	Oak Street/ 11th Street[a]	OWSC	AM	B	10.5	B	10.5
			PM	B	10.7	B	10.8
5	Oak Street/ 12th Street	Signalized	AM	B	12.8	B	12.8
			PM	B	12.8	B	12.8
6	Oak Street/ 14th Street	Signalized	AM	B	17.4	B	17.5
			PM	C	34.6	C	34.3
7	Madison Street/ 7th Street	Signalized	AM	A	8.8	A	8.9
			PM	B	11.8	B	11.9
8	Madison Street/ 11th Street	Signalized	AM	B	12.1	B	12.0
			PM	B	10.9	B	10.9
9	Madison Street/ 12th Street	Signalized	AM	A	7.7	A	7.7
			PM	A	7.8	A	7.9
10	Madison Street/ 14th Street	Signalized	AM	A	9.6	A	9.6
			PM	B	10.1	B	10.2

Table IV.D-14 *Continued*

No.	Intersection	Traffic Control	Peak Hour	Existing Conditions		Existing plus Project Conditions	
				LOS	Delay	LOS	Delay
11	Jackson Street/ 19th Street[a]	AWSC	AM	A	8.6	A	8.7
			PM	A	8.3	A	8.5
12	Jackson Street/ Lakeside Drive	Signalized	AM	A	8.5	A	8.5
			PM	C	24.0	C	26.1
13	Alice Street/ 19th Street[a]	AWSC	AM	A	7.6	A	8.1
			PM	A	8.1	A	8.3
14	Harrison Street/ 12th Street	Signalized	AM	B	16.3	B	16.3
			PM	B	13.1	B	11.6
15	Harrison Street/20th Street/Kaiser Center Access Road	Signalized	AM	C	25.8	C	25.7
			PM	C	25.9	C	26.0
16	Harrison Street/ Lakeside Drive	Signalized	AM	A	6.3	A	7.4
			PM	A	9.4	A	9.4
17	Harrison Street/ Grand Avenue	Signalized	AM	C	27.8	C	28.0
			PM	D	39.0	D	39.7
18	Broadway/ 20th Street	Signalized	AM	B	14.2	B	14.3
			PM	B	19.1	B	19.4
19	Broadway/ Grand Avenue	Signalized	AM	B	19.3	B	19.1
			PM	B	16.2	B	16.5
21	Telegraph Ave/ West Grand Avenue	Signalized	AM	C	24.9	C	25.1
			PM	C	26.3	C	27.2
23	Northgate Avenue/ West Grand Avenue	Signalized	AM	C	21.3	C	21.4
			PM	B	17.7	B	18.2

Bold indicates intersections operating at LOS E (outside downtown) or LOS F (outside and within downtown).
AWSC = All-Way Stop-Controlled
OWSC = One-Way Stop-Controlled
[a] Analyzed for worst-approach.
Source: AECOM, 2009.

Table IV.D-15: Existing plus Project Conditions CMP and MTS Roadway Segment Levels of Service

No.	Roadway Segment	Direction	Existing Conditions		Existing plus Project Conditions	
			LOS	v/c	LOS	v/c
AM Peak Hour						
Caltrans Facilities						
1	**I-880** between Market Street and I-980	EB	B	0.38	B	0.40
		WB	B	0.47	B	0.47
2	**I-880** between Oak Street and 5th Avenue	EB	C	0.62	C	0.62
		WB	C	0.70	D	0.71
3	**I-980** between 27th Street and 29th Street	NB	A	0.27	A	0.27
		SB	D	0.78	D	0.81
Non-Caltrans Facilities						
4	**Broadway** between 19th Street and Grand Avenue	NB	A	0.29	A	0.30
		SB	A	0.24	A	0.24
5	**Telegraph Avenue** between 20th Street and 27th Street	NB	A	0.26	A	0.26
		SB	B	0.37	B	0.37
6	**West Grand Avenue** between Telegraph Avenue and San Pablo Avenue	EB	C	0.59	C	0.59
		WB	B	0.37	B	0.38
7	**Grand Avenue** between Broadway and Harrison Street	EB	B	0.38	B	0.39
		WB	B	0.36	B	0.36
8	**Harrison Street** between 20th Street and 14th Street	NB	A	0.26	A	0.26
		SB	A	0.25	A	0.27
PM Peak Hour						
Caltrans Facilities						
1	**I-880** between Market Street and I-980	EB	B	0.40	B	0.40
		WB	B	0.43	B	0.44
2	**I-880** between Oak Street and 5th Avenue	EB	D	0.72	D	0.73
		WB	C	0.63	C	0.64
3	**I-980** between 27th Street and 29th Street	NB	C	0.60	C	0.64
		SB	B	0.31	B	0.31
Non-Caltrans Facilities						
4	**Broadway** between 19th Street and Grand Avenue	NB	B	0.49	B	0.49
		SB	B	0.33	B	0.33
5	**Telegraph Avenue** between 20th Street and 27th Street	NB	B	0.38	B	0.38
		SB	B	0.31	B	0.32
6	**West Grand Avenue** between Telegraph Avenue and San Pablo Avenue	EB	B	0.40	B	0.41
		WB	B	0.48	B	0.48
7	**Grand Avenue** between Broadway and Harrison Street	EB	B	0.42	B	0.45
		WB	B	0.44	B	0.44
8	**Harrison Street** between 20th Street and 14th Street	NB	B	0.41	B	0.42
		SB	A	0.16	A	0.16

Source: AECOM, 2009.

(7) Cumulative Year 2015 plus Project Conditions Traffic Volumes. The traffic generated by the proposed project was added to the Cumulative Year 2015 (No Project) Conditions traffic volumes to derive the Cumulative Year 2015 plus Project Conditions traffic volumes. Figures IV.D-13a and 13b present Cumulative Year 2015 plus Project Conditions AM and PM peak hour turning movement volumes at the 26 study intersections.

(8) Cumulative Year 2015 Plus Project Conditions Intersection Level of Service. The resulting AM and PM peak hour intersection LOS for the 26 study intersections are shown in Table IV.D-16.

As shown in Table IV.D-16, the project is expected to slightly increase delays at several study intersections. Intersections which would already be performing unacceptably would continue to operate unacceptably with the addition of project-related traffic. The following intersections are expected to operate at unacceptable conditions under Cumulative Year 2015 plus Project Conditions:

- Outside Downtown
  22. Telegraph Avenue/27th Street (PM);
- Within Downtown
  1. Oak Street/5th Street/I-880 SB On-Ramp (AM and PM);
  12. Jackson Street/Lakeside Drive (AM and PM);
  15. Harrison Street/20th Street/Kaiser Center Access Road (PM); and,
  17. Harrison Street/Grand Avenue (PM).

While the number of vehicles would increase in the Cumulative Year 2015 (No Project) Conditions due to background growth, these vehicles would make use of under capacity (non-critical movements) approaches and underutilization of the green time allotted by the signal capacity. The result would be a higher vehicle throughput and a decrease in the average vehicle delay.

However, the proposed project would not result in a significant impact at the following intersections that were selected for study:

- Telegraph Avenue/27th Street (PM). This intersection would operate at LOS E in the PM peak hour under Cumulative Year 2015 (No Project) Conditions and Cumulative Year 2015 plus Project Conditions. The intersection would operate with a delay of 64.5 seconds under Cumulative Year 2015 (No Project) Conditions and would operate with a delay of 67.3 seconds under Cumulative Year 2015 plus Project Conditions. The intersection would operate with a critical movement delay of 29.5 seconds under Cumulative Year 2015 (No Project) Conditions and would operate with a critical movement delay of 29.5 seconds under Cumulative Year 2015 plus Project Conditions. Since the increase in average intersection delay would be less than three (3) seconds which is below the four (4) second threshold of significance for all intersections outside the downtown area, and the increase in critical movement delay would be less than one second, which is below the six (6) second threshold of significance for all areas where the level of service is LOS E, therefore, the addition of project-generated traffic would not result in a significant impact at this intersection during the PM peak hour.

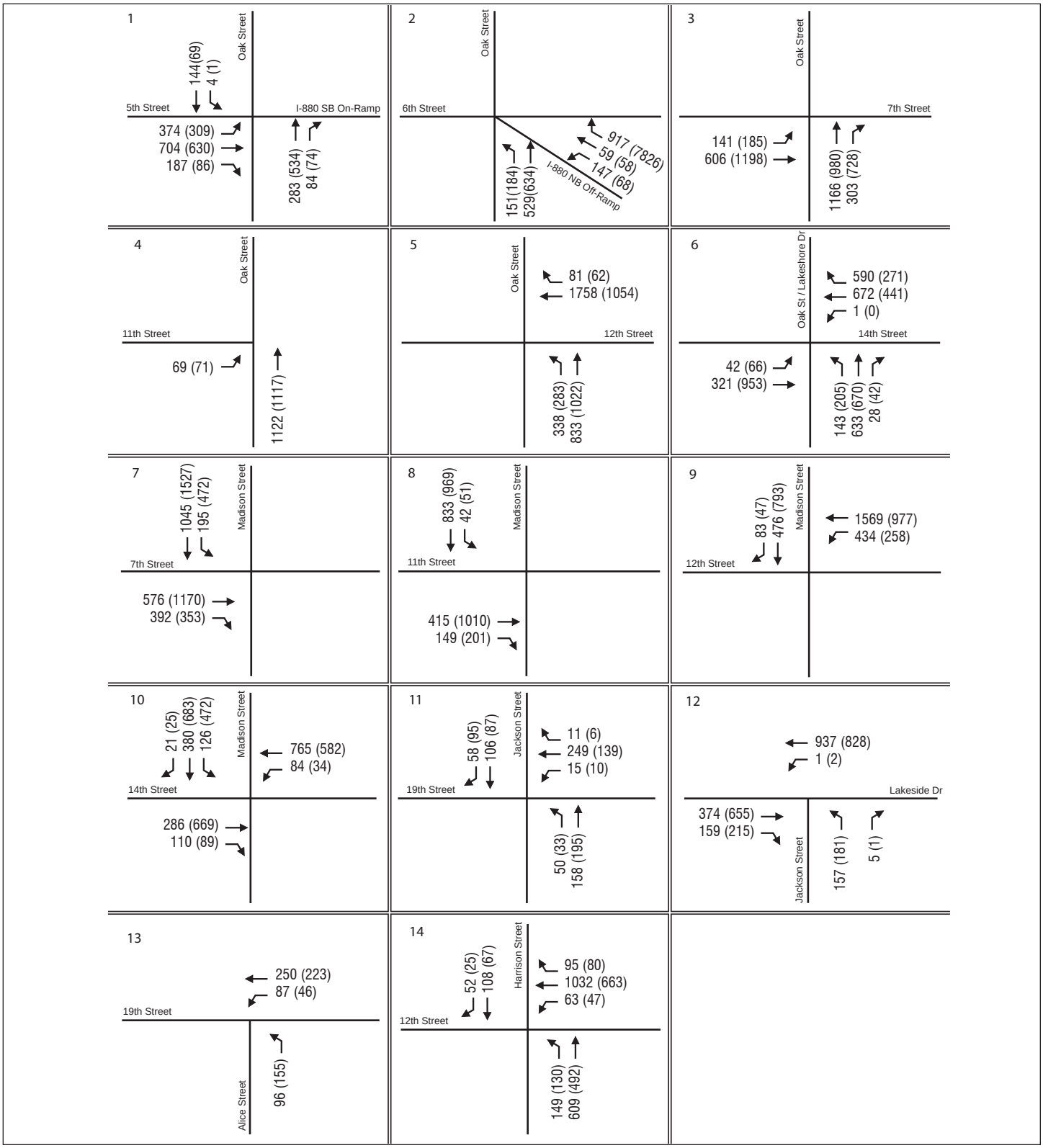

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FIGURE IV.D-13a

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Emerald Views Residential Development EIR

Cumulative Year 2015 Plus Project Traffic Volumes
AM (PM) Peak Hour

SOURCE: DMJM HARRIS, 2009

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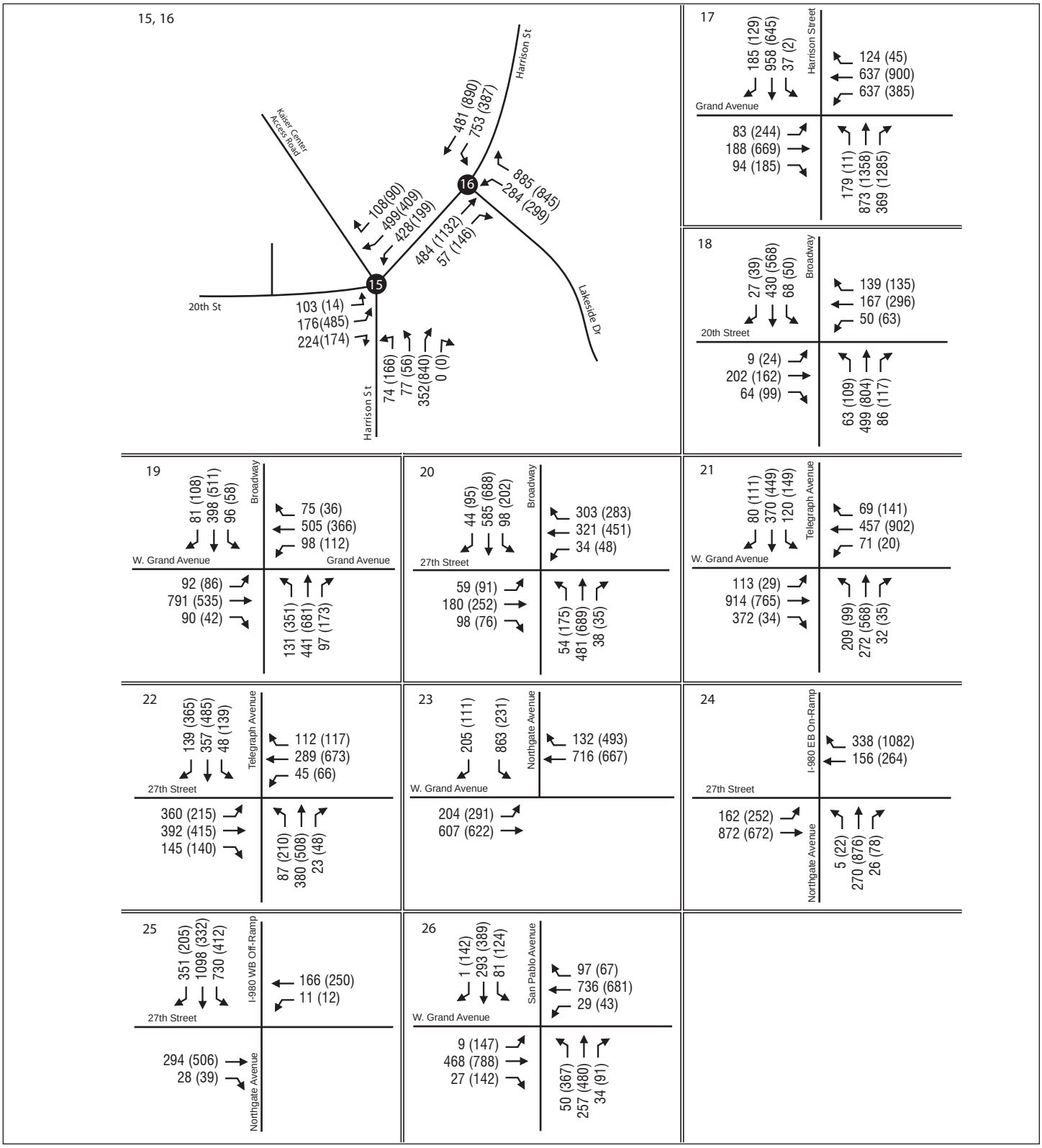

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FIGURE IV.D-13b

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Emerald Views Residential Development EIR

Cumulative Year 2015 Plus Project Traffic Volumes

AM (PM) Peak Hour

SOURCE: DMJM HARRIS, 2009

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Table IV.D-16: Cumulative Year 2015 plus Project Conditions Intersection Levels of Service

No.	Intersection	Traffic Control	Peak Hour	Cumulative 2015 Conditions		Cumulative 2015 plus Project Conditions	
				LOS	Delay	LOS	Delay
Outside Downtown							
20	Broadway/ 27th Street[b]	Signalized	AM	B	16.7	B	16.7
			PM	C	24.1	C	24.3
22	Telegraph Avenue/ 27th Street[b]	Signalized	AM	B	19.7	B	19.8
			PM	**E**	**64.5**	**E**	**67.3**
24	Northgate Avenue/27th Street/I-980 EB On-Ramp[b]	Signalized	AM	B	11.3	B	11.2
			PM	B	16.6	B	17.3
25	Northgate Avenue/27th Street/I-980 WB Off-Ramp[b]	Signalized	AM	B	14.6	B	14.7
			PM	B	11.8	B	11.8
26	San Pablo Avenue/ West Grand Avenue	Signalized	AM	B	12.3	B	12.2
			PM	D	36.9	D	37.4
Within Downtown							
1	Oak Street/5th Street/ I-880 SB On-Ramp	Signalized	AM	**F**	**>120.0**	**F**	**>120.0**
			PM	**F**	**>120.0**	**F**	**>120.0**
2	Oak Street/6th Street/ I-880 SB On-Ramp	Signalized	AM	C	20.0	C	20.5
			PM	B	13.6	B	14.1
3	Oak Street/ 7th Street	Signalized	AM	B	10.0	B	10.1
			PM	B	19.5	C	20.7
4	Oak Street/ 11th Street[a]	OWSC	AM	B	11.1	B	11.1
			PM	B	11.1	B	11.2
5	Oak Street/ 12th Street	Signalized	AM	B	13.9	B	14.0
			PM	B	14.0	B	14.1
6	Oak Street/ 14th Street	Signalized	AM	C	29.6	C	29.9
			PM	D	53.8	D	53.4
7	Madison Street/ 7th Street	Signalized	AM	B	10.1	B	10.2
			PM	B	17.5	B	17.8
8	Madison Street/ 11th Street	Signalized	AM	B	11.8	B	12.1
			PM	B	10.4	B	10.4
9	Madison Street/ 12th Street	Signalized	AM	A	8.7	A	8.9
			PM	A	9.2	A	9.2
10	Madison Street/ 14th Street	Signalized	AM	B	11.1	B	11.7
			PM	B	11.7	B	11.8
11	Jackson Street/ 19th Street[a]	AWSC	AM	B	10.1	B	10.3
			PM	A	9.3	A	9.5
12	Jackson Street/ Lakeside Drive[b]	Signalized	AM	**F**	**84.0**	**F**	**83.5**
			PM	**F**	**>120.0**	**F**	**>120.0**

Table IV.D-16 *Continued*

No.	Intersection	Traffic Control	Peak Hour	Cumulative 2015 Conditions		Cumulative 2015 plus Project Conditions	
				LOS	Delay	LOS	Delay
13	Alice Street/ 19th Street[a]	AWSC	AM	A	8.5	A	8.8
			PM	A	9.0	A	9.2
14	Harrison Street/ 12th Street	Signalized	AM	B	18.3	B	18.3
			PM	B	15.7	B	15.7
15	Harrison Street/20th Street/Kaiser Center Access Road[2)]	Signalized	AM	D	47.5	D	45.9
			PM	**F**	**115.2**	**F**	**115.9**
16	Harrison Street/ Lakeside Drive[b]	Signalized	AM	B	18.4	B	18.5
			PM	C	29.0	C	33.2
17	Harrison Street/ Grand Avenue	Signalized	AM	D	53.5	D	54.7
			PM	**F**	**>120.0**	**F**	**>120.0**
18	Broadway/ 20th Street	Signalized	AM	B	13.9	B	14.1
			PM	C	20.2	C	20.3
19	Broadway/ Grand Avenue	Signalized	AM	C	22.3	C	22.4
			PM	C	21.2	C	22.6
21	Telegraph Avenue/ West Grand Avenue	Signalized	AM	C	30.0	C	30.7
			PM	D	52.2	D	54.0
23	Northgate Avenue/ West Grand Avenue	Signalized	AM	C	25.0	C	25.2
			PM	B	18.5	B	19.0

Bold indicates intersections operating at LOS E (outside downtown) or LOS F (outside and within downtown).
AWSC = All-Way Stop-Controlled
OWSC = One-Way Stop-Controlled
[a] Analyzed for worst-approach.
[b] Cumulative Year 2015 Conditions assumes implementation of planned and funded intersection geometry changes.
Source: AECOM, 2009.

It should be noted that intersection operations analysis presented in this report includes intersection and roadway modifications associated with the 27th Street/Bay Place Bike Lanes Project and the Measure DD Implementation Project. This intersection is projected to worsen in Cumulative Year 2015 (No Project) Conditions as a result of the proposed and funded lane reduction on 27th Street as part of the 27th Street/Bay Place Bike Lanes project.[7]

- Oak Street/5th Street/I-880 SB On-Ramp (AM and PM). This intersection would operate at LOS F in the AM and PM peak hour under Cumulative Year 2015 (No Project) Conditions and Cumulative Year 2015 plus Project Conditions. Because delay values over 120.0 seconds tend to increase exponentially and are thus generally considered unreliable, the increase in v/c ratio as a result of project-generated traffic was instead evaluated. The intersection would operate with a v/c ratio of 1.06 under Cumulative Year 2015 (No Project) Conditions and would operate with a v/c ratio of

[7] Additional information about the 27th Street/Bay Place Bikeway project can be found on the Bicycle and Pedestrian page of the City of Oakland Public Works Agency Website (http://www.oaklandpw.com/Page122.aspx) or the specific project page (http://www.oaklandpw.com/AssetFactory.aspx?did=2275).

1.08 under Cumulative Year 2015 plus Project Conditions for the AM peak hour. For the PM peak hour the intersection operates with a v/c ratio of 1.67 under Cumulative Year 2015 (No Project) Conditions and would operate with a v/c ratio of 1.70 under Cumulative Year 2015 plus Project Conditions. Since the maximum increase in v/c ratio would be two (2) percent, which is below the three (3) percent threshold of significance, the addition of project-generated traffic would not result in a significant impact at this intersection.

- Jackson Street/Lakeside Drive (AM and PM). This intersection would operate at LOS F in the AM and PM peak hour under Cumulative Year 2015 (No Project) Conditions and Cumulative Year 2015 plus Project Conditions. The intersection would operate with an average delay of 84.0 seconds under Cumulative Year 2015 (No Project) Conditions and would operate with an average delay of 83.5 seconds under Cumulative Year 2015 plus Project Conditions for the AM peak hour. Average delay at this intersection would decrease under Cumulative Year 2015 (No Project) Conditions due to greater growth on movements which are under capacity (non-critical movements) and underutilization of the green time allotted by the signal, thereby, resulting in a higher vehicle throughput and reduced overall intersection average delay. The intersection would operate with a critical movement delay of 134.1 seconds under Cumulative Year 2015 (No Project) Conditions and would operate with a critical movement delay of 134.1 seconds under Cumulative Year 2015 plus Project Conditions. Since the increase in average intersection delay would be less than one second, which is below the two (2) second threshold, and the increase in critical movement delay would be less than one second, which is below the four (4) second threshold, the addition of project-generated traffic would not result in a significant impact at this intersection for the AM peak hour.

  For the PM peak hour, because delay values over 120.0 seconds tend to increase exponentially and are thus generally considered unreliable, the increase in v/c ratio as a result of Project-generated traffic was instead evaluated. The intersection operates with a v/c ratio of 0.92 under Cumulative Year 2015 (No Project) Conditions and would operate with a v/c ratio of 0.92 under Cumulative Year 2015 plus Project Conditions for the PM peak hour. Since the increase in v/c ratio would be less than one percent, which is below the three (3) percent threshold, the addition of project-generated traffic would not result in a significant impact at this intersection for the PM peak hour.

  It should be noted that this intersection is projected to worsen in Cumulative Year 2015 (No Project) Conditions as a result of the proposed and funded single-lane reduction in both north- and southbound directions along Lakeside Drive as part of Original Measure DD.

- Harrison Street/20th Street/Kaiser Center Access Road (PM). This intersection would operate at LOS F in the PM peak hour under both Cumulative Year 2015 (No Project) Conditions and Cumulative Year 2015 plus Project Conditions. The intersection would operate with an average delay of 115.2 seconds under Cumulative Year 2015 (No Project) Conditions and would operate with 115.9 seconds under Cumulative Year 2015 plus Project Conditions for the PM peak hour. The intersection would operate with a critical movement delay of 232.4 seconds (NBTL) and 29.8 seconds (SBTR) under Cumulative Year 2015 (No Project) Conditions and would operate with a critical movement delay of 232.4 seconds (NBTL) and 29.8 seconds (SBTR) under Cumulative Year 2015 plus Project Conditions. Since the increase in average intersection delay would be less than one second, which is below the two (2) second threshold, and the increase in critical movement delay would be less than one second, which is below the four (4) second threshold, the addition of project-generated traffic would not result in a significant impact at this intersection.

It should be noted that this intersection is projected to worsen in Cumulative Year 2015 (No Project) Conditions as a result of the proposed and funded intersection geometry configuration changes that are part of Original Measure DD.

- Harrison Street/Grand Avenue (PM). This intersection would operate at LOS F in the PM peak hour under Cumulative Year 2015 (No Project) Conditions and Cumulative Year 2015 plus Project Conditions. Because delay values over 120.0 seconds tend to increase exponentially and are thus generally considered unreliable, the increase in v/c ratio as a result of project-generated traffic was instead evaluated. The intersection operates with a v/c ratio of 1.36 under Cumulative Year 2015 (No Project) Conditions and would operate with a v/c ratio of 1.37 under Cumulative Year 2015 plus Project Conditions for the PM peak hour. Since the increase in v/c ratio would be less than one percent, which is below the three (3) percent threshold, the addition of project-generated traffic would not result in a significant impact at this intersection.

(9) Cumulative Year 2015 plus Project Conditions CMP and MTS Roadway Segment Level of Service. The Cumulative Year 2015 plus Project Conditions AM and PM peak hour roadway segment LOS for the study roadway segments are summarized in Table IV.D-17. As shown in Table IV.D-17, the addition of project traffic is projected to increase the v/c ratio for some study roadway segments in Cumulative Year 2015 plus Project Conditions. However, all segments are expected to operate under acceptable conditions, even with the addition of project traffic. The project is not expected to result in significant impacts to operations on these roadway segments and no mitigation measures are required.

(10) Cumulative Year 2030 plus Project Conditions Traffic Volumes. The traffic generated by the proposed project was added to the Cumulative Conditions traffic volumes to derive the Cumulative Year 2030 plus Project Conditions traffic volumes. Figures IV.D-14a and 14b present Cumulative Year 2030 plus Project Conditions AM and PM peak hour turning movement volumes at the 26 study intersections.

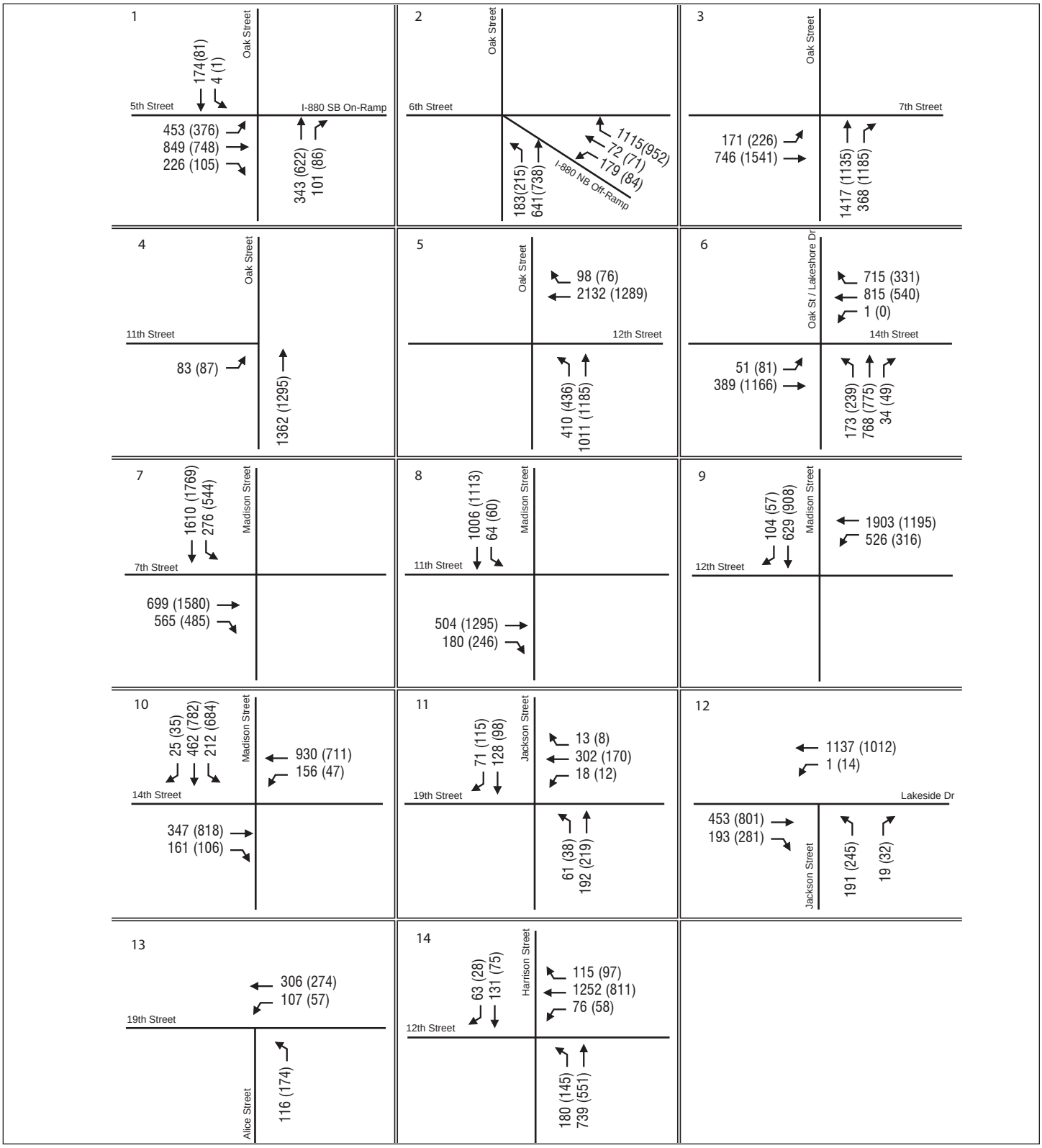
(11) Cumulative Year 2030 plus Project Conditions Intersection Level of Service. The resulting AM and PM peak hour intersection LOS for the 26 study intersections are shown in Table IV.D-18. The project is expected to slightly increase delays at most study intersections. Intersections which would already be performing poorly would continue to operate poorly with the addition of project-related traffic. The following intersections are expected to operate at unacceptable conditions under Cumulative Year 2030 plus Project Conditions:

- Outside Downtown
    22. Telegraph Ave/27th Street (PM); and,
    26. San Pablo Avenue/West Grand Avenue (PM).

Table IV.D-17: Cumulative Year 2015 Plus Project Conditions CMP and MTS Roadway Segment Levels of Service

No.	Roadway Segment	Direction	Cumulative 2015 Conditions		Cumulative 2015 Plus Project Conditions	
			LOS	v/c	LOS	v/c
AM Peak Hour						
Caltrans Facilities						
1	**I-880** between Market Street and I-980	EB	B	0.41	B	0.42
		WB	B	0.49	B	0.49
2	**I-880** between Oak Street and 5th Avenue	EB	D	0.71	D	0.72
		WB	D	0.79	D	0.80
3	**I-980** between 27th Street and 29th Street	NB	B	0.30	B	0.31
		SB	D	0.88	E	0.91
Non-Caltrans Facilities						
4	**Broadway** between 19th Street and Grand Avenue	NB	B	0.36	B	0.37
		SB	B	0.33	B	0.33
5	**Telegraph Avenue** between 20th Street and 27th Street	NB	B	0.32	B	0.32
		SB	B	0.45	B	0.45
6	**West Grand Avenue** between Telegraph Avenue and San Pablo Avenue	EB	D	0.77	D	0.78
		WB	B	0.46	B	0.47
7	**Grand Avenue** between Broadway and Harrison Street	EB	C	0.54	C	0.55
		WB	C	0.56	C	0.50
8	**Harrison Street** between 20th Street and 14th Street	NB	B	0.32	B	0.32
		SB	B	0.34	B	0.36
PM Peak Hour						
Caltrans Facilities						
1	**I-880** between Market Street and I-980	EB	B	0.40	B	0.41
		WB	B	0.45	B	0.46
2	**I-880** between Oak Street and 5th Avenue	EB	D	0.80	D	0.81
		WB	D	0.72	D	0.72
3	**I-980** between 27th Street and 29th Street	NB	C	0.66	C	0.70
		SB	B	0.37	B	0.37
Non-Caltrans Facilities						
4	**Broadway** between 19th Street and Grand Avenue	NB	C	0.66	C	0.67
		SB	B	0.41	B	0.41
5	**Telegraph Avenue** between 20th Street and 27th Street	NB	B	0.51	C	0.51
		SB	B	0.39	B	0.39
6	**West Grand Avenue** between Telegraph Avenue and San Pablo Avenue	EB	B	0.50	C	0.51
		WB	C	0.61	C	0.62
7	**Grand Avenue** between Broadway and Harrison Street	EB	C	0.58	C	0.61
		WB	C	0.58	C	0.58
8	**Harrison Street** between 20th Street and 14th Street	NB	C	0.59	C	0.59
		SB	A	0.20	A	0.20

Source: AECOM, 2009.



LSA

FIGURE IV.D-14a

N

NOT TO SCALE

Emerald Views Residential Development EIR

Cumulative Year 2030 (No Project) Plus Project Traffic Volumes
AM (PM) Peak Hour

SOURCE: DMJM HARRIS, 2009

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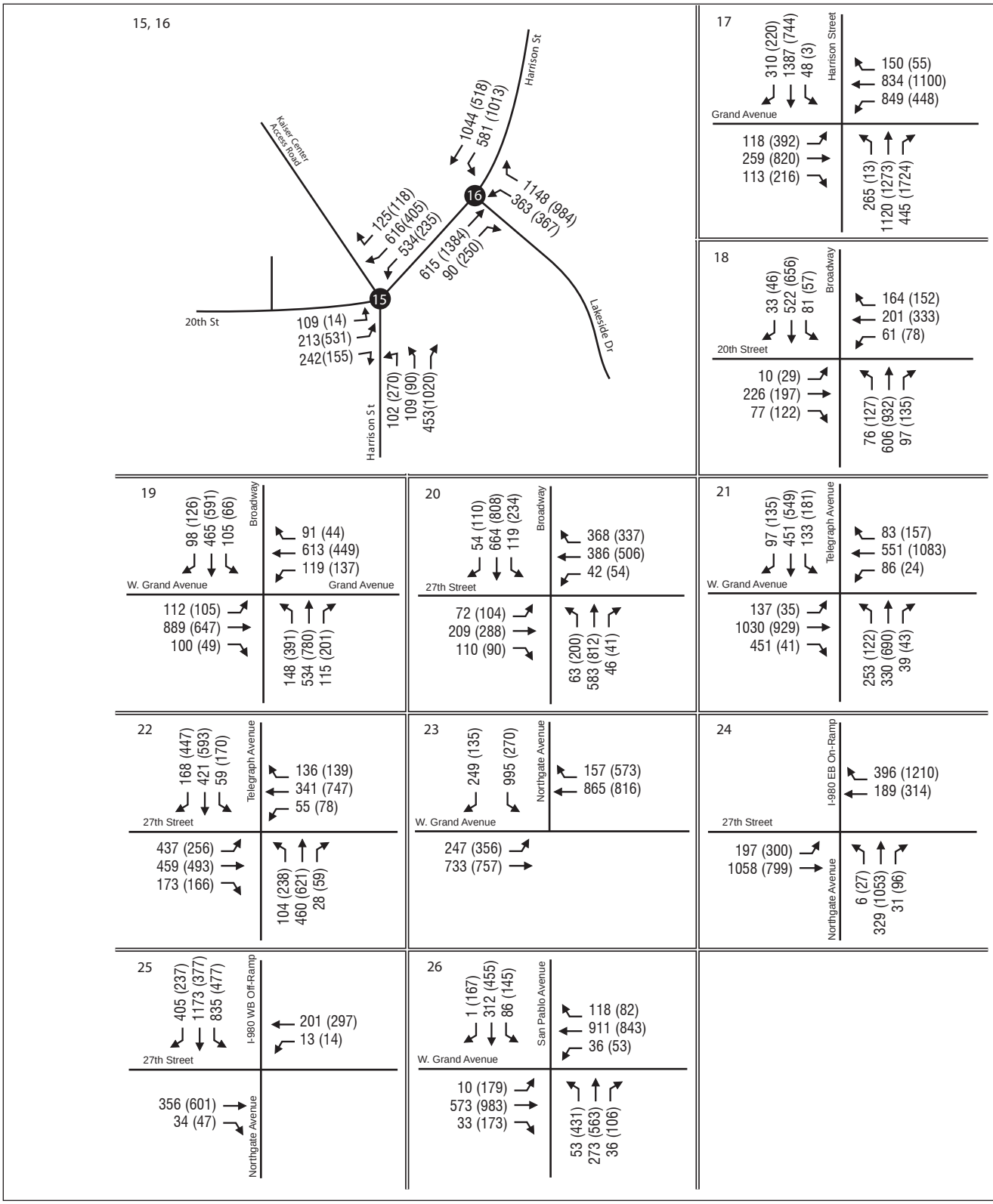

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FIGURE IV.D-14b

N

NOT TO SCALE

Emerald Views Residential Development EIR

Cumulative Year 2030 (No Project) Plus Project Traffic Volumes

AM (PM) Peak Hour

SOURCE: DMJM HARRIS, 2009

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Table IV.D-18: Cumulative Year 2030 plus Project Conditions Intersection Levels of Service

No.	Intersection	Traffic Control	Peak Hour	Cumulative 2030 Conditions		Cumulative 2030 plus Project Conditions	
				LOS	Delay	LOS	Delay
Outside Downtown							
20	Broadway/ 27th Street[b]	Signalized	AM	B	18.9	B	18.9
			PM	D	47.1	D	47.5
22	Telegraph Avenue/ 27th Street[b]	Signalized	AM	C	21.8	C	22.1
			PM	**F**	**112.2**	**F**	**112.2**
24	Northgate Avenue/27th Street/I-980 EB On-Ramp[b]	Signalized	AM	B	15.5	B	15.4
			PM	C	29.0	C	30.4
25	Northgate Avenue/27th Street/I-980 WB Off-Ramp[b]	Signalized	AM	B	16.4	B	16.9
			PM	B	12.3	B	12.3
26	San Pablo Avenue/ West Grand Avenue	Signalized	AM	B	11.6	B	11.5
			PM	**F**	**89.2**	**F**	**92.2**
Within Downtown							
1	Oak Street/5th Street/ I-880 SB On-Ramp	Signalized	AM	**F**	**>120.0**	**F**	**>120.0**
			PM	**F**	**>120.0**	**F**	**>120.0**
2	Oak Street/6th Street/ I-880 SB On-Ramp	Signalized	AM	D	37.8	D	38.7
			PM	B	18.9	B	18.9
3	Oak Street/ 7th Street	Signalized	AM	B	15.2	B	15.5
			PM	**F**	**92.4**	**F**	**97.1**
4	Oak Street/ 11th Street[a]	OWSC	AM	B	11.9	B	11.9
			PM	B	11.9	B	12.0
5	Oak Street/ 12th Street	Signalized	AM	B	15.8	B	15.8
			PM	B	16.0	B	16.3
6	Oak Street/ 14th Street	Signalized	AM	E	66.5	E	66.8
			PM	**F**	**>120.0**	**F**	**>120.0**
7	Madison Street/ 7th Street	Signalized	AM	B	13.5	B	13.8
			PM	D	41.1	D	42.5
8	Madison Street/ 11th Street	Signalized	AM	B	11.7	B	11.7
			PM	B	11.4	B	11.4
9	Madison Street/ 12th Street	Signalized	AM	B	11.0	B	11.2
			PM	B	10.2	B	10.2
10	Madison Street/ 14th Street	Signalized	AM	C	21.0	C	22.3
			PM	B	14.5	B	14.6
11	Jackson Street/ 19th Street[a]	AWSC	AM	B	11.5	B	11.7
			PM	B	10.1	B	10.4
12	Jackson Street/ Lakeside Drive[b]	Signalized	AM	**F**	**>120.0**	**F**	**>120.0**
			PM	**F**	**>120.0**	**F**	**>120.0**

Table IV.D-18 *Continued*

No.	Intersection	Traffic Control	Peak Hour	Cumulative 2030 Conditions		Cumulative 2030 plus Project Conditions	
				LOS	Delay	LOS	Delay
13	Alice Street/ 19th Street[a]	AWSC	AM	A	8.9	A	9.2
			PM	A	9.5	A	9.7
14	Harrison Street/ 12th Street	Signalized	AM	B	19.8	B	19.8
			PM	B	17.6	B	17.7
15	Harrison Street/20th Street/Kaiser Center Access Road[b]	Signalized	AM	E	77.1	E	75.7
			PM	**F**	**>120.0**	**F**	**>120.0**
16	Harrison Street/ Lakeside Drive[b]	Signalized	AM	C	24.4	C	26.4
			PM	**F**	**113.4**	**F**	**>120.0**
17	Harrison Street/ Grand Avenue	Signalized	AM	**F**	**>120.0**	**F**	**>120.0**
			PM	**F**	**>120.0**	**F**	**>120.0**
18	Broadway/ 20th Street	Signalized	AM	B	15.4	B	15.5
			PM	C	35.4	C	35.8
19	Broadway/ Grand Avenue	Signalized	AM	C	28.1	C	28.5
			PM	D	45.1	D	49.4
21	Telegraph Avenue/ West Grand Avenue	Signalized	AM	D	44.2	D	46.5
			PM	E	75.3	E	78.6
23	Northgate Avenue/ West Grand Avenue	Signalized	AM	C	33.3	C	33.7
			PM	D	47.8	D	50.8

Bold indicates intersections operating at LOS E (outside downtown) or LOS F (outside and within downtown).
AWSC = All-Way Stop-Controlled
OWSC = One-Way Stop-Controlled
[a] Analyzed for worst-approach.
[b] Cumulative Year 2030 (No Project) Conditions assumes implementation of planned and funded intersection geometry changes.
Source: AECOM, 2009.

- Within Downtown
    1. Oak Street/5th Street/I-880 SB On-Ramp (AM and PM);
    3. Oak Street/7th Street (PM);
    6. Oak Street/14th Street (PM);
    12. Jackson Street/Lakeside Drive (AM and PM);
    15. Harrison Street/20th Street/Kaiser Center Access Road (PM);
    16. Harrison Street/Lakeside Drive (PM); and,
    17. Harrison Street/Grand Avenue (AM and PM).

While the number of vehicles would increase in the Cumulative Year 2015 (No Project) Conditions due to background growth, these vehicles would make use of under capacity (non-critical movements) approaches and underutilization of the green time allotted by the signal capacity. The result would be a higher vehicle throughput and a decrease in the average vehicle delay.

However, the proposed project would not result in a significant impact at the following intersections that were selected for study:

- Telegraph Avenue/27th Street (PM). This intersection would operate at LOS F in the PM peak hour under Cumulative Year 2030 (No Project) Conditions and Cumulative Year 2030 plus Project Conditions. The intersection would operate with an average delay of 112.2 seconds under both the Cumulative Year 2030 (No Project) Conditions and Cumulative Year 2030 plus Project Conditions for the PM peak hour. The intersection would operate with a critical movement delay of 192.2 (WBT) and 44.2 (EBL) under Cumulative Year 2030 (No Project) Conditions and would operate with a critical movement delay of 192.4 (WBL) and 44.2 (EBL) under Cumulative Year 2030 plus Project Conditions. Since the increase in average intersection delay would be less than one second, which is below the two (2) second threshold, and the increase in critical movement delay would be less than one second, which is below the four (4) second threshold, the addition of project-generated traffic would not result in a significant impact at this intersection.

  It should be noted that this intersection is projected to worsen in Cumulative Year 2030 (No Project) Conditions as a result of the proposed and funded lane reduction on 27th Street that is of the 27th Street/Bay Place Bike Lanes project.

- Oak Street/5th Street/I-880 SB On-Ramp (AM and PM). This intersection would operate at LOS F in the AM and PM peak hour under Cumulative Year 2030 (No Project) Conditions and Cumulative Year 2030 plus Project Conditions. Because delay values over 120.0 seconds tend to increase exponentially and are thus generally considered unreliable, the increase in v/c ratio as a result of Project traffic was instead evaluated for the AM and PM peak hour. The intersection would operate with a v/c ratio of 1.30 under Cumulative Year 2030 (No Project) Conditions and would operate with a v/c ratio of 1.32 under Cumulative Year 2030 plus Project Conditions for the AM peak hour. The intersection would operate with a v/c ratio of 2.01 under Cumulative Year 2030 (No Project) Conditions and would operate with a v/c ratio of 2.03 under Cumulative Year 2030 plus Project Conditions for the PM peak hour. Since the maximum increase in v/c ratio would be less than two (2) percent, which is below the three (3) percent threshold, the addition of project-generated traffic would not result in a significant impact at this intersection.

- Oak Street/14th Street (PM). This intersection would operate at LOS F in the PM peak hour under Cumulative Year 2030 (No Project) Conditions and Cumulative Year 2030 plus Project Conditions. Because delay values over 120.0 seconds tend to increase exponentially and are thus generally considered unreliable, the increase in v/c ratio as a result of Project traffic was instead evaluated for the PM peak hour. The intersection would operate with a v/c ratio of 0.95 under Cumulative Year 2030 (No Project) Conditions and would operate with a v/c ratio of 0.96 under Cumulative Year 2030 plus Project Conditions for the PM peak hour. Since the increase in v/c ratio would be less than one percent, which is below the three (3) percent threshold, the addition of project-generated traffic would not result in a significant impact at this intersection.

- Jackson Street/Lakeside Drive (AM and PM). This intersection would operate at LOS F in both the AM and PM peak hours under Cumulative Year 2030 (No Project) Conditions and Cumulative Year 2030 plus Project Conditions. Because delay values over 120.0 seconds tend to increase exponentially and are thus generally considered unreliable, the increase in v/c ratio as a result of Project traffic was instead evaluated for the AM and PM peak hour. The intersection would operate with a v/c ratio of 0.95 under Cumulative Year 2030 (No Project) Conditions and would operate with a v/c ratio of 0.95 under Cumulative Year 2030 plus Project Conditions for the AM peak hour. The intersection would operate with a v/c ratio of 1.52 under Cumulative Year 2030 (No Project) Conditions and would operate with a v/c ratio of 1.52 under Cumulative Year 2030 plus Project

Conditions for the PM peak hour. Since the maximum increase in v/c ratio would be less than one percent, which is below the three (3) percent threshold, the addition of project-generated traffic would not result in a significant impact at this intersection.

It should be noted that this intersection is projected to worsen in Cumulative Year 2030 (No Project) Conditions as a result of the proposed and funded single-lane reduction in both north- and southbound directions along Lakeside Drive that is part of Original Measure DD.

- Harrison Street/20th Street/Kaiser Center Access Road (PM). This intersection would operate at LOS F in the PM peak hour under both Cumulative Year 2030 (No Project) Conditions and Cumulative Year 2030 plus Project Conditions. Because delay values over 120.0 seconds tend to increase exponentially and are thus generally considered unreliable, the increase in v/c ratio as a result of Project traffic was instead evaluated for PM peak hour. The intersection would operate with a v/c ratio of 0.99 under Cumulative Year 2030 (No Project) Conditions and would operate with a v/c ratio of 1.00 under Cumulative Year 2030 plus Project Conditions for the PM peak hour. Since the maximum increase in v/c ratio would be less than one percent, which is below the three (3) percent threshold, the addition of project-generated traffic would not result in a significant impact at this intersection.

  It should be noted that this intersection is projected to worsen in Cumulative Year 2030 (No Project) Conditions as a result of the proposed and funded intersection geometry configuration changes that are part of Original Measure DD.

- Harrison Street/Grand Avenue (AM and PM). This intersection would operate at LOS F in both the AM and PM peak hours under Cumulative Year 2030 (No Project) Conditions and Cumulative Year 2030 plus Project Conditions. Because delay values over 120.0 seconds tend to increase exponentially and are thus generally considered unreliable, the increase in v/c ratio as a result of Project traffic was instead evaluated For the AM and PM peak hour. The intersection would operate with a v/c ratio of 1.11 under Cumulative Year 2030 (No Project) Conditions and would operate with a v/c ratio of 1.12 under Cumulative Year 2030 plus Project Conditions for the AM peak hour. The intersection would operate with a v/c ratio of 1.75 under Cumulative Year 2030 (No Project) Conditions and would operate with a v/c ratio of 1.76 under Cumulative Year 2030 plus Project Conditions for the PM peak hour. Since the maximum increase in v/c ratio would be less than one percent, which is below the three (3) percent threshold, the addition of project-generated traffic would not result in a significant impact at this intersection.

Impact TRANS-1: The intersection of Oak Street/7th Street would operate at LOS F during the PM peak hour under Cumulative Year 2030 Plus Project Conditions. The proposed project would contribute to this impact. (S)

The intersection of Oak Street/7th Street would operate at LOS F in the PM peak hour under Cumulative Year 2030 (No Project) Conditions and Cumulative Year 2030 plus Project Conditions. Intersection average delay would be 92.4 seconds under Cumulative Year 2030 (No Project) Conditions and 97.1 seconds under Cumulative Year 2030 plus Project Conditions for the PM peak hour. Since the increase in intersection average delay would be 4.7 seconds, which is above the two (2) second threshold of significance, the project would contribute to a significant cumulative impact at this intersection.

Mitigation Measure TRANS-1: Implement the following measures at the Oak Street/7th Street intersection:

- Optimize the traffic signal (to include determination of allocation of green time for each intersection approach) for the PM peak hour in tune with the relative traffic volumes on those approaches.
- Coordinate the signal timing at this intersection with the adjacent intersections in the same signal coordination group.

To implement this measure, the Project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval:

- Plans, Specifications, and Estimates (PS&E) to modify the intersection. All elements shall be designed to City standards in effect at the time of construction, and all new or upgraded signals should include these enhancements. All other facilities supporting vehicle travel and alternative modes through the intersection shall be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for the elements listed below:
  - 2070L Type Controller
  - GPS communication (clock)
  - Accessible pedestrian crosswalks according to Federal and State Access Board guidelines
  - City Standard ADA wheelchair ramps
  - Full actuation (video detection, pedestrian push buttons, bicycle detection)
  - Accessible Pedestrian Signals, audible and tactile according to Federal Access Board guidelines
  - Countdown Pedestrian Signals
  - Fiber signal interconnect and communication to City Traffic Management Center for corridors identified in the City's ITS Master Plan for a maximum of 600 feet
  - Signal timing plans for the signals in the coordination group.

The Project sponsor shall fund, prepare, and install the approved plans and improvements.

After implementation of this measure, conditions at this intersection would improve to an acceptable level of service. (LTS)

Impact TRANS-2: The intersection of Harrison Street/Lakeside Drive would operate at LOS F during the PM peak hour under Cumulative Year 2030 Plus Project Conditions. The proposed project would contribute to this impact. (S)

The intersection of Harrison Street/Lakeside Drive would operate at LOS F in the PM peak hours under both Cumulative Year 2030 (No Project) Conditions and Cumulative Year 2030 plus Project Conditions. Total intersection average delay would be 113.4 seconds under Cumulative Year 2030 (No Project) Conditions and >120.0 seconds under Cumulative Year 2030 plus Project Conditions for the PM peak hour. Since the increase in total intersection average delay would be above the two (2)

second threshold of significance for intersections outside of the downtown area, the project would contribute to a significant cumulative impact at this intersection.

Mitigation Measure TRANS-2: Implement the following measures at the Harrison Street/Lakeside Drive intersection:

- Optimize the traffic signal (to include determination of allocation of green time for each intersection approach) for the PM peak hour in tune with the relative traffic volumes on those approaches.
- Coordinate the signal timing at this intersection with the adjacent intersections in the same signal coordination group.

To implement this measure, the Project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval:

- Plans, Specifications, and Estimates (PS&E) to modify the intersection. All elements shall be designed to City standards in effect at the time of construction, and all new or upgraded signals should include these enhancements. All other facilities supporting vehicle travel and alternative modes through the intersection shall be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for the elements listed below:
  - 2070L Type Controller
  - GPS communication (clock)
  - Accessible pedestrian crosswalks according to Federal and State Access Board guidelines
  - City Standard ADA wheelchair ramps
  - Full actuation (video detection, pedestrian push buttons, bicycle detection)
  - Accessible Pedestrian Signals, audible and tactile according to Federal Access Board guidelines
  - Countdown Pedestrian Signals
  - Fiber signal interconnect and communication to City Traffic Management Center for corridors identified in the City's ITS Master Plan for a maximum of 600 feet
  - Signal timing plans for the signals in the coordination group.

The Project sponsor shall fund, prepare, and install the approved plans and improvements.

After implementation of this measure, conditions at this intersection would improve to an acceptable level of service. (LTS)

Impact TRANS-3: The intersection of San Pablo Avenue/West Grand Avenue would operate at LOS F during PM peak hour under Cumulative Year 2030 Plus Project Conditions. The proposed project would contribute to this impact. (S)

The intersection of San Pablo Avenue/West Grand Avenue would operate at LOS F in the PM peak hour under Cumulative Year 2030 (No Project) Conditions and Cumulative Year 2030 plus Project

Conditions. Intersection average delay would be 89.2 seconds under Cumulative Year 2030 (No Project) Conditions and 92.2 seconds under Cumulative Year 2030 plus Project Conditions for the PM peak hour. Since the increase in intersection average delay would be 3.0 seconds, which is above the two (2) second threshold of significance, the project would contribute to a significant cumulative impact at this intersection.

> Mitigation Measure TRANS-3: While the signal phasing at the intersection of San Pablo Avenue/West Grand Avenue could be modified to allow protected-permitted phasing for the northbound left-turn movements and the signal timing and cycle length re-optimized, this study does not provide sufficient detail to evaluate the operational and geometric feasibility of this mitigation measure, therefore this impact is conservatively deemed significant and unavoidable. The project applicant shall retain a qualified traffic engineer to conduct a feasibility study at this intersection which will be submitted to TSD for review and approval to determine appropriate measures to mitigate the cumulative impacts at this intersection. After appropriate mitigation measures are determined, the project sponsor shall fund, prepare, and implement the approved plans at the City's direction. (SU)

It should be noted that the City of Oakland's General Plan Housing Element (adopted by City Council, December 2010) specifically identified weekday PM Peak Hour operations at this intersection as significant and unavoidable in future year scenarios. Through certification of the Housing Element, the City Council adopted a statement of overriding considerations for the impact at this intersection. Therefore, weekday PM Peak Hour operations at this intersection have been cleared from further CEQA analysis, but the project applicant shall still implement the mitigation measure and this impact is still considered Significant and Unavoidable.

(12) Cumulative Year 2030 plus Project Conditions CMP and MTS Roadway Segment Level of Service. The Cumulative Year 2030 plus Project Conditions AM and PM peak hour roadway segment LOS for the study roadway segments are summarized in Table IV.D-19. As shown in Table IV.D-19, the project is expected to slightly increase the v/c ratio for several study roadway segments. The following roadway segments are expected to operate at unacceptable conditions under Cumulative Year 2030 plus Project Conditions:

- Caltrans Facility
    2. I-880, between Oak Street and 5th Avenue (WB AM and EB PM); and,
    3. I-980, between 27th Street and 29th Street (SB AM).

However, the project would not result in a significant impact on I-980, from 27th Street to 29th Street (SB AM) roadway segment. The increase in v/c ratio as a result of project traffic is less than the three (3) percent threshold of significance. Therefore, the project is not expected to cause significant impacts to operations on this roadway segment and no mitigation measures are required.

Table IV.D-19: Cumulative Year 2030 plus Project Conditions CMP and MTS Roadway Segment Levels of Service

No.	Roadway Segment	Direction	Cumulative 2030 Conditions		Cumulative 2030 plus Project Conditions	
			LOS	v/c	LOS	v/c
AM Peak Hour						
Caltrans Facilities						
1	**I-880** between Market Street and I-980	EB	B	0.48	B	0.49
		WB	C	0.56	C	0.56
2	**I-880** between Oak Street and 5th Avenue	EB	E	0.92	E	0.93
		WB	E	0.99	**F**	**1.00**
3	**I-980** between 27th Street and 29th Street	NB	B	0.38	B	0.39
		SB	**F**	**1.11**	**F**	**1.13**
Non-Caltrans Facilities						
4	**Broadway** between 19th Street and Grand Avenue	NB	B	0.43	B	0.44
		SB	B	0.38	B	0.38
5	**Telegraph Avenue** between 20th Street and 27th Street	NB	B	0.38	B	0.38
		SB	C	0.55	C	0.55
6	**West Grand Avenue** between Telegraph Avenue and San Pablo Avenue	EB	E	0.89	E	0.90
		WB	C	0.56	C	0.57
7	**Grand Avenue** between Broadway and Harrison Street	EB	C	0.61	C	0.62
		WB	D	0.78	D	0.78
8	**Harrison Street** between 20th Street and 14th Street	NB	B	0.36	B	0.36
		SB	B	0.41	B	0.45
PM Peak Hour						
Caltrans Facilities						
1	**I-880** between Market Street and I-980	EB	B	0.42	B	0.43
		WB	C	0.50	C	0.51
2	**I-880** between Oak Street and 5th Avenue	EB	E	0.99	**F**	**1.00**
		WB	E	0.90	E	0.90
3	**I-980** between 27th Street and 29th Street	NB	D	0.80	D	0.84
		SB	C	0.50	C	0.51
Non-Caltrans Facilities						
4	**Broadway** between 19th Street and Grand Avenue	NB	D	0.76	D	0.76
		SB	B	0.48	B	0.48
5	**Telegraph Avenue** between 20th Street and 27th Street	NB	C	0.60	C	0.60
		SB	B	0.48	B	0.48
6	**West Grand Avenue** between Telegraph Avenue and San Pablo Avenue	EB	C	0.61	C	0.62
		WB	D	0.74	D	0.74
7	**Grand Avenue** between Broadway and Harrison Street	EB	D	0.77	D	0.79
		WB	D	0.74	D	0.74
8	**Harrison Street** between 20th Street and 14th Street	NB	D	0.77	D	0.77
		SB	A	0.22	A	0.22

Bold indicates intersections operating at LOS F.

Impact TRANS-4: The segment of I-880 from Oak to 5th Street would operate at LOS F in the westbound AM peak hour and LOS F in the eastbound PM peak hour under Cumulative Year 2030 plus Project Conditions. (S)

This roadway segment would operate at LOS E in the AM peak hour westbound direction under Cumulative Year 2030 (No Project) Conditions and LOS F under Cumulative Year 2030 plus Project Conditions. This roadway segment would operate at LOS E in the PM peak hour eastbound direction under Cumulative Year 2030 Conditions and LOS F under Cumulative Year 2030 plus Project Conditions. Since the project would cause the segment to degrade from LOS E to LOS F, the project would contribute to a significant cumulative impact on this segment in the AM and PM peak hour.

> Mitigation Measure TRANS-4: The segment of I-880 from Oak Street to 5th Avenue consists of two four-lane aerial structures, with the segment immediately west of Lake Merritt Channel bordered on the north by the Laney College parking lot and on the south by industrial uses. The aerial structure continues east of the channel, crossing over the existing Union Pacific railroad right-of-way. Increasing capacity on the freeway would likely require increasing the number of travel lanes, but given the existing alignment and constraints due to lack of right-of-way for both the roadway on the west end of the channel and possibly for support columns above the Union Pacific right-of-way, there are no feasible measures to mitigate the project's impacts. Any proposed mitigation measure would also require Caltrans project approval. Therefore, the project impacts on this roadway segment are significant and unavoidable. (SU)

It should be noted that while the project would cause the segment to degrade to LOS F, the increase in v/c ratio is only one (1) percent. It should also be noted that the City of Oakland's General Plan Housing Element (adopted by City Council, December 2010) specifically identified weekday PM Peak Hour operations at this intersection as significant and unavoidable in future year scenarios. Through certification of the Housing Element, the City Council adopted a statement of overriding considerations for the impact at this intersection. Therefore, weekday PM Peak Hour operations at this intersection have been cleared from further CEQA analysis but the project applicant shall still implement the mitigation measure and this impact is still considered Significant and Unavoidable.

(13) Preferred Measure DD Configuration Analysis. As part of the Snow Park/Harrison/ 20th Street Intersection Design Study, refinements to the Original Measure DD have been proposed, resulting in a Preferred Measure DD configuration. This section discusses the Preferred Measure DD configuration and summarizes findings concerning intersection delay and level of service for the Original Measure DD configuration and the Preferred Measure DD configuration.

Original Measure DD Intersection Configuration. As discussed previously in this section, Original Measure DD proposes improvements to the Harrison Street/Lakeside Drive/20th Street triangle which are not yet constructed. These improvements include the removal of the 20th Street leg of the triangle, which would then be converted to open space as part of an expanded Snow Park. The intersection of Harrison Street/Lakeside Drive would be reconfigured into a "T" intersection (this would require the realignment of Lakeside Drive). These improvements would enhance pedestrian access to Lake Merritt by simplifying routes for pedestrians and reducing the number of crossings. The proposed Original Measure DD intersection configuration is illustrated in Figure IV.D-7.

The reconfiguration of the Harrison Street/Lakeside Drive/20th Street triangle as originally proposed would result in substantial queuing issues and weaving conflicts. These issues would be further

complicated by the addition of traffic generated by the proposed Emerald Views project and other proposed developments, such as the Kaiser Center Office Project.

Preferred Measure DD Intersection Configuration. Refinements to the Original Measure DD configuration were developed through a collaborative consideration of design opportunities and constraints by a team of technical consultants and City staff and led to the Preferred Measure DD configuration. An illustration of the Preferred Measure DD intersection configuration is illustrated in Figure IV.D-15.

Refinements to the Original Measure DD configuration that were incorporated into the Preferred Measure DD configuration include:

- Addition of a southbound left-turning movement from the Kaiser Center Access Road at the 20th Street/Harrison Street intersection;
- Modification of the proposed southbound right-turn lane to provide a channelized island for pedestrian refuge and stop-sign control for the southbound right-turning movement;
- Modification of the westbound Harrison Street approach to 20th Street to provide two left-turn lanes, two through lanes, and one right-turn lane;
- Modification of the eastbound 20th Street approach to Harrison Street to provide one left-through lane, one through lane, and one right-through lane;
- Modification of the northbound Harrison Street approach to 20th Street to provide one left-through lane, and two right-turn lanes;
- Modification of signal phasing, timing, and median design at the 20th Street/Harrison Street intersection to provide:
    - Split phasing for the north and southbound movements and for the east and westbound movements
    - Two-stage pedestrian crossing across 20th Street at Harrison Street with offset crosswalk and pedestrian railings
    - Elimination of pedestrian crossing across the east leg of the intersection
- Modification of northbound Lakeside Drive at Harrison Street to provide one left-turn lane and two right-turn lanes;
- Modification of signal phasing and timing at the Lakeside Drive/Harrison Street intersection; and,
- Reduction of southbound travel lanes on Harrison Street between West Grand Avenue and Lakeside Drive from four (4) lanes to three (3) lanes.

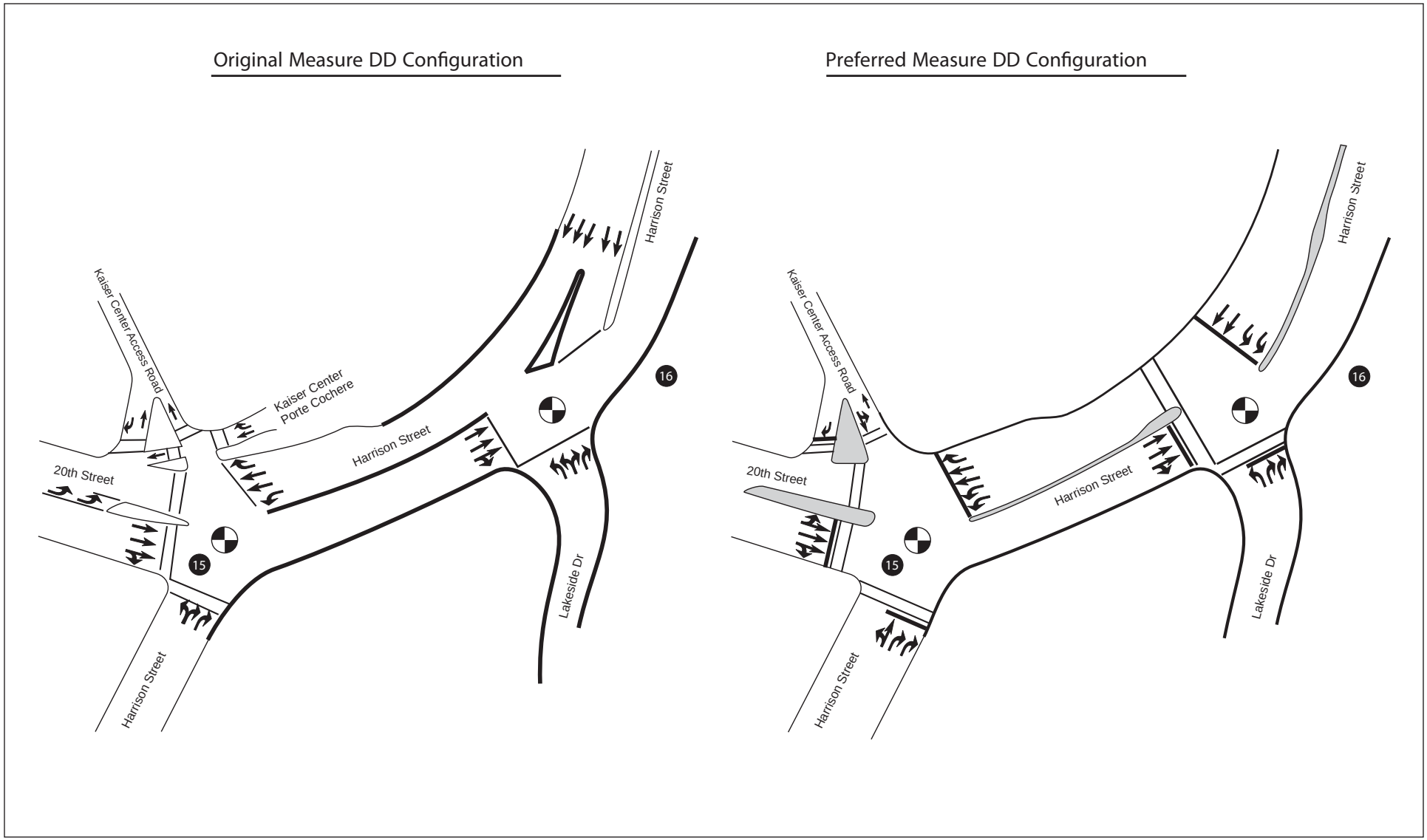

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FIGURE IV.D-15

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NOT TO SCALE

SOURCE: AECOM, 2011.

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Emerald Views Residential Development EIR
Preferred Measure DD Configuration

The Kaiser Center Office Project EIR analyzed the effects of the Preferred Measure DD configuration improvements as it related to the Kaiser Center Office Project. The Preferred Measure DD configuration was assumed to be in place by 2030. The analysis showed that the Harrison Street and Lakeside Drive intersection would operate at LOS C during the AM Peak Hour and LOS D during the PM Peak Hour under Cumulative Conditions without Kaiser Center traffic. With the addition of Kaiser Center traffic the intersection would operate at LOS C during the AM Peak Hour and LOS E during the PM Peak Hour. However, with mitigation (optimization of the traffic signal) the intersection would operate at LOS B during the AM Peak Hour and LOS C during the PM Peak Hour, resulting in a less-than-significant (LTS) impact. The analysis also concludes that the Preferred Measure DD configuration would not have a significantly adverse effect on traffic operations at other intersections.

The proposed Emerald Views Project analysis under the Cumulative 2030 plus Project scenario with Original Measure DD configuration concluded that the project would increase the total average delay at this intersection by more than two seconds resulting in a significant impact. However, the analysis concludes that with mitigation (optimization of the traffic signal) the impact would be reduced to less-than-significant (LTS) impact. Since the Emerald Views project included Kaiser Center in the cumulative scenario, implementation of Preferred Measure DD improvements with the addition of project traffic would result in the same less-than-significant (LTS) impact as noted in the Kaiser Center EIR (i.e., LOS B during the weekday AM Peak Hour and LOS C during the PM Peak Hour). Again and as noted above, traffic operations at other intersections would not be significantly affected with construction of the proposed project and implementation of Preferred Measure DD.

Below is a supplementary traffic analysis assuming the Preferred Measure DD configuration for the following scenarios:

- Cumulative Year 2015 (No Project) Conditions;
- Cumulative Year 2015 plus Project Conditions;
- Cumulative Year 2030 (No Project) Conditions; and,
- Cumulative Year 2030 plus Project Conditions.

Each of these scenarios is evaluated in the text that follows.

Cumulative Year 2015 (No Project) Conditions Intersection Level of Service. Intersection level of service for the Preferred Measure DD configuration under Cumulative Year 2015 (No Project) Conditions is summarized in Table IV.D-20. Figure IV.D-16 summarizes intersection volumes for the Preferred Measure DD configuration for all scenarios.

As shown in Table IV.D-20, the following intersection would operate at unacceptable conditions under Cumulative Year 2015 Conditions (Original Measure DD):

- Within Downtown
    15. Harrison Street/20th Street/Kaiser Center Access Road (PM).

Table IV.D-20: Cumulative Year 2015 (No Project) Conditions Intersection Levels of Service – Preferred Measure DD

No.	Intersection	Traffic Control	Peak Hour	Cumulative 2015 Conditions (Original Measure DD)		Cumulative 2015 Conditions (Pref. Measure DD)	
				LOS	Delay	LOS	Delay
Within Downtown							
15	Harrison Street/20th Street/ Kaiser Center Access Road	Signalized	AM	D	46.8	C	26.1
			PM	**F**	**115.2**	C	25.1
16	Harrison Street/ Lakeside Drive	Signalized	AM	B	18.4	B	17.7
			PM	C	29.0	B	17.4

Pref. Measure DD = Preferred Measure DD
Bold indicates intersections operating at LOS F.
Source: AECOM, 2011.

This intersection would operate at LOS F in the PM peak hour under Cumulative Year 2015 (No Project) Conditions (Original Measure DD), but would improve to LOS C under Cumulative Year 2015 (No Project) Conditions as a result of the Preferred Measure DD configuration.

Cumulative Year 2030 (No Project) Conditions Intersection Level of Service. Intersection level of service for the Preferred Measure DD configuration under Cumulative Year 2030 (No Project) Conditions is summarized in Table IV.D-21. Intersection volumes for all scenarios for the Preferred Measure DD configuration are summarized in Figure IV.D-16.

Table IV.D-21: Cumulative Year 2030 (No Project) Conditions Intersection Levels of Service – Preferred Measure DD

No.	Intersection	Traffic Control	Peak Hour	Cumulative 2030 Conditions (Original Measure DD)		Cumulative 2030 Conditions (Pref. Measure DD)	
				LOS	Delay	LOS	Delay
Within Downtown							
15	Harrison Street/20th Street/ Kaiser Center Access Road	Signalized	AM	**F**	**102.0**	C	27.0
			PM	**F**	**>120.0**	C	29.9
16	Harrison Street/ Lakeside Drive	Signalized	AM	C	24.4	B	17.0
			PM	**F**	**113.6**	C	21.2

Pref. Measure DD = Preferred Measure DD
Bold indicates intersections operating at LOS F.
Source: AECOM, 2011.

As shown in Table IV.D-21, the following intersections would operate at unacceptable conditions under Cumulative Year 2030 (No Project) Conditions (Original Measure DD):

- Within Downtown
    15. Harrison Street/20th Street/Kaiser Center Access Road (AM/PM); and,
    16. Harrison Street/Lakeside Drive (PM).

The intersection of Harrison Street/20th Street/Kaiser Center Access Road would operate at LOS F in the AM and PM peak hour under Cumulative Year 2030 (No Project) Conditions (Original Measure DD). The intersection of Harrison Street/Lakeside Drive would operate at LOS F in the AM peak

hour under Cumulative Year 2030 (No Project) Conditions (Original Measure DD). Both intersections would improve to LOS B and C under Cumulative Year 2030 (No Project) Conditions as a result of the Preferred Measure DD configuration.

Cumulative Year 2015 plus Project Conditions Intersection Level of Service. Intersection level of service for the Preferred Measure DD configuration under Cumulative Year 2015 plus Project Conditions is summarized in Table IV.D-22. Intersection volumes for the Preferred Measure DD configuration for all scenarios are summarized in Figure IV.D-16.

Table IV.D-22: Cumulative Year 2015 plus Project Intersection Levels of Service – Preferred Measure DD

No.	Intersection	Traffic Control	Peak Hour	Cumulative 2015 Conditions (Pref. Measure DD)		Cumulative 2015 plus Project Conditions (Pref. Measure DD)	
				LOS	Delay	LOS	Delay
Within Downtown							
15	Harrison Street/20th Street/ Kaiser Center Access Road	Signalized	AM	C	26.1	C	26.2
			PM	C	25.1	C	25.4
16	Harrison Street/ Lakeside Drive	Signalized	AM	B	17.7	B	17.9
			PM	B	17.4	B	18.2

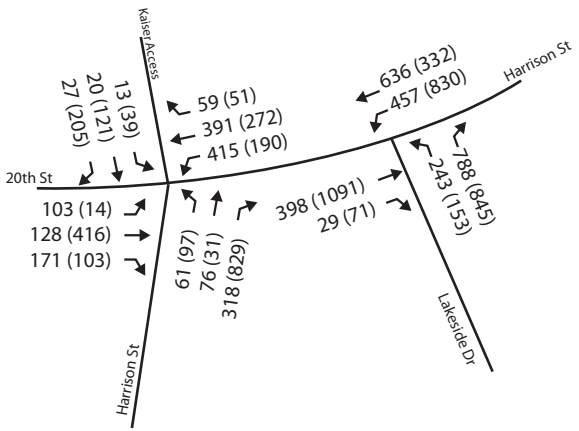
Pref. Measure DD = Preferred Measure DD
Source: AECOM, 2011.

As shown in Table IV.D-22, the intersections of Harrison Street/20th Street/Kaiser Center Access Road and Harrison Street/Lakeside Drive would continue to operate at acceptable conditions under Cumulative Year 2015 plus Project Conditions. The project would not result in a significant impact at either study intersection.

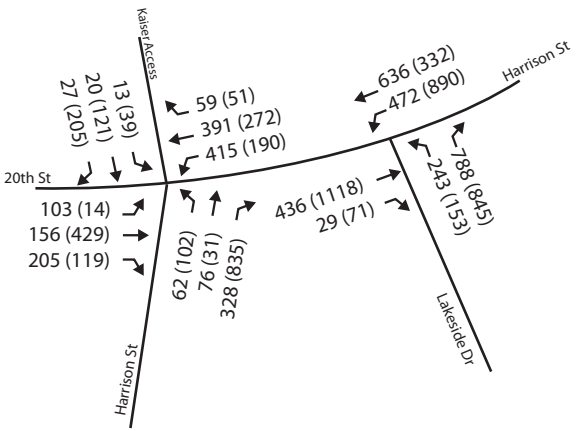
Cumulative Year 2030 plus Project Conditions Intersection Level of Service. Intersection level of service for the Preferred Measure DD configuration under Cumulative Year 2030 plus Project Conditions is summarized in Table IV.D-23. Intersection volumes for the Preferred Measure DD configuration for all scenarios are summarized in Figure IV.D-16.

As shown in Table IV.D-23, the intersections of Harrison Street/20th Street/Kaiser Center Access Road and Harrison Street/Lakeside Drive would continue to operate at acceptable conditions under Cumulative Year 2030 plus Project Conditions. The project would not result in a significant impact at either study intersection.

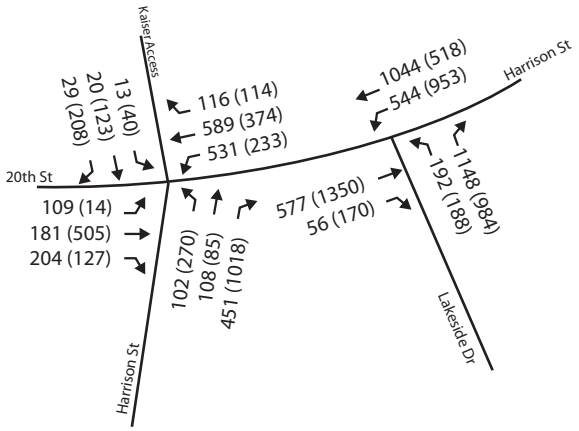
Cumulative Year 2015 Baseline



Cumulative Year 2015 Baseline Plus Project



Cumulative Year 2030 Baseline



Cumulative Year 2030 Baseline Plus Project

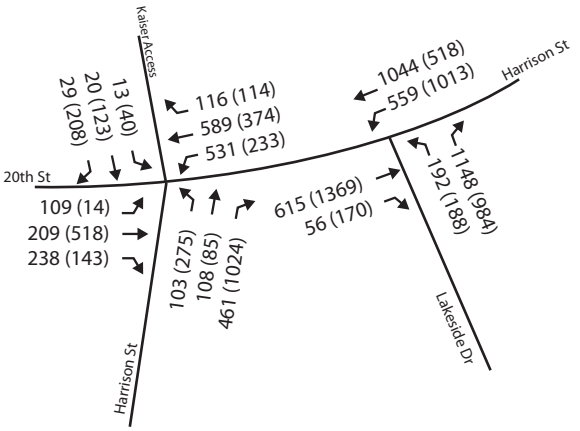


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FIGURE IV.D-16

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xx (xx) = AM (PM) Peak Hour volumes

Emerald Views Residential Development EIR
Preferred Measure DD Traffic Volumes
AM(PM) Peak Hour

SOURCE: AECOM, 2011.

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Table IV.D-23: Cumulative Year 2030 plus Project Intersection Levels of Service – Preferred Measure DD

No.	Intersection	Traffic Control	Peak Hour	Cumulative 2030 Conditions (Pref. Measure DD)		Cumulative 2030 plus Project Conditions (Pref. Measure DD)	
				LOS	Delay	LOS	Delay
Within Downtown							
15	Harrison Street/20th Street/ Kaiser Center Access Road	Signalized	AM	C	27.0	C	27.4
			PM	C	29.9	C	30.3
16	Harrison Street/ Lakeside Drive	Signalized	AM	B	17.0	B	17.3
			PM	C	21.2	C	23.4

Pref. Measure DD = Preferred Measure DD
Source: AECOM, 2011.

(14) Site Access and Circulation Impacts. The project proposes one driveway midblock on 19th Street between Jackson Street and Alice Street. Currently, 19th Street operates as a one-way westbound street. The driveway would operate "right in, right out," meaning left turns into and out of the driveway would not be possible. This configuration not only reduces delays for people attempting to exit the driveway but also avoids safety and queuing issues in a configuration where left turns are permitted. In addition, given that 19th Street is a minor one-way street, in the eastbound direction, the proposed driveway is not expected to result in significant queuing- or safety-related impacts.

(15) Construction Period Impacts. Potential short-term construction impacts generated by the proposed project would include the impacts associated with the delivery of construction materials and equipment, removal of construction debris, and parking for construction workers. 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 congestion on project area streets because of the slower movements and larger turning radii of construction trucks compared to passenger vehicles. 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 on-street parking occupancy levels in the area. Project construction traffic could also temporarily impact the operations of AC Transit, and affect bicycle and pedestrian access to the site. However, construction traffic levels would be significantly less than operations traffic levels. Therefore, construction period impacts would be less severe than operations impacts.

The project would be subject to the City of Oakland Standard Conditions of Approval (COA) for construction management, traffic and parking (TRANS-2 and TRANS-3). These COAs include requirements for a set of comprehensive traffic control measures, including scheduling of major truck trips and deliveries to avoid peak traffic hours, detour signs, lane closure procedures, signs, cones for drivers, and designated construction access routes. Traffic management strategies would 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. Implementation of COAs TRANS-2 and TRANS-3 would ensure that construction period impacts are reduced to a less-than-significant level.

(16) Other Thresholds. The following section discusses transportation-related topics other than those of intersection or roadway levels of service.

d. Air Traffic. The project would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

e. Pedestrian and Bicycle Impacts. This discussion evaluates the project's potential to result in either of the following:

- 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); and
- Fundamentally conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle routes).

(1) Pedestrian Impacts. Although the project is expected to add some pedestrian trips to the adjacent pedestrian network, weekday AM and midday peak period observations indicate that the pedestrian facilities are currently operating under capacity and would be able to handle the increase in pedestrians as a result of the project. Pedestrian crosswalks are provided in all directions at every intersection within a four block radius of the project site, with the exception of Jackson Street at 18th Street and 19th Street where crosswalks are provided on the west side if the intersection (closest to the project site).

The project will add a significant number (966) of new pedestrian trips to the area. Although not required by CEQA to address or mitigate any environmental impacts of the proposed project, the following "Recommendation" should be considered to improve access and safety for pedestrians heading towards Lake Merritt. These are consistent with the City of Oakland Pedestrian Master Plan guidelines.

<u>Recommendation TRANS-1</u>: Installation of pedestrian crosswalks and ADA-compliant ramps with domes at the intersections of Jackson Street and 19th Street.

Sidewalks are provided on all streets in the vicinity of the project site including along 19th Street – the primary pedestrian route between the 19th Street BART Station and the project site. Currently, sidewalk width is eight to ten feet along most streets in the project vicinity. Sidewalks on Lakeside Drive are narrower, approximately six feet in width. Existing sidewalk conditions are acceptable if maintained. According to City of Oakland Pedestrian Master Plan guidelines the proposed project must maintain ten foot sidewalk widths on the perimeter of the project. The project currently proposes a curb cut on 19th Street that would cause a significant reduction to sidewalk widths and would encroach onto public right-of-way. Sidewalks on the perimeter of the project would not meet the ten foot minimum width requirement as recommended in the City of Oakland Pedestrian Master Plan guidelines and the Institute of Transportation Engineers *Design and Safety of Pedestrian Facilities.*

<u>Impact TRANS-5</u>: The Project proposes to reduce the width of the sidewalk to accommodate two loading areas which would present a potential safety hazard for pedestrians. . (S)

Mitigation Measure TRANS-5: Curb cuts currently proposed on 19th Street to accommodate two loading areas shall be removed and redesigned such that they would not encroach onto public right-of-way and would maintain the existing sidewalk width.

In addition to Mitigation Measure TRANS-5, the project would be subject to the City's Standard Conditions of Approval for parking and transportation demand management, COA TRANS-1 listed in Section 4, City of Oakland Conditions of Approval. COA TRANS-1 requires the applicant to implement an approved TDM plan containing strategies to reduce on-site parking demand and single occupancy vehicle travel. The TDM includes strategies to increase bicycle, pedestrian, transit and carpool/vanpool use. Implementation of COA TRANS-1 would ensure that pedestrian impacts are reduced to a less-than-significant level. (LTS)

(2) Bicycle Impacts. Although the existing bikeway network in the project vicinity is somewhat limited, the planned City of Oakland network improvements would make bicycling a safer and more attractive mode of transportation. Based on 2000 US Census data, the bicycle mode share for the project's census tract is approximately 3.5 percent. Assuming project residents bicycle at similar rates, the proposed project would contribute to a minor increase in bicycle traffic using the adjacent roadway and bikeway network. The existing Class 2 and Class 3 bicycle facilities in the vicinity of the project have excess capacity to handle the increase in bicycles that would result from the project.

The project would exceed bicycle parking requirements, it would include bicycle storage facilities with twenty-eight (28) racks available to residents. No mitigation measures would be required for bicycle facilities, since the addition of the project-generated bicycle trips would not result in any significant impacts to bicycle conditions and the project proposes no features which would be unsafe to bicycle travel or conflict with City of Oakland policies. The proposed project would not substantially increase traffic hazards to bicycles due to a design feature (e.g., sharp curves or dangerous intersections) that does not comply with Caltrans design standards or incompatible uses, the proposed project would not contribute to a substantial cumulative impact. The project would be subject to the City's Standard Conditions of Approval for parking and transportation demand management, COA TRANS-1. Implementation of COA TRANS-1 would ensure that bicycle impacts are reduced to a less-than-significant level.

However, project-generated vehicles would increase traffic volumes on roadways in the immediate vicinity of the project site, which could reduce the attractiveness of bicycling as a mode of transport for trips in this area. As discussed in the Existing Bicycle Conditions section, the segment of 20th street, between Harrison Street and Franklin Street is proposed for a Class 2 bicycle facility (bicycle lanes). Given the high volumes expected on this roadway in the Near-Term (2015) Conditions and Cumulative (2030) Conditions and in order to encourage use of alternate modes of travel such as bicycling and provide greater safety for bicyclists, it is recommended that this segment of bikeway be completed. Although not required to mitigate any environmental impact, the following recommendation should be considered to improve bicycle conditions in the immediate vicinity of the project.

Recommendation TRANS-2: Construct the 20th Street bikeway between Harrison Street and Franklin Street.

f. AC Transit Travel Time. Travel time along the following transit-vehicle corridors was evaluated in order to determine the impacts of project-generated traffic on the operations of key AC Transit trunk lines in Downtown Oakland:

1. 20th Street (eastbound) from Telegraph Avenue to Harrison Street;
2. 20th Street (westbound) from Harrison Street to Telegraph Avenue;
3. Broadway (southbound) from 27th Street to 20th Street;
4. Broadway (southbound) from 20th Street to 11th Street;
5. Broadway (northbound) from 11th Street to 20th Street;
6. Broadway (northbound) from 20th Street to 27th Street;
7. West Grand Avenue between San Pablo Avenue and Harrison Street – (westbound AM and eastbound PM); and,
8. Telegraph Avenue from 20th Street to 27th Street – (southbound AM and northbound PM).

Corridors #1 through #6 were analyzed in both directions during both the AM and PM peak hours. Corridors #7 and #8 were analyzed for only one direction during each peak hour, as traffic on these segments is highly directional.

Table IV.D-24 and Table IV.D-25 summarize the results of the travel time analysis for the AM and PM peak hours. Observations of corridor travel times were taken for Existing Conditions and travel time differentials obtained from the Synchro networks used in the intersection LOS analysis.

It should be noted that the travel times presented here only represent the time it takes automobiles to travel the length of the corridor. Obtaining a travel time estimate for transit vehicles traveling through corridors is difficult considering that the travel time for transit vehicles is much more variable than that for automobiles. This variability is due to a wide variety of factors, but primarily involves schedule adherence and on-time performance. A transit vehicle that is already behind schedule can quickly get further behind schedule due to accumulating passenger demand at transit stops, resulting in longer than usual dwell times to allow passengers to board and alight. In addition, since transit vehicles must follow the same route, there is less flexibility than with automobiles in events such as accidents or unexpected congestion, increasing delays further.

Table IV.D-24: Transit Corridor Travel Times – AM Peak Hour

No.	Corridor	Direction	Scenario					
			Existing (sec)	Existing Plus Project (sec)	Cumulative 2015 (sec)	Cumulative 2015 Plus Project (sec)	Cumulative 2030 (sec)	Cumulative 2030 Plus Project (sec)
1	**20th Street** Telegraph approach to Harrison departure	EB	2:17	+ 0	+ 10	+ 10	+ 11	+ 11
2	**20th Street** Harrison approach to Telegraph departure	WB	1:40	(- 0)	(- 42)	(- 42)	(- 39)	(- 39)
3	**Broadway** 27th Street approach to 20th Street departure	SB	2:21	+ 5	+ 11	+ 11	+ 19	+ 19
4	**Broadway** 20th Street approach to 11th Street departure	SB	2:28	+ 0	+ 7	+ 8	+ 16	+ 17
5	**Broadway** 11th Street approach to 20th Street departure	NB	2:19	+ 0	+ 3	+ 7	+ 19	+ 24
6	**Broadway** 20th Street approach to 27th Street departure	NB	1:03	+ 3	+ 7	+ 8	+ 15	+ 15
7	**West Grand Avenue** Harrison approach to San Pablo departure	WB	2:49	+ 1	+ 20	+ 21	+ 65	+ 68
8	**Telegraph Avenue** 27th Street approach to 20th Street departure	SB	2:23	(- 1)	+ 3	+ 3	+ 1	+ 2

(sec) = Travel time in seconds.
Source: AECOM, 2009

Table IV.D-25: Transit Corridor Travel Times – PM Peak Hour

No.	Corridor	Direction	Scenario					
			Existing (sec)	Existing Plus Project (sec)	Cumulative 2015 (sec)	Cumulative 2015 Plus Project (sec)	Cumulative 2030 (sec)	Cumulative 2030 Plus Project (sec)
1	**20th Street** Telegraph approach to Harrison departure	EB	2:18	+ 0	(- 2)	(- 1)	+ 2	+ 2
2	**20th Street** Harrison approach to Telegraph departure	WB	3:29	+ 0	(- 75)	(- 75)	(- 65)	(- 65)
3	**Broadway** 27th Street approach to 20th Street departure	SB	2:18	+ 2	(- 2)	(- 1)	+ 9	+ 10
4	**Broadway** 20th Street approach to 11th Street departure	SB	2:58	+ 0	+ 45	+ 45	+ 163	+ 164
5	**Broadway** 11th Street approach to 20th Street departure	NB	3:33	+ 3	+ 80	+ 80	+ 204	+ 209
6	**Broadway** 20th Street approach to 27th Street departure	NB	1:45	+ 0	+ 45	+ 48	+ 112	+ 112
7	**West Grand Avenue** Harrison approach to San Pablo departure	WB	3:25	+ 5	+ 49	+ 57	+ 206	+ 230
8	**Telegraph Avenue** 27th Street approach to 20th Street departure	SB	2:03	(- 0)	(- 17)	(- 17)	(- 9)	(- 9)

(sec) = Travel time in seconds.
Source: AECOM, 2009

Given these considerations, the values in Table IV.D-24 and Table IV.D-25 should be viewed as the incremental increase in transit travel time from one analysis scenario to the next.

As shown in Table IV.D-24 and Table IV.D-25, the project would increase peak hour travel times along most corridors, mostly as a result of increases in intersection average delay. Some corridors would see average travel time decrease slightly between existing and future-year scenarios and between the no project and project scenarios, primarily as a result of geometry changes or better-performing movements at intersections. Travel time on westbound 20th Street, for example, is lower under Cumulative 2015 (No Project) Conditions than under Existing Conditions, partially as a result of reduced delays due to Original Measure DD modifications at this intersection.

The West Grand Avenue between San Pablo Avenue and Harrison Street corridor is expected to be most affected by the project. Under Cumulative Year 2030 plus Project Conditions, the project would cause an increase in corridor travel time of 24 seconds in the PM peak hour in the eastbound direction along Corridor #7. Other corridors such as Broadway would also experience substantial increases in travel time in the future, but the project's contribution to these increases would be less-than-significant.

g. Emergency Access. No mitigation measures would be required for emergency access, since the addition of project-generated traffic would not result in any significant impacts and the proposed project would not result in less than two emergency access routes for streets exceeding 600 feet in length.

h. Consistency with Adopted Policies, Plans or Programs Supporting Alternative Transportation. A discussion of applicable policies and plans is provided below. In general, the proposed project is consistent with these policies, plans and programs, and would not cause a significant impact by conflicting with adopted policies, plans, or programs supporting alternative transportation.

The City of Oakland General Plan LUTE states a strong preference for encouraging the use of alternative transportation modes, such as transit, bicycling, and walking. The Oakland 19th Street BART station is located approximately four blocks from the project site. The 19th Street BART/ Uptown Transit Center, which is served by several transit lines, is approximately three blocks from the project site. Bicycle parking areas would be provided within the project. The proximity of the project site to a variety of transportation modes would allow for easy access to transit options.

Additionally, the applicant would be required to submit a Transportation Demand Management (TDM) Plan as described in Standard Condition of Approval COA TRANS-1. Potential TDM measures may include, but are not limited to, transit ticket subsidies, awareness programs, and parking management strategies. It is expected that the TDM Plan will encourage increased use of alternative modes of transportation.

The City of Oakland Pedestrian Master Plan designates a Pedestrian Route Network that extends throughout Oakland and identifies common walking routes to pedestrian destinations. Lakeside Drive, Jackson Street, 17th Street, and Webster Street are all within close proximity to the project site and are within the Pedestrian Route Network. The project currently proposes a curb cut/drop-off area on 19th Street that would cause an encroachment onto public right-of-way that would be unsafe for pedestrians. However, with implementation of Mitigation Measure TRANS-5, a minimum sidewalk width would be provided which would remove the pedestrian safety issue. Beyond the issue of the curb cut and pedestrian safety, the proposed project is generally consistent with the Pedestrian Master Plan. The project would include pedestrian enhancing features such as landscaping, benches, lighting, and a patio that would connect the site to Snow Park. However, these objects shall not be placed on the sidewalk or in the path of travel so that pedestrians are obstructed. The project applicant shall also implement COA TRANS-1 and City staff is also recommending Recommendation TRANS-1 which will improve pedestrian access to the proposed project and in the vicinity.

The proposed project proposes no features which would be unsafe to bicycle travel and is generally consistent with the goals of the Bicycle Master Plan. The proposed project would not result in any changes to the existing bikeway network. In addition, the existing Class 2 and Class 3 bicycle facilities in the vicinity of the project have excess capacity to handle the increase in bicycles as a result of the project. City staff is also recommending Recommendation TRANS-2 which will improve bicycle access to the proposed project and in the vicinity.

i. Planning-Related Non-CEQA Considerations. The following section discusses transportation-related topics that are not considerations under CEQA but are evaluated to inform decision makers and the public about these issues.

(1) Transit Ridership. This discussion evaluates the project's potential to result in any of the following:

- Increase the average ridership on AC Transit lines by three (3) percent at bus stops where the average load factor in place would exceed 125 percent over a peak thirty minute period;
- Increase the peak hour average ridership on BART by three (3) percent where the passenger volume would exceed the standing capacity of BART trains; or,
- Increase the peak hour average ridership at a BART station by three (3) percent where average waiting time at faregates would exceed one minute.

The City of Oakland CEDA TSD has specific mode splits deemed appropriate for projects in Downtown Oakland and account for the extensive transit facilities available in the Downtown area. TSD requires an eighty-three (83) percent automobile and seventeen (17) percent transit mode split, used in conjunction with the ITE trip generation rates, which is typical for Downtown projects. For the purposes of achieving a more conservative analysis, a 100 percent automobile split was assumed for all traffic (intersection and roadway) analysis. Transit loading impacts resulting from project-generated trips were analyzed separately assuming a seventeen (17) percent transit mode split. The project weekday peak hour transit trips are presented in Table IV.D-26.

Table IV.D-26: Proposed Project Weekday Peak Hour Transit Trips

Destination	Transit Routes	Transit Trips	
		AM Peak Hour	PM Peak Hour
San Francisco	BART, NL	5	7
Hayward/Fremont	BART, 1, 1R, 40	5	6
West Oakland	BART, 13, 14, 19, NL	3	3
East Oakland	BART, 1, 1R, 11, 14, 18, 40, NL	4	5
North Oakland/Berkeley/Albany/ El Cerrito/Richmond	BART, 1, 1R, 15, 18, 51, 72, 72R, 72M, 88	7	8
Walnut Creek/Pleasant Hill	BART	3	3
Total		**27**	**32**

Source: AECOM, 2009.

As shown by Table IV.D-26, the project would generate approximately twenty-seven (27) transit trips in the weekday AM peak hour and thirty-two (32) transit trips in the weekday PM peak hour. Given that the project consists of primarily residential uses, these trips would almost exclusively be out-bound during the AM peak hour and inbound during the PM peak hour. The expected distribution of transit trips was developed based on the trip distributions derived from the ACCMA Model.

AC Transit Loading. As shown in Table IV.D-26, the project would result in minimal increases in ridership on transit lines in the vicinity of the project. These trips would generally be in the reverse commute direction for existing transit services, with the exception of San Francisco-bound trips (five trips in the AM peak hour and seven trips in the PM peak hour). Given the wide variety of transit options serving most destinations and the excess capacity available on most transit vehicles, it is unlikely that the project would result in a significant impact on the capacity of transit facilities or vehicles.

Given that the project is located on a minor street and there are no transit services which run on 19th Street (the location of the project driveway), it is not expected that the automobile traffic or parking

and loading operations generated by the project would result in a significant impact to transit activities.

BART Loading. BART trains on all lines serving 19th Street Station would see increases in transit ridership due to the project. A seventeen (17) percent transit mode-split was assumed to determine the volume of project-generated transit ridership. Based on this assumption, the project would add twenty-seven (27) AM peak hour and thirty-two (32) PM peak hour trips. Based on BART fleet statistics these trains currently operate at under 100 percent capacity utilization (i.e., the ratio of ridership to capacity). Capacity utilization over 100 percent would indicate exceedance of the standing capacity of the train. These trains could accommodate the project-generated riders without exceeding standing capacity. Project transit ridership is not expected to increase the average ridership on BART by three (3) percent where the passenger volume would exceed the standing capacity of BART trains.

BART Faregate Queuing. It is assumed that all project-generated BART ridership would use the faregate array leading to the station entrance at the southeast corner of the intersection of Broadway/ 19th Street as this is the most convenient faregate array for access to the project site. Based on the estimates of project BART ridership and observations of existing faregate operations, the project would not increase the peak hour average ridership at a BART station by three (3) percent where average waiting time at faregates would exceed one minute.

(2) 95th Percentile Queues. This discussion evaluates the project's potential to increase the 95th percentile queue by 25 feet or more at a study, signalized intersection. The 95th percentile queue is defined to be the queue length that has only a five percent probability of being exceeded during the analysis time period. It is a useful parameter for determining the appropriate length of turn pockets. Signalized intersections operating at unacceptable conditions were selected for evaluation as the project is expected to have its largest effect on 95th percentile queues at these intersections. In all cases, the storage capacity is taken as the distance to the nearest intersection, major driveway, or pedestrian crossing. The findings are summarized below and detailed analysis and tables are provided in Appendix B of this EIR.

Under Existing plus Project Conditions the project would not increase the 95th percentile queues by 25 feet or more at any of the project study intersections where storage capacity would be exceeded.

Under Cumulative Year 2015 plus Project Conditions, the project would increase the 95th percentile queues by approximately 25 feet or more at the Harrison Street/Grand Avenue intersection ((PM) NBR) where storage capacity would be exceeded.

Under Cumulative Year 2030 plus Project Conditions, the project would increase the 95th percentile queues by approximately 25 feet or more at the following locations where storage capacity would be exceeded:

1. Oak Street/5th Street/I-880 SB On-Ramp (PM) – EBLTR;
6. Oak Street/14th Street (PM) – NBLT, WBR;
12. Jackson Street/Lakeside Drive (PM) – SBT;
16. Harrison Street/Lakeside Drive (PM) – WBL; and,
17. Harrison Avenue/Grand Avenue (AM/PM) – EBR.

In cases where the project would increase 95th percentile queues by approximately 25 feet or more, further improvements to reduce 95th percentile queues would generally be infeasible, as these are typically geometrically-constrained locations or locations where further improvements would conflict with policies for other modes such as transit, pedestrians, or bicycles, or with ongoing planning efforts such as the AC Transit BRT, Franklin-Webster Bikeway Project, and the Harrison Street/ Oakland Avenue CBTP Study.

(3) Traffic Control. This discussion evaluates the need for additional traffic control devices (e.g., stop signs, street lighting, crosswalks, traffic calming devices) using the California MUTCD and applicable City standards. A Manual on Uniform Traffic Control Devices Peak Hour Vehicular Volume Warrant is intended to be applied where traffic conditions are such that for a minimum of 1 hour of an average day, the minor street traffic suffers undue delay when entering the major street. This warrant has two conditions but is intended to be treated as a single warrant. If either Condition A or B is satisfied, then the criteria for the Peak Hour Vehicular Volume Warrant is satisfied.

To meet the Peak Hour Vehicular Volume Warrant A, all of the following three conditions must be met for the same hour:

1. The total stopped time delay experienced by the traffic on the minor-street approach exceeds 5 vehicle-hours for a two-lane approach.
2. The volume on the same minor street approach equals or exceeds 150 vehicles per hour.
3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour.

The subject intersection does not meet the first condition, but does meet the second and third conditions.

To meet the Peak Hour Vehicular Volume Warrant B the total number of vehicles per hour on the major street and the higher-volume minor street approaches should meet the required minimum volumes. At least 1 hour is needed to satisfy this warrant.

An MUTCD Peak Hour Vehicular Volume Warrant analysis was conducted for Existing plus Project, Cumulative Year 2015 plus Project, and Cumulative Year 2030 plus Project Conditions at the following stop-controlled intersections:

- Within Downtown
    4. Oak Street/11th Street;
    11. Jackson Street/19th Street; and,
    13. Alice Street/19th Street.

According to the analysis, none of these intersections warrant signalized control. Appendix B contains all Peak Hour Vehicular Volume Warrants.

(4) Collision History. Historical collision data were examined at the study intersections for a recent period of up to six years and three months (October 1, 2002 to December 31, 2008). All collisions involving vehicles, bicycles, and/or pedestrians were noted. Each study intersection was also analyzed to determine its collision rate (collisions per one million entering vehicles). Rates were determined by comparing the number of collisions with the total volumes over the time span of the

collision history for each of the study intersections. Average daily traffic volumes are assumed to be ten times the PM peak hour volume. Table IV.D-27 provides a summary of the collision data for each study intersection.

As shown in Table IV.D-27, the intersection of Harrison/12th Street has the highest collision rate, at 1.56 collisions per million entering vehicles, while the average rate for study intersections is 0.41 collisions per million entering vehicles.

In addition, the primary causal factors of each incident were examined to determine the cause of the collisions. Table IV.D-28 outlines the results for each intersection. Collision summary data can be found in Appendix B.

Proposed Parking. The proposed parking supply is equivalent to the net new parking as a result of the project – in this case, a total of 357 parking spaces (242 standard spaces, 107 compact spaces, and 8 ADA-accessible spaces) would be provided on-site in a five-level below-grade structure, with access proposed via a driveway located on 19th Street between Jackson Street and Alice Street. The project would also provide 18 motorcycle spaces and 28 bicycle spaces for residents.

The project proposes tandem spacing in conjunction with Klaus parking machines and pallets. The parking pallets operate on rails that slide vehicles side-to-side to make tandem parking feasible without a valet present while the parking machines function by stacking one car on top of another with valet assistance. A valet service would be on-site to manage the flow of vehicles. Each level will have 30 parking machines capable of accommodating 60 standard-sized vehicles. Levels 4 and 5 will have 22 parking pallets each. In total, the current arrangement for the garage limits valet-accessed stacked parking to 120 vehicles and standard tandem parking to 8 spaces. The project parking supply is summarized in Table IV.D-29.

Table IV.D-27: Intersection Collision Summary

No.	Intersection	Involved with				Total	Inj.	Coll. Rate[b]
		Veh.	Bic.	Ped.	Other[a]			
1	Oak Street/5th Street/ I-880 SB On-Ramp	12	0	0	1	13	2	0.66
2	Oak Street/6th Street/ I-880 NB Off-Ramp	4	0	0	1	5	0	0.25
3	Oak Street/7th Street	7	0	0	1	8	4	0.25
4	Oak Street/11th Street	0	0	0	1	1	0	0.07
5	Oak Street/12th Street	12	0	3	2	17	11	0.83
6	Oak Street/14th Street	5	0	0	0	5	3	0.16
7	Madison Street/7th Street	13	0	0	0	13	5	0.34
8	Madison Street/11th Street	3	0	0	0	3	0	0.12
9	Madison Street/12th Street	5	0	1	0	6	4	0.25
10	Madison Street/14th Street	9	0	0	2	11	1	0.40
11	Jackson Street/19th Street	1	0	0	0	1	0	0.14
12	Jackson Street/ Lakeside Drive	4	0	0	0	4	1	0.19
13	Alice Street/19th Street	1	0	0	0	1	0	0.17
14	Harrison Street/12th Street	26	0	2	1	29	15	1.56
15	Harrison Street/20th Street	5	0	0	0	5	2	0.44
16	Harrison Street/ Lakeside Drive	8	0	0	0	8	3	0.29
17	Harrison Street/Grand Ave	8	1	0	0	9	5	0.15
18	20th Street/Broadway	5	0	0	1	6	2	0.28
19	Broadway/Grand Avenue	10	1	0	1	12	12	0.35
20	27th Street/Broadway	10	1	2	1	14	4	0.39
21	Telegraph Avenue/ West Grand Avenue	10	0	1	1	12	3	0.66
22	Telegraph Avenue/ 27th Street	12	2	1	1	16	2	0.42
23	Northgate Avenue/ West Grand Avenue	6	0	0	0	6	3	0.29
24, 25	Northgate Avenue/ 27th Street/I-980 EB/WB On-Ramps	38	1	0	2	41	26	0.71
26	San Pablo Avenue/ West Grand Avenue	21	0	4	0	25	14	0.48
Average Collision Rate								**0.41**

N/A = Data Not Available
[a] Includes collisions with objects and collisions marked as "Not Stated" "Fixed Object" or "Unknown."
[b] Incident rates in collisions per million vehicles entering the intersection.
Source: City of Oakland; AECOM, 2009

Table IV.D-28: Intersection Collision Causal Factors

No.	Intersection	Causal Factors				
		Traffic Signals and Signs	Unsafe Speed	Improper Turning	Auto R/W Violation	Unknown/ Other/ Not Stated
1	Oak Street/5th Street/ I-880 SB On-Ramp	69%	0%	15%	0%	15%
2	Oak Street/6th Street/ I-880 NB Off-Ramp	20%	20%	20%	0%	40%
3	Oak Street/7th Street	75%	13%	13%	0%	0%
4	Oak Street/11th Street	0%	0%	100%	0%	0%
5	Oak Street/12th Street	71%	6%	6%	0%	18%
6	Oak Street/14th Street	20%	20%	20%	20%	20%
7	Madison Street/7th Street	46%	23%	23%	0%	8%
8	Madison Street/11th Street	67%	0%	33%	0%	0%
9	Madison Street/12th Street	67%	0%	17%	0%	17%
10	Madison Street/14th Street	0%	18%	45%	0%	36%
11	Jackson Street/19th Street	0%	0%	0%	0%	100%
12	Jackson Street/Lakeside Drive	25%	0%	75%	0%	0%
13	Alice Street/19th Street	0%	0%	100%	0%	0%
14	Harrison Street/12th Street	76%	3%	10%	0%	10%
15	Harrison Street/20th Street	0%	20%	20%	0%	60%
16	Harrison Street/Lakeside Drive	25%	38%	13%	0%	25%
17	Harrison Street/Grand Ave	22%	44%	22%	0%	11%
18	20th Street/Broadway	33%	0%	0%	33%	33%
19	Broadway/Grand Avenue	50%	0%	0%	33%	17%
20	27th Street/Broadway	21%	14%	7%	36%	21%
21	Telegraph Avenue/ West Grand Avenue	17%	8%	25%	8%	42%
22	Telegraph Avenue/27th Street	25%	25%	19%	0%	31%
23	Northgate Avenue/ West Grand Avenue	0%	17%	33%	17%	33%
24, 25	Northgate Avenue/27th Street/ I-980 EB/WB On-Ramps	63%	15%	17%	0%	5%
26	San Pablo Avenue/ West Grand Avenue	8%	12%	8%	36%	36%

Source: City of Oakland, AECOM, 2009

Parking Supply and Demand Evaluation. This transportation analysis assesses the issue of parking primarily as a planning issue and in terms of its potential indirect effects(s) on air quality, noise and safety. Parking impacts are assessed according to the following language which was developed by the City of Oakland:

The Court of Appeal has held that parking is not part of the permanent physical environment, that parking conditions change over time as people change their travel patterns, and that unmet parking demand created by a project need not be considered a significant environmental impact under CEQA unless it would cause significant secondary effects.[8] Similarly, the December 2009 amendments to the State CEQA Guidelines (which were effective March 18, 2010) removed parking from the State's Environmental Checklist (Appendix G of the State CEQA Guidelines) as an environmental factor to be

[8] *San Franciscans Upholding the Downtown Plan v. the City and County of San Francisco (2002) 102* Cal.App.4th 656.

considered under CEQA. 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 due to drivers searching for parking spaces) would be minimized. As such, although not required by CEQA, parking conditions are evaluated in this document.

Table IV.D-29: Project Parking Supply

Facility	Type	Spaces
Below-grade structure	Standard	242
	Compact	107
	ADA-accessible	8
Total		**357**
Street-level	Motorcycle	18
	Bicycle	28
	Loading Berths	2
Total		**48**

Source: AECOM, 2009.

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.

Although not required by CEQA, 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 Redevelopment Agency owned/controlled parking and/or legally required off-street parking (non-open-to-the-public parking which is legally required).

This section evaluates whether the project's estimated parking demand 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.

A consideration when evaluating a project's effect on parking is the City of Oakland Municipal Code requirements for off-street parking. It should be noted that code requirements are not used to determine parking impacts; a comparison of parking supply versus estimated parking demand (discussed later) is used to determine potential supply/demand mismatches. An estimate of parking demand was obtained through use of the Institute of Transportation Engineers' Parking Generation (Third Edition). Table IV.D-30 summarizes vehicle parking code requirements and proposed parking spaces for the project. By this comparison, the project proposes approximately 18 spaces less than the code would require.

According to national Institute of Transportation Engineers (ITE) statistics, land uses similar in size and type to the proposed project would generate a parking demand of 543 spaces (average demand), 514 spaces (33rd percentile demand), or 303 spaces (fitted curve demand). Table IV.D-31 summarizes ITE vehicle parking demand for the proposed project.

Table IV.D-30: Parking Code Requirements

Land Use	Unit	Amount	Code	Spaces (Code)	Spaces (Proposed)
Multi-family Dwelling	DU	370	1 per DU	370	357
Café	SF	1,000	1 per 200 SF	5	0
Total				**375**	**357**

DU = Dwelling Unit
SF = Square Feet
Source: City of Oakland Municipal Code 17.116; AECOM, 2008.

Table IV.D-31: ITE Vehicle Parking Demand

Land Use/ ITE Code	Unit	Amt.	Average Demand		33rd Percentile Demand		Fitted Curve	Spaces (Proposed)
			Rate	Demand	Rate	Demand		
Condominiums (230)[a]	DU	370	1.46 per DU	540	1.38 per DU	511	300	357
Convenience Market (851)[b]	SF	1,000	3.40 per 1,000 SF	3	3.19 per 1,000 SF	3	3	0
Total				**543**		**514**	**303**	**357**

[a] For fitted curve, P = 96.8 Ln(X) - 272, where x = DU
[b] Fitted curve not appropriate for small-scale uses. Average demand used instead.
Source: ITE, *Parking Generation Manual, Third Edition*; AECOM, 2008.

As shown in Table IV.D-31, the proposed project would satisfy ITE parking demand estimates assuming fitted curve demand. Although it would fall short of the 33rd percentile demand, and City of Oakland *Municipal Code* requirements, it should be noted that neither CEQA nor the City of Oakland consider parking to be a significant adverse impact.

The TDM measures in the Project Description, Chapter III, and under COA TRANS-1 would help reduce vehicular travel and parking demand. Although estimating the exact effect of specific TDM measures is difficult due to the unique conditions of each location and project, research has shown that these measures can successfully increase transit mode share and reduce vehicular travel and parking demand.

On-site car sharing services have been proven to reduce vehicular travel. A study conducted by the Transportation Research Board[9] show that one car-share vehicle takes nearly fifteen (15) private cars off the road. City CarShare and Zipcar currently operate ten vehicles within five blocks of the project site.

[9] Transportation Research Board (TRB). *TCRP Report 108, Car-Sharing: Where and How It Succeeds,* 2005.

The inclusion of additional bicycle facilities above Municipal Code requirements, and the provision of unbundled parking and the use of parking management strategies are other effective means of reducing vehicular travel and parking demand.

In addition, given the project's location in the downtown area and with access to a dense transit network, it is expected that some residents would choose not to own a car. Self-selection (i.e., people who choose to live in a particular area may do so because they plan to use transit) is not uncommon for residents in areas with good transit service. The mixed-use nature of the project and surrounding uses in downtown Oakland also captures trips internally. Project trip distribution analysis indicates that ten (10) percent of project trips would be internal trips.

Based on the 2000 US Census data, and the TSD Guidelines, seventeen (17) percent of residents in the project's census tract commute to work or school by transit. The TDM measures would help to meet or exceed the mode split assumptions that were developed for this analysis. When taking into consideration all these effects, the code requirements may overestimate the parking demand after full build-out of the project. Given these considerations and the low occupancy rates of on-street and off-street parking facilities in the immediate vicinity of the project, the shortfall in the proposed parking supply when compared to code requirements is not expected to result in significant impacts to other parking facilities, either on- or off-street. In fact, provision of additional parking could encourage greater vehicle ownership rates, nullify the benefits of other TDM measures, and conflict with the City of Oakland's "Transit First" policy.

The Municipal Code has specific requirements for parking stall size. Table IV.D-32 summarizes the requirements for regular and compact spaces for the City of Oakland. The code limits the amount of compact spaces (defined as 16 feet deep and 7.5 feet wide) to thirty-three (33) percent of the total parking supply.

Table IV.D-32: Required Parking Stall Dimensions

Dimension	Required Dimensions (ft)	
	Regular Stalls	Compact Stalls
Depth	18	16
Width	8.5	7.5

Source: City of Oakland *Municipal Code* 17.116.200; AECOM, 2009.

Of the 357 proposed parking spaces, 107 would be compact, which is less than thirty-three (33) percent of the total and therefore meets code requirements. The design of the spaces must conform to the standards presented in Table IV.D-32, or the project sponsor shall obtain a variance. In addition to the above stall dimension requirements, parking driveways and maneuvering aisles must also meet City of Oakland Municipal Code requirements as detailed in Title 17, Section 116.210.

The proposed project's parking supply would not meet City of Oakland Municipal Code parking requirements, but would meet ITE parking demand assuming a fitted curve demand. Given the project's proposed TDM measures and its location in an area well-served by transit, no significant impacts are expected to parking facilities outside of the project (both on- and off-street). The project sponsor has requested a variance from CEDA for providing less than the number of code-required spaces.

(5) Loading Supply and Demand Evaluation. The design of the proposed spaces must meet the code requirements on loading berth dimensions (33 feet long, 12 feet wide, and fourteen feet high). If the project's proposed loading berth designs do not satisfy code requirements, the project sponsor shall obtain a variance.

Loading demand requirements are specified in Title 17, Section 116.140 of the City of Oakland Municipal Code. Based on the proposed land uses, the project would be required to provide three (3) loading berths for the residential uses, but would not be required to provide berths for the ground-floor retail space, which is less than 10,000 square feet. Although the design of the loading berths would meet code requirements for dimensions, since the project is proposing only two (2) berths located on 19th Street (off-site), the project sponsor shall obtain a variance from the Planning Code and will need to be approved by the City of Oakland's Finance Division and Parking Division. Mitigation Measure TRANS-5 would require that the curb cuts currently proposed on 19th Street to accommodate two loading areas be removed and redesigned such that they would not encroach onto public right-of-way and would maintain the existing sidewalk width.

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E. AIR QUALITY AND GREENHOUSE GAS EMISSIONS

This section describes the existing air quality setting for Emerald Views Residential Development project and has been prepared using methodologies and assumptions recommended in the CEQA Air Quality Guidelines of the Bay Area Air Quality Management District (BAAQMD).[1] In keeping with these guidelines, this chapter describes existing air quality, proposed construction air quality impacts, 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. This section also includes an assessment of the project's impacts related to climate change due to associated greenhouse gas (GHG) emissions.

1. Air Quality 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 also described.

a. Air Quality Standards, Regulatory Framework and Attainment Status. 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 (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), 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 O_3, CO, NO_2, SO_2, 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.

Ozone. Ozone (smog) is a pungent, colorless gas that is not emitted directly into the atmosphere, but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and nitrogen oxides (NO_x). Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and that can cause substantial damage to vegetation and other materials. Elevated ozone concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors such as the sick, elderly, and young children. Ozone levels peak during the late spring, summer and early fall months.

Carbon Monoxide. CO is formed by the incomplete combustion of fossil fuels, almost entirely from automobiles. High CO concentrations develop primarily during winter when periods of light winds combine with the formation of ground level temperature inversions (typically from the evening through early morning). It is a colorless, odorless gas that can cause dizziness, fatigue, and impairments to central nervous system functions. CO passes through the lungs into the bloodstream, where

[1] Bay Area Air Quality Management District, 2011. *CEQA Air Quality Guidelines*, May.

it interferes with the transfer of oxygen to body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia.

Nitrogen Oxides. Nitrogen dioxide (NO_2), a reddish-brown gas, and nitric oxide (NO), a colorless, odorless gas, are formed from fuel combustion under high temperature or pressure. These compounds are referred to as nitrogen oxides, or NO_x. NO_x is a primary component of the photochemical smog reaction. Nitrogen oxides also contribute to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition. NO_2 is an air quality pollutant of concern because it acts as a respiratory irritant, decreases lung function and may reduce resistance to infection.

Reactive Organic Gases. Reactive organic gases (ROG) are formed from combustion of fuels and evaporation of organic solvents. Consequently, ROG accumulates in the atmosphere much quicker during the winter when sunlight is limited and photochemical reactions are slower. ROG is an ozone precursor and a prime component of the photochemical reaction that forms ozone; however, ROG is not considered a criteria pollutant on its own.

Particulate Matter. Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles are those that are larger than 2.5 microns but smaller than 10 microns, or PM_{10}. $PM_{2.5}$ refers to fine suspended particulate matter with an aerodynamic diameter of 2.5 microns or less that is not readily filtered out by the lungs. Nitrates, sulfates, dust, and combustion particulates are major components of PM_{10} and $PM_{2.5}$. These small particles can be directly emitted into the atmosphere as by-products of fuel combustion, through abrasion, such as tire or brake lining wear, or through fugitive dust (wind or mechanical erosion of soil). They can also be formed in the atmosphere through chemical reactions. Particulates may transport carcinogens and other toxic compounds that adhere to the particle surfaces, and can enter the human body through the lungs.

Sulfur Dioxide. Sulfur dioxide (SO_2) is a colorless, irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO_2 levels in the region. SO_2 irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight.

Lead. Lead is a metal found in the natural environment, as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. In the past, mobile sources were the main contributor to ambient lead concentrations in the air. With the phase-out of lead in gasoline, other stationary sources, such as metal processing, are currently the primary source of lead emissions. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.

Health effects of these criteria pollutants are described in Table IV.E-1. California Ambient Air Quality Standards and National Ambient Air Quality Standards for the criteria air pollutants are listed in Table IV.E-2.

Table IV.E-1: Health Effects of Air Pollutants

Pollutant	Health Effects	Examples of Sources
Suspended Particulate Matter ($PM_{2.5}$ and PM_{10})	• 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 (O_3)	• 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 (NO_2)	• 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, 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 (U.S. EPA) administers the Clean Air Act (CAA). The California CAA is administered by the California Air Resources Board (ARB) 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.

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 O_3 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.

Table IV.E-2: Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [a]		Federal Standards [b]		
		Concentration [c]	Method [d]	Primary [c,e,i]	Secondary [c,f]	Method [g]
Ozone (O_3)	1-Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	No Federal Standard	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.07 ppm (137 µg/m^3)		0.075 ppm (147 µg/m^3)		
Respirable Particulate Matter (PM_{10})	24-Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		–		
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	No Separate State Standard		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	15 µg/m^3		
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Non-Dispersive 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 (NO_2)	Annual Arithmetic Mean	0.03 ppm (57 µg/m^3)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemilumin-escence
	1-Hour	0.18 ppm (339 µg/m^3)		0.100 ppm	None	
Lead	Rolling 3-Month Average	–	Atomic Absorption	0.15 µg/m^3	Same as Primary Standard	High-Volume Sampler and Atomic Absorption
	30-day average	1.5 µg/m^3		–		
	Calendar Quarter	–		1.5 µg/m^3		
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	–	Ultraviolet Fluorescence	0.030 ppm (80 µg/m^3)	–	Ultraviolet Flourescence; Spectrophoto-metry (Pararosaniline Method)
	24-Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (365 µg/m^3)	–	
	3-Hour	–		–	0.5 ppm (1300 µg/m^3)	
	1-Hour	0.25 ppm (655 µg/m^3)		75 ppb	–	
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			

Notes continued on next page.

[a] California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter—PM_{10}, $PM_{2.5}$, 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 PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For $PM_{2.5}$, 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 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] To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).

[i] On June 2, 2010, the U.S. EPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. EPA also proposed a new automated Federal Reference Method (FRM) using ultraviolet technology, but will retain the older pararosaniline methods until the new FRM have adequately permeated State monitoring networks. The EPA also revoked both the existing 24-hour SO_2 standard of 0.14 ppm and the annual primary SO_2 standard of 0.030 ppm, effective August 23, 2010. The secondary SO_2 standard was not revised at this time; however, the secondary standard is undergoing a separate review by EPA. Note that the new standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the new primary national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

[j] 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.

[k] National lead standard, rolling 3-month average: final rule signed October 15, 2008.

Source: California Air Resources Board (ARB), August 2010.

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, O_3, SO_2 and NO_2 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 U.S. EPA is responsible for enforcing the Federal CAA. The U.S. 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 U.S. 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 ARB, 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 ARB regulates mobile air pollution sources, such as motor vehicles. Automobiles sold in California must meet the stricter emission standards established by the ARB. 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 ARB established passenger vehicle fuel specifications, which became effective on March 1996. The ARB 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.

Air Quality and Land Use Handbook. The ARB 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 ARB 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 these 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.

[2] California Air Resources Board, 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.* April.

(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 ARB 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 federal and State ambient air quality standards are attained and maintained in the Bay Area. The BAAQMD is also 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. Table IV.E-3 provides a summary of the attainment status for the San Francisco Bay Area with respect to national and State ambient air quality standards.

The BAAQMD prepares plans to attain ambient air quality standards in the San Francisco Bay Area Air Basin. The BAAQMD prepares the Clean Air Plan (CAP) in coordination with the Metropolitan Transportation Commission and the Association of Bay Area Governments (ABAG). With respect to applicable air quality plans, the BAAQMD has adopted the *2010 Clean Air Plan* to address multiple pollutants in a single integrated plan. The purpose of the *2010 Clean Air Plan* is to:

1. Update the *Bay Area 2005 Ozone Strategy* in accordance with the requirements of the California Clean Air Act to implement "all feasible measures" to reduce ozone.
2. Provide control strategies to reduce ozone, particulate matter (PM, air toxics, and greenhouse gases in a single plan;
3. Review progress in improving air quality in recent years; and
4. Establish emission control measures to be adopted or implemented in the 2010 to 2012 timeframe.

On June 2, 2010 the BAAQMD Board of Directors adopted *Thresholds of Significance For Use In Determining the Significance of Projects' Environmental Effects Under the California Environmental Quality Act (Thresholds of Significance)*. It is now the policy of the Bay Area Air Quality Management District that projects that do not comply with the June 2010 CEQA Thresholds of Significance will normally be determined to have a significant effect on the environment for purposes of CEQA, and projects that comply with the thresholds normally will be determined to have a less-than-significant effect on the environment for purposes of CEQA.

The 2010 CEQA Guidelines are intended to be viewed as minimum considerations for analyzing air quality impacts. Lead agencies are encouraged to tailor air quality impact analyses to meet the needs of the local community and may conduct refined analyses that utilize more sophisticated models, more precise input data, innovative mitigation measures, and/or other features. The Guidelines contain:

- screening criteria to determine projects may have potentially significant impacts requiring detailed analysis, and
- assessment methods and mitigation measures for operational-related, local community risk and hazards, local carbon monoxide (CO), odors, construction-related, and plan-level impacts."

(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;

- Policy CO-12.1: Promote land use patterns and densities which help improve regional air quality conditions. The City supports efforts of the responsible public agencies to reduce air pollution.
- Policy CO-12.4: Require that development projects be designed in a manner which reduces potential adverse air quality impacts.
- Policy CO-12.5: Use of best available control technology. Require new industry to use best available control technology to remove pollutants, including filtering, washing, or electrostatic treatment of emissions.
- Policy CO-12.6: Control of Dust Emissions. Require construction, demolition, and grading practices which minimize dust emissions.

City of Oakland Municipal Code. Pursuant to the City of Oakland Municipal Code, Title 15 Buildings and Construction, Chapter 15.36 Demolition Permits, 15.36.100 Dust Control Measures: 'Best Management Practices' shall be used throughout all phases of work, including suspension of work, to alleviate or prevent fugitive dust nuisance and the discharge of smoke or any other air contaminants into the atmosphere in such quantity as will violate any city or regional air pollution control rules, regulations, ordinances, or statutes. Water or dust palliatives or combinations of both shall be applied continuously and in sufficient quantity during the performance of work and at other times as required. Dust nuisance shall also be abated by cleaning and sweeping or other means as necessary. A dust control plan may be required as condition of permit issuance or at other times as may be deemed necessary to assure compliance with this section. Failure to control effectively or abate fugitive dust nuisance or the discharge of smoke or any other air contaminants into the atmosphere may result in suspension or revocation of the permit, in addition to any other applicable enforcement actions or remedies.[3] (Ord. 12152 § 1, 1999).

[3] Oakland, City of, 2008. Ord. 12152 § 1, 1999.

Table IV.E-3: Bay Area Attainment Status

Pollutant	Averaging Time	California Standards [a]		National Standards [b]	
		Concentration	Attainment Status	Concentration [c]	Attainment Status
Ozone (O_3)	8-Hour	0.07 ppm (137 µg/m^3)	Nonattainment [h]	0.075 ppm	Nonattainment [d]
	1-Hour	0.09 ppm (180 µg/m^3)	Nonattainment	Not Applicable	Not Applicable [c]
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	Attainment	9.0 ppm (10 mg/m^3)	Attainment [f]
	1-Hour	20 ppm (23 mg/m^3)	Attainment	35 ppm (40 mg/m^3)	Attainment
Nitrogen Dioxide (NO_2)	Annual Mean	0.030 ppm (56 mg/m^3)	Attainment	0.053 ppm (100 µg/m^3)	Attainment
	1-Hour	0.18 ppm (338 µg/m^3)	Attainment	0.100 ppm	Unclassified
Suspended Particulate Matter (PM_{10})	Annual Mean	20 µg/m^3	Nonattainment [g]		
	24-Hour	50 µg/m^3	Nonattainment	150 µg/m^3	Unclassified
Suspended Particulate Matter ($PM_{2.5}$)	Annual Mean	12 µg/m^3	Nonattainment [g]	15 µg/m^3	Attainment
	24-Hour	Not Applicable	Not Applicable	35 µg/m^3 [i]	Nonattainment
Sulfur Dioxide (SO_2)	Annual Mean	Not Applicable	Not Applicable	0.03 ppm (80 µg/m^3)	Attainment
	24-Hour	0.04 ppm (105 µg/m^3)	Attainment	0.14 ppm (365 µg/m^3)	Attainment
	1-Hour	0.25 ppm (655 µg/m^3)	Attainment	Not Applicable	Not Applicable

Notes:

Lead (Pb) is not listed in the above table because it has been in attainment since the 1980s.
ppm = parts per million
mg/m^3 = milligrams per cubic meter
µg/m^3 = micrograms per cubic meter

[a] California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter - PM_{10}, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e., all standards except for lead and the PM_{10} annual standard), then some measurements may be excluded. In particular, measurements are excluded that ARB determines would occur less than once per year on the average. The Lake Tahoe CO standard is 6.0 ppm, a level one-half the national standard and two-thirds the state standard.

[b] National standards other than for ozone, particulates and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the 4th highest daily concentrations is 0.075 ppm (75 ppb) or less. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 µg/m^3. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of 98th percentiles is less than 35 µg/m^3. Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM_{10} is met if the 3-year average falls below the standard at every site. The annual $PM_{2.5}$ standard is met if the 3-year average of annual averages spatially-averaged across officially designed clusters of sites falls below the standard.

[c] National air quality standards are set by EPA at levels determined to be protective of public health with an adequate margin of safety.

[d] In June 2004, the Bay Area was designated as a marginal nonattainment area of the national 8-hour ozone standard. EPA lowered the national 8-hour ozone standard from 0.80 to 0.75 ppm (i.e., 75 ppb) effective May 27, 2008. EPA will issue final designations based upon the new 0.75 ppm ozone standard by March 2010.

Table notes continued on next page.

[e] The national 1-hour ozone standard was revoked by U.S. EPA on June 15, 2005.
[f] In April 1998, the Bay Area was redesignated to attainment for the national 8-hour carbon monoxide standard.
[g] In June 2002, ARB established new annual standards for $PM_{2.5}$ and PM_{10}.
[h] The 8-hour CA ozone standard was approved by the Air Resources Board on April 28, 2005 and became effective on May 17, 2006.
[i] EPA lowered the 24-hour $PM_{2.5}$ standard from 65 $\mu g/m^3$ to 35 $\mu g/m^3$ in 2006. EPA issued attainment status designations for the 35 $\mu g/m^3$ standard on December 22, 2008. EPA has designated the Bay Area as nonattainment for the 35 $\mu g/m^3$ $PM_{2.5}$ standard. The EPA designation will be effective 90 days after publication of the regulation in the Federal Register. President Obama has ordered a freeze on all pending federal rules; therefore, the effective date of the designation is unknown at this time.

Source: Bay Area Air Quality Management District, 2010. Bay Area Attainment Status.

City of Oakland's Standard Conditions of Approval. The City's Standard Conditions of Approval (COA) relevant to this impact topic are listed below for reference. The Conditions of Approval would be adopted as requirements of the proposed project if the project is approved by the City.

COA AIR-1: Construction-Related Air Pollution Controls (Dust and Equipment Emissions). *Ongoing through demolition, grading, and/or construction.* During construction, the project applicant shall require the construction contractor to implement all of the following applicable measures recommended by the Bay Area Air Quality Management District (BAAQMD):

a) Water all exposed surfaces of active construction areas at least twice daily (using reclaimed water if possible). Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever possible.

b) Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).

c) All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

d) Pave all roadways, driveways, sidewalks, etc. as soon as feasible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.

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

f) Limit vehicle speeds on unpaved roads to 15 miles per hour.

g) Idling times shall be minimized either by shutting equipment off when not is use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485, of the California Code of Regulations. Clear signage to this effect shall be provided for construction workers at all access points.

h) All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

i) Post a publicly visible sign that includes the contractor's name and telephone number to contact regarding dust complaints. When contacted, the contractor shall respond and take corrective action within 48 hours. The telephone numbers of contacts at the City and BAAQMD shall also be visible. This information may be posted on other required on-site signage.

j) All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.

k) All excavation, grading, and demolition activities shall be suspended when average wind speeds exceed 20 mph.

l) Install sandbags or other erosion control measures to prevent silt runoff to public roadways.

m) Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for one month or more).

n) Designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holidays and weekend periods when work may not be in progress.

o) Install appropriate wind breaks (e.g., trees, fences) on the windward side(s) of actively disturbed areas of the construction site to minimize wind blown dust. Wind breaks must have a maximum 50 percent air porosity.

p) Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.

q) The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.

r) All trucks and equipment, including tires, shall be washed off prior to leaving the site.

s) Site accesses to a distance of 100 feet from the paved road shall be treated with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel.

t) Minimize the idling time of diesel-powered construction equipment to two minutes.

u) The project applicant shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NO_x reduction and 45 percent particulate matter (PM) reduction compared to the most recent California Air Resources Board (CARB) fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as they become available.

v) Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., BAAQMD Regulation 8, Rule 3: Architectural Coatings).

w) All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control Technology for emission reductions of NO_x and PM.

x) Off-road heavy diesel engines shall meet the CARB's most recent certification standard.

COA AIR-2 (same as COA HAZ-2): Asbestos Removal in Structures. *Prior to issuance of a demolition permit.* If asbestos-containing materials (ACM) are found to be present in building materials to be removed, demolition and disposal, the project applicant shall submit specifications signed by a certified asbestos consultant for the removal, encapsulation, or enclosure of the identified ACM in accordance with all applicable laws and regulations, including but not necessarily limited to: California Code of Regulations, Title 8; Business and Professions Code; Division 3; California Health & Safety Code 25915-25919.7; and Bay Area Air Quality Management District, Regulation 11, Rule 2, as may be amended.

b. Existing Climate and Air Quality. The following discussion provides brief summaries of regional air quality, and 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.

The latest adopted air quality plan, the *Bay Area 2005 Ozone Strategy* and on-going development of the *2009 Clean Air Plan,* are developed in order to bring the region into compliance with State and federal air quality standards. Ozone, in particular, results from the reaction of ROG and NO_x in the atmosphere. 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 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.

In this area, marine air traveling through the Golden Gate, as well as across San Francisco and through the San Bruno Gap, is a dominant weather factor. The Oakland/Berkeley hills cause the westerly flow of air to split off to the north and south of Oakland, which causes diminished wind speeds. The prevailing winds for most of this subregion are from the west. At the northern end, near Richmond, prevailing winds are from the south-southwest.

Temperatures in this subregion have a narrow range due to the proximity of the moderating marine air. The 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 2007 to 2009 for the Oakland 9925 International Boulevard monitoring station are shown in Table IV.E-4. Where data were not available at this location, the closest monitoring stations to the project site for which data were available were used. Ambient air quality monitoring stations indicate that air quality in the project area has generally been good.

Table IV.E-4: Ambient Air Quality Data from the Oakland – 9925 International Boulevard Monitoring Station

Pollutant	Standard	2007	2008	2009
Carbon Monoxide (CO)				
Maximum 1-hour concentration (ppm)		2.9	2.9	ND
Number of days exceeded:	State: > 20 ppm	0	0	ND
	Federal: > 35 ppm	0	0	ND
Maximum 8-hour concentration (ppm)		1.4	1.6	2.0
Number of days exceeded:	State: > 9 ppm	0	0	0
	Federal: > 9 ppm	0	0	0
Ozone (O_3)				
Maximum 1-hour concentration (ppm)		0.040	0.086	0.092
Number of days exceeded:	State: > 0.09 ppm	0	0	0
Maximum 8-hour concentration (ppm)		0.036	0.064	0.062
Number of days exceeded:	State: > 0.07 ppm	0	0	0
	Federal: > 0.08 ppm	0	0	0
Coarse Particulates (PM_{10})[a]				
Maximum 24-hour concentration (µg/m^3)		57.5	37.5	ND
Number of days exceeded:	State: > 50 µg/m^3	1	0	ND
	Federal: > 150 µg/m^3	0	0	ND
Annual arithmetic average concentration (µg/m^3)		19	19	ND
Exceeded for the year:	State: > 20 µg/m^3	No	No	ND
	Federal: > 50 µg/m^3	No	No	ND
Fine Particulates ($PM_{2.5}$)				
Maximum 24-hour concentration (µg/m^3)		22.8[c]	30.1	36.3
Number of days exceeded:	Federal: > 35 µg/m^3	0	0	1
Annual arithmetic average concentration (µg/m^3)		ND	9.4	9.2
Exceeded for the year:	State: > 12 µg/m^3	ND	No	No
	Federal: > 15 µg/m^3	ND	No	No
Nitrogen Dioxide (NO_2)				
Maximum 1-hour concentration (ppm)		0.059	0.070	0.062
Number of days exceeded:	State: > 0.25 ppm	0	0	0
Annual arithmetic average concentration (ppm)		ND	0.015	0.014
Exceeded for the year:	Federal: > 0.053 ppm	ND	No	No

Table IV. E-4 *Continued*

Pollutant	Standard	2007	2008	2009
Sulfur Dioxide (SO_2)				
Maximum 1-hour concentration (ppm)		0.005	0.002	0.002
Number of days exceeded:	State: > 0.25 ppm	0	0	0
Maximum 3-hour concentration (ppm)		ND	0.12	0.12
Number of days exceeded:	Federal: > 0.5 ppm	ND	0	0
Maximum 24-hour concentration (ppm)		ND	0.004	0.004
Number of days exceeded:	State: > 0.04 ppm	ND	0	0
	Federal: > 0.14 ppm	ND	0	0
Annual arithmetic average concentration (ppm)		ND	0.001	0.001
Exceeded for the year:	Federal: >0.030 ppm	ND	0	0

[a] Monitoring results taken from the Fremont-Chapel Way station located on Chapel Way
ppm = parts per million
$\mu g/m^3$ = micrograms per cubic meter
ND = No data. There were insufficient (or no) data to determine the value.
Source: ARB and EPA Web sites.

As indicated in the monitoring results, one violation of State PM_{10} standard was recorded in 2007; no violations were recorded in 2008 or 2009. No violation of federal PM_{10} standard was recorded during the three year period. The federal 24-hour standard for $PM_{2.5}$ was exceeded in 2009. The State 1-hour and the federal 8-hour ozone standards have not been exceeded within the past three years at these monitoring stations. Both State and federal standards for CO, NO_2, and SO_2 were also not exceeded in this area during the three-year period.

c. Air Quality Issues. Key air quality issues in the Bay Area – CO hotspots, construction-related emissions, operational emissions, odors, 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. Idling freight trains are also a source of CO emissions. 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) Construction-Related Emissions. Fugitive dust emissions are generally associated with 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 California Air Resources Board estimates that 64 percent of construction-related total suspended particulate emissions occur in the form of PM_{10}.

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 PM_{10} emissions from construction.

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.

(3) Operational 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.

(4) Odors. Odors are also an important element of local air quality conditions. Specific activities allowed within each of the major general plan land use categories 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) Toxic Air Contaminants. Toxic Air Contaminants (TACs) are another group of pollutants of concern. TACs are not criteria pollutants, but are associated with health-related effects and have appreciable concentrations within the Bay Area. TACs are injurious in small quantities and are regulated by the EPA and the ARB. Some examples of TACs include: benzene, butadiene, formaldehyde, and hydrogen sulfide. In 1998, ARB identified particulate matter from diesel-fueled engines as a toxic air contaminant. ARB has completed a risk management process that identified potential cancer risks for a range of activities using diesel-fueled engines.[4] High volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic (distribution centers, truck stops) were identified as having posing the highest risk to adjacent receptors. Other facilities associated with increased risk include warehouse distribution centers, large retail or industrial facilities, high volume transit centers or schools with a high volume of bus traffic. Areas surrounding train stations also have a high level of diesel exhaust emissions due to idling of locomotive engines.

Health risks from TACs are a function of both concentration and duration of exposure. 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.

[4] California Air Resources Board, 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October.

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.[5] 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.[6]

2. Air Quality Impacts and Mitigation Measures

This section evaluates potential impacts to air quality resulting from implementation of the proposed 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 identifies mitigation measures, as appropriate.

a. Criteria of Significance. Implementation of the project would have a significant impact on air quality if it would:

- During project construction result in average daily emissions of 54 pounds per day of ROG, NO_x, or $PM_{2.5}$ or 82 pounds per day of PM_{10};
- During project operation result in average daily emissions of 54 pounds per day of ROG, NO_x, or $PM_{2.5}$ or 82 pounds per day of PM_{10}; or result in maximum annual emissions of 10 tons per year of ROG, NO_x, or $PM_{2.5}$ or 15 tons per year of PM_{10};
- Contribute to CO concentrations exceeding the CAAQS of nine parts per million (ppm) averaged over eight hours and 20 ppm for one hour;[7]
- During either project operation or project construction expose persons by siting a new source or a new receptor to substantial levels of Toxic Air Contaminants (TACs) resulting in (a) a cancer risk level greater than 10 in one million, (b) a non-cancer risk (chronic or acute) hazard index greater than 1.0, or (c) an increase of greater than 0.3 micrograms per cubic meter of annual average $PM_{2.5}$ or;[8]
- Frequently and for a substantial duration, create or expose sensitive receptors to substantial objectionable odors affecting a substantial number of people [NOTE: For this threshold sensitive receptors include residential uses, schools, daycare centers, nursing homes, and medical centers.].

[5] Bay Area Air Quality Management District, 2007. *Toxic Air Contaminant Control Program Annual Report 2003 Volume 1*. August.

[6] Ibid.

[7] Pursuant to BAAQMD Guidelines, localized CO concentrations should be estimated for projects in which (1) project-generated traffic would conflict with an applicable congestion management program established by the county congestion management agency or (2) project-generated traffic would increase traffic volumes at affected intersections to more than 44,000 vehicles per hour (or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited, such as tunnels, parking garages, bridge underpasses, natural or urban street canyons, and below-grade roadways.

[8] Pursuant to BAAQMD Guidelines, when siting new TAC sources consider receptors located within 1,000 feet, and when siting new receptors consider TAC sources located within 1,000 feet including, but not limited to, stationary sources, freeways, major roadways (10,000 or greater vehicles per day), truck distribution centers, ports, and rail lines. The cumulative analysis should consider the combined risk from all existing and reasonably foreseeable future sources. For this threshold receptors include residential uses, schools, parks, daycare centers, nursing homes, and medical centers.

A cumulative impact would occur if conditions would:

- During either project operation or project construction expose persons by siting a new source or a new receptor to substantial levels of TACs resulting in (a) a cancer risk level greater than 100 in a million, (b) a non-cancer risk (chronic or acute) hazard index greater than 10.0, or (c) an increase of greater than 0.8 micrograms per cubic meter of annual average $PM_{2.5}$.

b. Less-Than-Significant Impacts. This section discusses less-than-significant air quality impacts.

(1) Operational Emissions – Regional Emissions Analysis. Long-term air emission impacts would be those associated with changes in permanent usage of the project site, primarily mobile source emissions that would result from vehicle trips associated with the proposed project. The proposed project is expected to generate approximately 159 vehicle trips during the AM peak hour and 187 trips during the PM peak hour, or approximately 1,870 trips per day. Area sources, such as natural gas heaters, landscape equipment, and use of consumer products, would also result in pollutant emissions.

Based on the BAAQMD screening criteria, high-rise apartment projects that contain fewer than 510 dwelling units would not result in the generation of operational-related criteria air pollutants and/or precursors that exceed the thresholds of significance. As this project will include approximately 370 dwelling units, the impacts to air quality from criteria air pollutant and precursor emissions would be less than significant. However, to confirm pollutant emissions associated with the proposed project, the Urban Emissions 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 mobile and area source emissions. URBEMIS output sheets are included in Appendix C of this report.

Table IV.E-5: Project Regional Emissions in Pounds Per Day

	Reactive Organic Gases	Nitrogen Oxides	PM_{10}	$PM_{2.5}$
Area Source Emissions	20.9	4.9	0.2	0.2
Mobile Source Emissions	11.7	18.5	27.3	5.2
Total Emissions	32.6	23.3	27.5	5.4
Proposed BAAQMD Significance Threshold	**54**	**54**	**82**	**54**
Exceed?	**No**	**No**	**No**	**No**

Source: LSA Associates, Inc., 2010.

The daily emissions associated with project operational trip generation and area sources are identified in Table IV.E-5 for ROG, NO_x, PM_{10}, and $PM_{2.5}$. The proposed project emissions shown in Table IV.E-5 would not exceed the thresholds of significance for ROG, NO_x, PM_{10}, and $PM_{2.5}$. The emissions shown in Table IV.E-5 do not exceed either the BAAQMD thresholds of significance; therefore, the proposed project would not have a significant effect on regional air quality.

(2) Odor Emissions. The proposed project includes residential land uses which are not expected to generate objectionable odors and would not be located in an area with existing objectionable odors. Odors associated with food services in the proposed café would need to comply with local ordinances regarding proper venting of cooking areas. The project would not frequently create substantial objectionable odors affecting a substantial number of people. Therefore, this potential impact would be less than significant.

(3) Operational Emissions – CO Concentrations. Vehicular traffic associated with the proposed project would emit carbon monoxide (CO) into the air along roadway segments and near intersections. 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.

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 2.3 ppm for the 8-hour period measured at the 822 Alice St., Oakland, Oakland, CA AQ Station in Alameda County) were used as the background CO concentrations. Emission factors for study scenarios were obtained from the latest confirmed ARB data.

Table IV.E-6 lists the 1-hour and 8-hour CO concentrations for the existing (2008) conditions at twenty intersections in the project study area. Table IV.E-7 shows that all 1-hour and 8-hour CO concentrations for existing conditions are below the federal and State CO standards.

Table IV.E-7 lists the concentrations for the Near-Term Year 2015 Baseline With and Without the Proposed Project scenarios. Table IV.E-8 lists the concentrations for the Cumulative Year 2030 Baseline With and Without the Proposed Project scenarios. Modeled input values are included in Appendix C.

Table IV.E-7 shows that all 1-hour and 8-hour CO concentrations with the near-term (2015) analysis both with and without the project would be below the federal and State CO standards. The 1-hour CO levels range from 3.5 ppm to 4.9 ppm, much lower than the State CO standard of 20 ppm. The 8-hour CO levels range from 2.4 ppm to 3.4 ppm, also much lower then the State and federal standard of 9 ppm.

Table IV.E-8 shows that the cumulative (2030) analysis both with and without the project would also be below the federal and State CO standards. The 1-hour CO levels range from 3.3 ppm to 4.1 ppm, much lower than the State CO standard of 20 ppm. The 8-hour CO levels range from 2.3 ppm to 2.9 ppm, also much lower then the State and federal standard of 9 ppm. Modeled input values are included in Appendix C.

Results indicate that CO concentrations would increase by less than 0.1 ppm with implementation of the proposed project. Implementation of the proposed project would not cause an exceedance of State or federal CO standards. Therefore, the proposed project would not lead to significant CO impacts, nor would the proposed project, in combination with other cumulative development, lead to CO concentrations that exceed federal or State standards.

Table IV.E-6: Existing (2008) CO Concentrations

Intersection	Receptor Distance to Road Centerline (Meters)	Existing 1-Hour CO Concentration (ppm)	Existing 8-Hour CO Concentration (ppm)	Exceeds State Standards	
				1-Hr	8-Hr
Oak Street and 11th Street	17	4.1	2.9	No	No
	17	4.1	2.9	No	No
	17	4.0	2.8	No	No
	17	4.0	2.8	No	No
Oak Street and 12th Street	21	4.4	3.1	No	No
	21	4.3	3.0	No	No
	20	4.2	2.9	No	No
	7	4.2	2.9	No	No
Oak Street and 14th Street	21	4.7	3.3	No	No
	13	4.7	3.3	No	No
	13	4.6	3.2	No	No
	12	4.5	3.1	No	No
Madison Street and 7th Street	21	5.2	3.6	No	No
	20	5.0	3.5	No	No
	16	4.9	3.4	No	No
	16	4.9	3.4	No	No
Madison Street and 11th Street	21	4.4	3.1	No	No
	20	4.3	3.0	No	No
	16	4.2	2.9	No	No
	16	4.2	2.9	No	No
Madison Street and 12th Street	20	4.3	3.0	No	No
	20	4.3	3.0	No	No
	16	4.1	2.9	No	No
	7	4.1	2.9	No	No
Madison Street and 14th Street	18	4.4	3.1	No	No
	17	4.4	3.1	No	No
	13	4.4	3.1	No	No
	13	4.3	3.0	No	No
Jackson Street and 19th Street	14	3.7	2.6	No	No
	14	3.7	2.6	No	No
	10	3.6	2.5	No	No
	10	3.6	2.5	No	No
Jackson Street and Lakeside Drive	13	4.4	3.1	No	No
	13	4.3	3.0	No	No
	13	4.3	3.0	No	No
	13	4.2	2.9	No	No
Alice Street and 19th Street	13	3.6	2.5	No	No
	13	3.6	2.5	No	No
	13	3.6	2.5	No	No
	7	3.6	2.5	No	No
Harrison Street and 12th Street	21	4.2	2.9	No	No
	21	4.0	2.8	No	No
	13	4.0	2.8	No	No
	13	4.0	2.8	No	No

Table IV.E-6 *Continued*

Intersection	Receptor Distance to Road Centerline (Meters)	Existing 1-Hour CO Concentration (ppm)	Existing 8-Hour CO Concentration (ppm)	Exceeds State Standards	
				1-Hr	8-Hr
Harrison Street and 20th Street	21	4.2	2.9	No	No
	17	4.2	2.9	No	No
	14	4.2	2.9	No	No
	14	4.1	2.9	No	No
Harrison Street and Lakeside Drive	17	5.3	3.7	No	No
	17	5.1	3.6	No	No
	14	5.0	3.5	No	No
	14	4.8	3.4	No	No
Harrison Street and Grand Avenue	21	5.8	4.1	No	No
	21	5.6	3.9	No	No
	20	5.5	3.8	No	No
	19	5.5	3.8	No	No
Broadway and 20th Street	14	4.5	3.1	No	No
	14	4.4	3.1	No	No
	14	4.3	3.0	No	No
	14	4.3	3.0	No	No
Broadway and Grand Avenue	17	4.7	3.3	No	No
	17	4.6	3.2	No	No
	17	4.5	3.1	No	No
	15	4.5	3.1	No	No
Broadway and 27th Street	18	4.8	3.4	No	No
	17	4.8	3.4	No	No
	16	4.8	3.4	No	No
	15	4.8	3.4	No	No
Telegraph Avenue and Grand Avenue	17	4.8	3.4	No	No
	17	4.7	3.3	No	No
	17	4.7	3.3	No	No
	17	4.6	3.2	No	No
Telegraph Avenue and 27th Street	17	4.7	3.3	No	No
	17	4.7	3.3	No	No
	17	4.6	3.2	No	No
	17	4.5	3.1	No	No
Northgate Avenue and West Grand Avenue	14	4.8	3.4	No	No
	14	4.7	3.3	No	No
	14	4.6	3.2	No	No
	12	4.5	3.1	No	No

Source: LSA Associates, Inc., 2009.

Table IV.E-7: Near-Term (2015) Without and With the Project CO Concentrations

Intersection	Receptor Distance to Road Centerline (Meters)	Project- Related Increase 1-hr/8-hr (ppm)	Without/With Project 1-Hour CO Concentration (ppm)	Without/With Project 8-Hour CO Concentration (ppm)	Exceeds State Standards	
					1-Hr	8-Hr
Oak Street and 11th Street	17 / 17	0.0 / 0.0	3.8 / 3.8	2.7 / 2.7	No	No
	17 / 17	0.0 / 0.0	3.8 / 3.8	2.7 / 2.7	No	No
	17 / 17	0.1 / 0.1	3.7 / 3.8	2.6 / 2.7	No	No
	7 / 7	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
Oak Street and 12th Street	21 / 21	0.0 / 0.0	4.0 / 4.0	2.8 / 2.8	No	No
	20 / 20	0.0 / 0.0	4.0 / 4.0	2.8 / 2.8	No	No
	20 / 20	0.0 / 0.0	3.9 / 3.9	2.7 / 2.7	No	No
	7 / 7	0.0 / 0.0	3.9 / 3.9	2.7 / 2.7	No	No
Oak Street and 14th Street	21 / 21	0.0 / 0.0	4.2 / 4.2	2.9 / 2.9	No	No
	13 / 13	0.0 / 0.0	4.2 / 4.2	2.9 / 2.9	No	No
	13 / 13	0.0 / 0.0	4.1 / 4.1	2.9 / 2.9	No	No
	12 / 12	0.0 / 0.0	4.1 / 4.1	2.9 / 2.9	No	No
Madison Street and 7th Street	21 / 21	0.0 / 0.0	4.6 / 4.6	3.2 / 3.2	No	No
	20 / 20	0.0 / 0.0	4.4 / 4.4	3.1 / 3.1	No	No
	16 / 16	0.0 / 0.0	4.4 / 4.4	3.1 / 3.1	No	No
	16 / 16	0.0 / 0.0	4.3 / 4.3	3.0 / 3.0	No	No
Madison Street and 11th Street	21 / 21	0.0 / 0.0	4.0 / 4.0	2.8 / 2.8	No	No
	20 / 20	0.0 / 0.0	3.9 / 3.9	2.7 / 2.7	No	No
	16 / 16	0.0 / 0.0	3.9 / 3.9	2.7 / 2.7	No	No
	16 / 16	0.0 / 0.0	3.9 / 3.9	2.7 / 2.7	No	No
Madison Street and 12th Street	20 / 20	0.1 / 0.1	3.9 / 4.0	2.7 / 2.8	No	No
	20 / 20	0.0 / 0.0	3.9 / 3.9	2.7 / 2.7	No	No
	16 / 16	0.0 / 0.0	3.8 / 3.8	2.7 / 2.7	No	No
	7 / 7	0.0 / 0.0	3.8 / 3.8	2.7 / 2.7	No	No
Madison Street and 14th Street	18 / 18	0.0 / 0.0	4.1 / 4.1	2.9 / 2.9	No	No
	17 / 17	0.0 / 0.0	4.1 / 4.1	2.9 / 2.9	No	No
	13 / 13	0.0 / 0.0	4.0 / 4.0	2.8 / 2.8	No	No
	13 / 13	0.0 / 0.0	4.0 / 4.0	2.8 / 2.8	No	No
Jackson Street and 19th Street	14 / 14	0.0 / 0.0	3.5 / 3.5	2.4 / 2.4	No	No
	14 / 14	0.0 / 0.0	3.5 / 3.5	2.4 / 2.4	No	No
	10 / 10	0.0 / 0.0	3.5 / 3.5	2.4 / 2.4	No	No
	10 / 10	0.0 / 0.0	3.5 / 3.5	2.4 / 2.4	No	No
Jackson Street and Lakeside Drive	14 / 14	0.1 / 0.1	4.0 / 4.1	2.8 / 2.9	No	No
	13 / 14	0.1 / 0.1	3.9 / 4.0	2.7 / 2.8	No	No
	13 / 13	0.1 / 0.1	3.9 / 4.0	2.7 / 2.8	No	No
	13 / 13	0.1 / 0.1	3.9 / 4.0	2.7 / 2.8	No	No
Alice Street and 19th Street	13 / 13	0.0 / 0.0	3.5 / 3.5	2.4 / 2.4	No	No
	13 / 13	0.0 / 0.0	3.5 / 3.5	2.4 / 2.4	No	No
	13 / 10	0.0 / 0.0	3.5 / 3.5	2.4 / 2.4	No	No
	10 / 7	0.0 / 0.0	3.5 / 3.5	2.4 / 2.4	No	No
Harrison Street and 12th Street	21 / 21	0.0 / 0.0	3.8 / 3.8	2.7 / 2.7	No	No
	21 / 21	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
	13 / 13	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
	13 / 13	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No

Table IV.E-7 *Continued*

Intersection	Receptor Distance to Road Centerline (Meters)	Project- Related Increase 1-hr/8-hr (ppm)	Without/With Project 1-Hour CO Concentration (ppm)	Without/With Project 8-Hour CO Concentration (ppm)	Exceeds State Standards	
					1-Hr	8-Hr
Harrison Street and 20th Street	21 / 21	0.0 / 0.0	4.0 / 4.0	2.8 / 2.8	No	No
	17 / 17	0.0 / 0.0	4.0 / 4.0	2.8 / 2.8	No	No
	14 / 14	0.0 / 0.0	4.0 / 4.0	2.8 / 2.8	No	No
	14 / 14	0.1 / 0.1	3.9 / 4.0	2.7 / 2.8	No	No
Harrison Street and Lakeside Drive	17 / 21	0.0 / 0.0	4.7 / 4.7	3.3 / 3.3	No	No
	17 / 17	0.0 / 0.0	4.6 / 4.6	3.2 / 3.2	No	No
	17 / 17	0.0 / 0.0	4.5 / 4.5	3.1 / 3.1	No	No
	17 / 17	0.0 / 0.0	4.3 / 4.3	3.0 / 3.0	No	No
Harrison Street and Grand Avenue	21 / 21	0.0 / 0.0	5.0 / 5.0	3.5 / 3.5	No	No
	21 / 21	0.0 / 0.0	5.0 / 5.0	3.5 / 3.5	No	No
	20 / 20	0.0 / 0.0	4.9 / 4.9	3.4 / 3.4	No	No
	19 / 19	0.0 / 0.0	4.9 / 4.9	3.4 / 3.4	No	No
Broadway and 20th Street	18 / 18	0.0 / 0.0	4.1 / 4.1	2.9 / 2.9	No	No
	14 / 14	0.0 / 0.0	4.0 / 4.0	2.8 / 2.8	No	No
	14 / 14	0.1 / 0.1	3.9 / 4.0	2.7 / 2.8	No	No
	14 / 14	0.0 / 0.0	3.9 / 3.9	2.7 / 2.7	No	No
Broadway and Grand Avenue	17 / 17	0.0 / 0.0	4.2 / 4.2	2.9 / 2.9	No	No
	17 / 17	0.0 / 0.0	4.2 / 4.2	2.9 / 2.9	No	No
	17 / 17	0.0 / 0.0	4.1 / 4.1	2.9 / 2.9	No	No
	15 / 15	0.0 / 0.0	4.1 / 4.1	2.9 / 2.9	No	No
Broadway and 27th Street	18 / 18	0.0 / 0.0	4.3 / 4.3	3.0 / 3.0	No	No
	17 / 17	0.0 / 0.0	4.3 / 4.3	3.0 / 3.0	No	No
	16 / 16	0.0 / 0.0	4.2 / 4.2	2.9 / 2.9	No	No
	15 / 15	0.0 / 0.0	4.2 / 4.2	2.9 / 2.9	No	No
Telegraph Avenue and Grand Avenue	17 / 17	0.0 / 0.0	4.3 / 4.3	3.0 / 3.0	No	No
	17 / 17	0.0 / 0.0	4.2 / 4.2	2.9 / 2.9	No	No
	17 / 17	0.0 / 0.0	4.2 / 4.2	2.9 / 2.9	No	No
	17 / 17	0.0 / 0.0	4.2 / 4.2	2.9 / 2.9	No	No
Telegraph Avenue and 27th Street	17 / 17	0.0 / 0.0	4.2 / 4.2	2.9 / 2.9	No	No
	17 / 17	0.0 / 0.0	4.2 / 4.2	2.9 / 2.9	No	No
	17 / 17	0.1 / 0.0	4.1 / 4.2	2.9 / 2.9	No	No
	17 / 17	0.0 / 0.0	4.1 / 4.1	2.9 / 2.9	No	No
Northgate Avenue and West Grand Avenue	14 / 14	0.0 / 0.0	4.2 / 4.2	2.9 / 2.9	No	No
	14 / 14	0.0 / 0.0	4.2 / 4.2	2.9 / 2.9	No	No
	14 / 14	0.0 / 0.0	4.1 / 4.1	2.9 / 2.9	No	No
	12 / 12	0.0 / 0.0	4.1 / 4.1	2.9 / 2.9	No	No

Source: LSA Associates, Inc., 2009.

Table IV.E-8: Cumulative (2030) Without and With the Project CO Concentrations

Intersection	Receptor Distance to Road Centerline (Meters)	Project Related Increase 1-hr/8-hr (ppm)	Without/With Project 1-Hour CO Concentration (ppm)	Without/With Project 8-Hour CO Concentration (ppm)	Exceeds State Standards	
					1-Hr	8-Hr
Oak Street and 11th Street	17 / 17	0.0 / 0.0	3.5 / 3.5	2.4 / 2.4	No	No
	17 / 17	0.0 / 0.0	3.5 / 3.5	2.4 / 2.4	No	No
	10 / 10	0.0 / 0.0	3.5 / 3.5	2.4 / 2.4	No	No
	7 / 7	0.0 / 0.0	3.5 / 3.5	2.4 / 2.4	No	No
Oak Street and 12th Street	21 / 21	0.1 / 0.1	3.5 / 3.6	2.4 / 2.5	No	No
	20 / 20	0.1 / 0.1	3.5 / 3.6	2.4 / 2.5	No	No
	20 / 20	0.1 / 0.1	3.5 / 3.6	2.4 / 2.5	No	No
	7 / 7	0.1 / 0.1	3.5 / 3.6	2.4 / 2.5	No	No
Oak Street and 14th Street	21 / 21	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
	21 / 21	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
	13 / 13	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
	12 / 12	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
Madison Street and 7th Street	21 / 21	0.0 / 0.0	3.9 / 3.9	2.7 / 2.7	No	No
	20 / 20	0.0 / 0.0	3.9 / 3.9	2.7 / 2.7	No	No
	16 / 16	0.0 / 0.0	3.8 / 3.8	2.7 / 2.7	No	No
	16 / 16	0.0 / 0.0	3.8 / 3.8	2.7 / 2.7	No	No
Madison Street and 11th Street	21 / 21	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
	20 / 20	0.0 / 0.0	3.6 / 3.6	2.5 / 2.5	No	No
	16 / 16	0.0 / 0.0	3.6 / 3.6	2.5 / 2.5	No	No
	7 / 7	0.0 / 0.0	3.6 / 3.6	2.5 / 2.5	No	No
Madison Street and 12th Street	20 / 20	0.0 / 0.0	3.6 / 3.6	2.5 / 2.5	No	No
	20 / 20	0.0 / 0.0	3.6 / 3.6	2.5 / 2.5	No	No
	16 / 16	0.1 / 0.1	3.5 / 3.6	2.4 / 2.5	No	No
	7 / 7	0.0 / 0.0	3.5 / 3.5	2.4 / 2.4	No	No
Madison Street and 14th Street	18 / 18	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
	17 / 17	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
	13 / 13	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
	13 / 13	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
Jackson Street and 19th Street	14 / 14	0.1 / 0.1	3.3 / 3.4	2.3 / 2.4	No	No
	14 / 14	0.0 / 0.0	3.3 / 3.3	2.3 / 2.3	No	No
	10 / 10	0.0 / 0.0	3.3 / 3.3	2.3 / 2.3	No	No
	10 / 10	0.0 / 0.0	3.3 / 3.3	2.3 / 2.3	No	No
Jackson Street and Lakeside Drive	14 / 14	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
	13 / 13	0.0 / 0.0	3.6 / 3.6	2.5 / 2.5	No	No
	13 / 13	0.0 / 0.0	3.6 / 3.6	2.5 / 2.5	No	No
	13 / 13	0.0 / 0.0	3.6 / 3.6	2.5 / 2.5	No	No
Alice Street and 19th Street	13 / 13	0.0 / 0.0	3.3 / 3.3	2.3 / 2.3	No	No
	13 / 13	0.0 / 0.0	3.3 / 3.3	2.3 / 2.3	No	No
	10 / 10	0.0 / 0.0	3.3 / 3.3	2.3 / 2.3	No	No
	7 / 7	0.0 / 0.0	3.3 / 3.3	2.3 / 2.3	No	No
Harrison Street and 12th Street	21 / 21	0.0 / 0.0	3.5 / 3.5	2.4 / 2.4	No	No
	21 / 21	0.0 / 0.0	3.5 / 3.5	2.4 / 2.4	No	No
	13 / 13	0.0 / 0.0	3.5 / 3.5	2.4 / 2.4	No	No
	13 / 13	0.0 / 0.0	3.5 / 3.5	2.4 / 2.4	No	No

Table IV.E-8 *Continued*

Intersection	Receptor Distance to Road Centerline (Meters)	Project Related Increase 1-hr/8-hr (ppm)	Without/With Project 1-Hour CO Concentration (ppm)	Without/With Project 8-Hour CO Concentration (ppm)	Exceeds State Standards	
					1-Hr	8-Hr
Harrison Street and 20th Street	21 / 21	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
	20 / 20	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
	17 / 17	0.0 / 0.0	3.6 / 3.6	2.5 / 2.5	No	No
	14 / 14	0.0 / 0.0	3.6 / 3.6	2.5 / 2.5	No	No
Harrison Street and Lakeside Drive	21 / 17	0.0 / 0.0	4.0 / 4.0	2.8 / 2.8	No	No
	17 / 17	0.0 / 0.0	3.9 / 3.9	2.7 / 2.7	No	No
	17 / 17	0.0 / 0.0	3.9 / 3.9	2.7 / 2.7	No	No
	17 / 17	0.0 / 0.0	3.8 / 3.8	2.7 / 2.7	No	No
Harrison Street and Grand Avenue	21 / 21	0.0 / 0.0	4.1 / 4.1	2.9 / 2.9	No	No
	21 / 21	0.0 / 0.0	4.1 / 4.1	2.9 / 2.9	No	No
	20 / 20	0.0 / 0.0	4.1 / 4.1	2.9 / 2.9	No	No
	19 / 19	0.1 / 0.1	4.0 / 4.1	2.8 / 2.9	No	No
Broadway and 20th Street	18 / 18	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
	17 / 17	0.0 / 0.0	3.6 / 3.6	2.5 / 2.5	No	No
	14 / 14	0.0 / 0.0	3.6 / 3.6	2.5 / 2.5	No	No
	14 / 14	0.0 / 0.0	3.6 / 3.6	2.5 / 2.5	No	No
Broadway and Grand Avenue	17 / 17	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
	17 / 17	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
	17 / 17	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
	15 / 15	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
Broadway and 27th Street	18 / 18	0.0 / 0.0	3.8 / 3.8	2.7 / 2.7	No	No
	17 / 17	0.0 / 0.0	3.8 / 3.8	2.7 / 2.7	No	No
	17 / 17	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
	15 / 15	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
Telegraph Avenue and Grand Avenue	17 / 17	0.0 / 0.0	3.8 / 3.8	2.7 / 2.7	No	No
	17 / 17	0.0 / 0.0	3.8 / 3.8	2.7 / 2.7	No	No
	17 / 17	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
	17 / 17	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
Telegraph Avenue and 27th Street	17 / 17	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
	17 / 17	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
	17 / 17	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
	17 / 17	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
Northgate Avenue and West Grand Avenue	14 / 14	0.0 / 0.0	3.8 / 3.8	2.7 / 2.7	No	No
	14 / 14	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
	14 / 14	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No
	12 / 12	0.0 / 0.0	3.7 / 3.7	2.6 / 2.6	No	No

Source: LSA Associates, Inc., 2009.

(4) Toxic Air Contaminants – Project Operation. 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. 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.

According to the BAAQMD, when siting a new receptor an evaluation of existing sources of TACs and $PM_{2.5}$ emissions that would adversely affect individuals within the proposed project should be performed. Implementation of the proposed project would not result in any new sources of TACs. A database search of the BAAQMD's Stationary Source Risk & Hazard Analysis Tool revealed that there are two existing permitted sources of TAC or $PM_{2.5}$ emissions within 1,000 feet of the project site. Both are standby emergency electrical generators and are more than 950 feet from the project. One source is identified as the Oakland Property, LLC at 2101 Webster Street, the other as Verizon Business, 1999 Harrison Street. The Oakland Property lists a HRSA cancer risk of 0.96 in 1 million, well below the 10 in 1 million threshold and $PM_{2.5}$ value of 0.013, well below the 0.3 threshold. While the BAAQMD database lists the Verizon Business as a permitted emissions source, there is no corresponding emissions data. Since it is at a similar distance from the project as the Oakland Property and is listed as the same source type, it is probable that the risk levels are also well below thresholds, and it can also be concluded that the combination of these two sources of TACs or $PM_{2.5}$ would be below significance thresholds.

The proposed project is located more than 1,000 feet from the nearest train station and is not located within 1,000 feet of a high volume roadway or freeway, therefore the proposed project would not expose future residents of the project site to substantial levels of toxic air contaminants. The project location is consistent with ARB's advisory recommendation for the siting of sensitive receptors away from toxic air contaminant sources.

The parking garage areas associated with the project would be located underground. Section 406.4.2 of the California Building code requires that enclosed parking garages have proper ventilation and air circulation. The project would be subject to these regulations, which would ensure that the project would not result in a significant impact related to ventilation of the parking garage and would therefore not be a source of concentrated air pollutants.

Therefore, the project would not have the potential to expose sensitive receptors or the general public to substantial levels of TACs. Local community risk and hazard impacts would be less than significant.

(5) Toxic Air Contaminants – Project Construction. According to the BAAQMD CEQA Guidelines and City of Oakland significance criteria, any proposed project that would expose persons to substantial levels of TACs resulting in (a) a cancer risk level greater than 100 in a million, (b) a non-cancer risk (chronic or acute) hazard index greater than 10.0, or (c) an increase of greater than 0.8 micrograms per cubic meter of annual average $PM_{2.5}$ through the siting of new source or a new receptor would be considered to have a significant cumulative air quality impact. The use of construction equipment on the project site, such as front-end loaders, backhoes, cranes, forklifts and trucks results in the diesel emission exhaust, or diesel particulate emissions. The project site is located in an urban area in close proximity to existing residential uses.

The following discussion is based on the Health Risk Assessment (HRA) for project construction included in Appendix K. To estimate the potential cancer risk associated with construction of the proposed project from vehicle engine exhaust (including DPM), a dispersion model is used to translate an emission rate from the source location to a concentration at the receptor location of interest (i.e., a nearby residence). Dispersion modeling varies from the simpler, more conservative screening-level analysis to the more complex and refined detailed analysis. This assessment was conducted using the ARB health risk model, Hot-Spots Analysis and Reporting Program (HARP), with the air dispersion modeling performed using the Environmental Protection Agency (EPA) dispersion model, ISCST3. The model provides a detailed estimate of concentrations based on site and source geometry, source emissions strength, distance from the source to the receptor, and site-specific meteorological data.

To estimate the potential cancer risk associated with project construction equipment diesel engine exhaust, an air dispersion model is used to translate an emission rate from a source location to a concentration at a receptor location of interest. Air dispersion modeling varies from the simpler, more conservative screening-level analysis to the more complex and refined detailed analysis. This assessment was conducted using the EPA dispersion model SCREEN3. This model provides conservative estimates of concentrations considering site and source geometry, source strength, distance to receptor, and building wake effects on plume distribution. The SCREEN3 model was developed to provide an easy-to-use method of obtaining pollutant concentration estimates where upper-bound estimates are required or where meteorological data is unavailable. It is a useful tool in proving that an impact is not significant (i.e., if a screening-level analysis demonstrates an impact not significant, its conservative nature provides confidence in this conclusion). Screening-level modeling is less useful in concluding that an impact is significant. When a screening-level analysis indicates a significant impact, this conclusion normally points to the need for a more sophisticated (and less conservative) method of analysis using a model such as ISCST3 or AERMOD.

Emission Estimates. The HRA was conducted as recommended in the California Office of Environmental Health Hazard Assessment (OEHHA) Guidelines, by the ARB,[9] and the BAAQMD.[10],[11] It consists of several steps including: determine the PM_{10} emission factor, emission rate, and concentration at locations of interest; translate the PM_{10} concentrations into health risk values and compare the health risk values to thresholds and determine significance.

Emission factors for equipment emissions were estimated using the ARB's OFFROAD2007 and EMFAC2007 models. Both models include assumptions of technological and regulatory changes that will reduce emission rates over time. The HRA only allows for a single emission rate for the entire 70-year health risk evaluation period. Therefore, a worst-case set of emission factors from the year 2011 was used to represent the long-term 70-year evaluation period.

Excavation for the five levels of below-ground parking and building foundations would extend approximately 60 feet below the existing ground surface and require removal of approximately

[9] Air Resources Board, 2005. *HARP Model Documentation, Appendix K, Risk Assessment Procedures to Evaluate Particulate Emissions from Diesel-Fueled Engines*. February.

[10] Bay Area Air Quality Management District, 2010. *CEQA Construction Screening Approach*, May.

[11] Bay Area Air Quality Management District, 2011. *Recommended Methods for Screening and Modeling Local Risks and Hazards*, May.

212,000 cubic yards of soil. Screw piles would be used in construction of the foundation of the proposed project.

A Draft Construction Utilization Plan has been submitted to the City by the project applicant, which outlines construction tasks, duration of tasks, equipment needed, access point(s), and storage and staging locations. Total project construction is anticipated to take 33 months. Site grading and excavation is anticipated to take 6 months. Building construction, including the concrete structure, building skin, elevators and roofing is anticipated to take 22 months. Interior construction work will begin while building construction is being completed; interior work, site work and inspections will extend 5 months after building construction is generally complete. The project applicant has indicated that access to the site from 244 Lakeside Drive has been secured. Primary access for all material delivery and off-haul would be provided by Lakeside Drive, with secondary access on 19th Street as necessary, with the exception of elevator construction, roof construction and interior work, where access would be provided exclusively from Lakeside Drive.

The PM_{10} emission rate was determined by using estimated equipment utilization, as shown in Tables IV.E-9 and IV.E-10, combined with the OFFROAD2007 and EMFAC2007 emissions factors (included in Appendix of the HRA).

Table IV.E-9: Equipment Usage and Diesel Particulate Emissions

Equipment Type	Number of Units	Usage Duration	Hours Used per Day	PM_{10} Emission Factor (lbs/hr)	PM_{10} Emissions Rate (lbs/day)
Earthwork					
Front-End Loader	2	24 weeks	5	6.22E-02	0.31
Skip Loader	2	24 weeks	5	1.97E-02	0.10
Bobcat Loader	1	20 weeks	7	4.77E-02	0.33
Roller	1	24 weeks	6	6.11E-02	0.37
Backhoe	2	24 weeks	6	4.77E-02	0.29
Jumping Jack	1	10 weeks	4	9.14E-02	0.37
Generator Set	1	24 weeks	7	6.60E-02	0.46
				Total	**2.2**
Construction					
Skip Loader	2	88 weeks	6	1.97E-02	0.12
Backhoe	2	88 weeks	6	4.77E-02	0.29
Crane	1	44 weeks	5	3.58E-01	1.79
Forklift	2	88 weeks	6	3.53E-02	0.21
Manlift	1	44 weeks	5	6.05E-02	0.30
Generator Set	1	88 weeks	7	6.60E-02	0.46
				Total	**3.2**
Painting & Paving					
Skip Loader	2	20 weeks	7	1.97E-02	0.14
Paving Machine	1	10 weeks	7	8.18E-02	0.57
Roller	1	10 weeks	6	6.11E-02	0.37
Vibratory Plate	1	10 weeks	6	1.31E-03	0.01
Striping machines	1	2 weeks	6	6.41E-02	0.38
Generator Set	1	20 weeks	7	6.60E-02	0.46
				Total	**1.9**

lbs/hr = pounds per hour
lbs/day = pounds per day
PM_{10} = particulate matter less than 10 microns in size
Source: LSA Associates, Inc., February 2011.

Table IV.E-10: Support Equipment Usage and Diesel Particulate Emissions

Equipment Type	Number of Units	Miles per Day	PM_{10} Emission Factor (gms/mile)	PM_{10} Emissions Rate (lbs/day)
Mechanic Truck	1	10	0.04	0.00088
Fuel Truck	1	10	0.04	0.00088
Foreman Truck	1	10	0.04	0.00088
Delivery Trucks	10	30	0.035	0.023
Worker Commute	40	50	0.02	0.088
			Total	**0.11**

gms/mile = grams per mile
lbs/day = pounds per day
PM_{10} = particulate matter less than 10 microns in size
Source: LSA Associates, Inc., February 2011.

Since the construction equipment operates all over the site, for the purposes of this analysis, all diesel truck exhaust was modeled as if it came from a single spot on-site. This technique was used because it generates health-risk values that are more conservative than the reality of spreading the equipment emissions over the site. The SCREEN3 input parameters are shown in Table IV.E-11. The receptor height was set to approximate the lowest floor the nearby residents live on.

Table IV.E-11: SCREEN3 Input Parameters

Source Type	=	Volume
Emission Rate (g/s)	=	1.00
Source Height (m)	=	3.00
Init. Lateral Dimension (m)	=	4.65
Init. Vertical Dimension (m)	=	4.65
Receptor Height (m)	=	25.00
Urban/Rural Option	=	Urban

g/s = grams per second
m = meters
Source: LSA Associates, Inc., 2011.

Table IV.E-12 shows the SCREEN3 PM_{10} concentrations at a range of locations using the PM_{10} emission rates from Tables IV.E-10 and IV.E-11. The nearest sensitive receptors are residences approximately 3.0 to 4.6 meters (10 to 15 feet) to the east of the project site. For the purpose of the HRA a distance of 65 feet (20 meters) was utilized to represent an average exposure distance. Concentrations increase with distance due to the nature of the air dispersion and the plume effect; the peak concentration occurs at approximately 90 meters (295 feet) distance. (The SCREEN3 model output is included in the Appendix of the HRA.)

Table IV.E-12: SCREEN3 Modeling Results

Distance (m)	PM_{10} Concentrations ($\mu g/m^3$)		$PM_{2.5}$ Concentrations ($\mu g/m^3$)
	24-Hour	Annual	24-Hour
20	2.7	0.12	2.5
25	4.0	0.18	3.6
30	5.0	0.23	4.6
35	5.8	0.27	5.3
40	6.3	0.29	5.8
45	6.7	0.30	6.1
50	7.1	0.32	6.5
60	7.5	0.34	6.9
70	7.4	0.34	6.8
80	7.1	0.32	6.5
90	7.2	0.33	6.6
100	7.1	0.33	6.6
200	5.5	0.25	5.0
300	4.5	0.21	4.2
400	3.5	0.16	3.2
500	2.8	0.13	2.6

Note: $PM_{2.5}$ concentrations derived from PM_{10} concentrations using the $PM_{2.5}$ fraction of PM_{10} value of 0.92 from the ARB.
m = meters
PM_{10} = particulate matter less than 10 microns in size
$\mu g/m^3$ = micrograms per cubic meter
Source: LSA Associates, Inc., February 2011.

Assuming that the emissions of PM_{10} exactly represents DPM, the peak PM_{10} concentration from Table IV.E-12 is translated to the health risk value shown in Table IV.E-13 using the OEHHA methodology as described in the following equations:

Inhalation cancer risk = (Cair * DBR * A * EF * ED * $1x10^{-6}$) / AT * Inhalation Cancer Potency Factor

where:

Cair		Concentration of PM_{10} in air	
DBR	303 or 452	Adult or Child Daily breathing rate	(L/kg-day)
A	1	Inhalation absorption factor	
EF	350	Exposure frequency	(days/yr)
ED	4 months	Exposure duration	(years)
AT	25,550	Avg. time period of exposure	(days)
Diesel PM_{10}	1.1	Inhalation Cancer Potency factor	$(mg/kg-d)^{-1}$

Source: OEHHA Guidelines, August 2003.

and applying the 1.7 CRAF. Additionally, the chronic risk level is calculated as follows:

Inhalation chronic risk = Cair / Inhalation Chronic REL

where: Inhalation Chronic REL = 5.0

Acute Emission Impacts. The only TAC expected to be emitted in any substantial quantity is diesel exhaust particulate. Exposure to diesel exhaust can have immediate health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. In studies with human volunteers, diesel exhaust particles made people with allergies more susceptible to the materials to which they are allergic, such as dust and pollen. Exposure to diesel exhaust also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks. However, according to the rulemaking on *Identifying Particulate Emissions from Diesel-Fueled Engines as a Toxic Air Contaminant* (ARB 1998), the available data from studies of humans exposed to diesel exhaust are not sufficient for deriving an acute noncancer health risk guidance value. While the lungs are a major target organ for diesel exhaust, studies of the gross respiratory effects of diesel exhaust in exposed workers have not provided sufficient exposure information to establish a short-term noncancer health risk guidance value for respiratory effects. Therefore, the potential for short-term acute exposure from project-related toxic emissions would be less than significant.

Carcinogenic and Chronic Impacts. The results for carcinogenic and chronic impacts are shown in Table IV.E-13. Results of the analysis indicate that the maximum exposed individual (MEI) inhalation cancer risk associated with living at the closest residence would be 0.20 in 1 million which is less than the threshold of 10 in 1 million. The maximum chronic hazard index would be 0.066, which is below the threshold of 1.0.

Table IV.E-13: Inhalation Health Risks from Road Sources

Location	Carcinogenic Inhalation Health Risk with CRAF	Chronic Inhalation Health Index
Nearby Residence	0.20 in 1 million	0.066
Threshold	**10 in a million**	**1.0**

LSA Associates, Inc., February 2011.

Table IV.E-12 also shows that the peak 24-hour concentration of $PM_{2.5}$ from the equipment exhaust of construction operations is 6.9 $\mu g/m^3$. This converts to a peak annual $PM_{2.5}$ concentration of 0.13 $\mu g/m^3$ which is below the BAAQMD significance threshold of 0.3 $\mu g/m^3$. The exposure to the nearby residences of project construction emissions would result in a maximum risk level that is below the BAAQMD's carcinogenic criteria of significance (10 in 1 million). Implementation of the City's Standard COA AIR-1 for construction-related air pollution controls would reduce construction emission impacts; the Standard COA includes all feasible emission reduction measures recommended by BAAQMD and project construction toxic air impacts would be less than significant.

(6) Toxic Air Contaminants – Project Construction, Cumulative Impacts. Individual projects in the area, such as the Kaiser Center project, may be under construction simultaneously with the proposed project. Construction of the proposed project would not result in significant $PM_{2.5}$ concentrations or substantially increase health risk in the project vicinity due to construction operations. There may be projects in close proximity with construction plans that overlap with this project resulting in the possibility for a cumulative significant TAC impact. However, projects in the City of Oakland would be required to comply with the City's Standard Conditions of Approval, including COA AIR-1 for construction-related air pollution controls, which would minimize emissions from

each construction site. Therefore TAC concentrations from construction are not expected to be significant. Construction of the proposed project in conjunction with construction of other projects in the area would not result in cumulative substantial short-term significant TAC impacts.

c. Significant Impacts. This section discusses potentially significant air quality impacts.

Construction Emissions. The City of Oakland's threshold of significance is based on the BAAQMD threshold to assess construction-period air quality impacts. Based on the BAAQMD threshold of significance, high-rise apartment projects that contain fewer than 249 dwelling units would not result in the generation of construction-related criteria air pollutants and/or precursors that exceed the screening criterion. As this project will include approximately 370 dwelling units, construction-related emissions must be quantified.

Impact AIR-1: Construction period activities including site preparation and construction could generate significant short–term exhaust and organic emissions. Construction-related NO_x and ROG emissions would be potentially significant. (S)

URBEMIS 2007 was used to calculate construction-related emissions. The BAAQMD CEQA Guidelines include a proposed significance threshold for the two ozone precursors (ROG and NO_x) and particulate matter (both PM_{10} and $PM_{2.5}$).

The estimation of construction emissions is based on the information provided in Chapter 3, Project Description. The estimated emissions consider the following basic construction phases: demolition, excavation/grading, building construction, and architectural coating. Excavation for the five levels of below-ground parking and building foundations would require removal of approximately 212,000 cubic yards of soil. Total project construction is anticipated to take 33 months. Site grading and excavation is anticipated to take 6 months. Building construction is anticipated to take 22 months. Interior construction work will begin while building construction is being completed; interior work, site work and inspections will extend 5 months after building construction is generally complete. The proposed significance thresholds and URBEMIS 2007 emission results are shown in Table IV.E-14. Additional details are provided in Appendix C.

Table IV.E-14: Maximum Project Construction-Related Emissions in Pounds Per Day

	Reactive Organic Gases	Nitrogen Oxides	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Project Emissions	83.26	69.47	2.96	2.72
BAAQMD Significance Threshold	54	54	82	54
Exceed?	Yes	Yes	No	No
Project Emissions with Standard COA Incorporated	44.71	63.77	2.29	2.11
BAAQMD Significance Threshold	54	54	82	54
Exceed?	No	Yes	No	No

Source: LSA Associates, Inc., 2010.

The significance criteria for PM_{10} and $PM_{2.5}$ are based on exhaust emissions only. Excavation, site preparation, and grading activities would cause soil disturbance and generate PM_{10} and $PM_{2.5}$ fugitive dust emissions; construction contractors are required to implement best management practices, and are not included in the results of Table IV.E-9. These emissions are discussed below and will be less

than significant. The construction-related exhaust emissions generated by the proposed project are not anticipated to exceed the BAAQMD's thresholds for PM_{10} and $PM_{2.5}$.

Construction-related fugitive dust would vary from day to day depending on the level and type of activity, silt content of the soil, and the weather. Without implementation of standard conditions of approval, fugitive dust from construction activities would have the potential to result in high concentrations of PM_{10} and $PM_{2.5}$ and could even affect local visibility. The proposed project would be subject to construction emission and dust control measures recommended by BAAQMD (see COA AIR-1), which are uniformly applied by the City as Standard Conditions of Approval. Compliance with this Standard COA would reduce potential impacts related to PM_{10} and $PM_{2.5}$ to a less-than-significant level.

As shown in Table IV.E-14, construction-related ROG emissions would be 83 pounds per day and NO_x emissions would be 69 pounds per day, both of which would exceed the BAAQMD threshold. The significant ROG emissions are primarily related to application of architectural coatings. Implementation of the City's Standard COA would reduce construction emission impacts, particularly related to ROG emissions to a less-than-significant level, as the Standard COA would include low VOC architectural coatings.

The NO_x emissions which cause the exceedance are due to daily emissions from the mix of construction equipment and vehicles associated with excavation activity required for the underground parking garage and other activities, such as site preparation.

> Mitigation Measure AIR-1: The City's Standard COA includes all feasible emission reduction measures recommended by BAAQMD, including a 20 percent NO_x reduction related to off-road construction vehicles. There are no additional feasible mitigation measures to reduce haul truck emissions associated with the excavation activity. Therefore, as shown in Table IV.E-14, NO_x emissions from construction would remain significant and unavoidable. (SU)

Implementation of the Mitigation Measure would reduce the NO_x emission impact but this impact is still considered Significant and Unavoidable.

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,[12] 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.[13] In its "natural" condition, the greenhouse effect is responsible for maintaining a habitable climate on Earth, but human activity has caused

[12] United States Environmental Protection Agency, 2000. Global Warming – Climate: Uncertainties. Website: http://yosemite.epa.gov/oar/globalwarming.nsf/content/ClimateUncertainties.html#likely, accessed July 24, 2007.

[13] "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.

increased concentrations of these gases in the atmosphere, thereby contributing to an increase in global temperatures.

The U.S. 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 CO_2 in the atmosphere since pre-industrial times are well-documented and understood.
- The atmospheric buildup of CO_2 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."[14]

At the same time, there is much uncertainty concerning the magnitude and rate of the warming. Specifically, the U.S. 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."[15]

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

[14] United States Environmental Protection Agency, 2000, op. cit.

[15] Ibid.

hydrofluorocarbons (HFCs), perfluorocarbons (PFC), and sulfur hexafluoride (SF_6), which are byproducts of certain industrial processes.[16]

c. Greenhouse Gas Emissions Generated by Human Activity. As mentioned above, the primary GHG generated by human activity is CO_2. Fossil fuel combustion, especially for the generation of electricity and powering of motor vehicles, has led to substantial increases in CO_2 emissions (and thus substantial increases in atmospheric concentrations). In 1994, atmospheric CO_2 concentrations were found to have increased by nearly 30 percent above pre-industrial (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),[17] and is expressed as a function of how much warming would be caused by the same mass of CO_2. Thus, GHG emissions are typically measured in terms of pounds or tons of CO_2 equivalents (CO_2e).

(1) Global Emissions. Worldwide emissions of GHGs in 2004 were 30 billion tons of CO_2e per year[18] (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 CO_2e or about 25 tons/year/person. Of the four major sectors nationwide — residential, commercial, industrial and transportation — transportation accounts for the highest fraction of GHG emissions (approximately 35 to 40 percent); these emissions are entirely generated from direct fossil fuel combustion.[19]

(3) State of California Emissions. In 2004, California emitted approximately 550 million tons of CO_2e, 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 otherwise.[20] 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 CO_2 equivalence) were as follows:

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[16] California Environmental Protection Agency, 2006b. *Final 2006 Climate Action Team Report to the Governor and Legislature.* Sacramento, CA. April 3.

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

[18] 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.

[19] United States Environmental Protection Agency, 2000, op. cit.

[20] California Energy Commission, 2006/2007. *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.

- Carbon dioxide (CO_2) accounted for 83.3 percent;
- Methane (CH_4) accounted for 6.4 percent;
- Nitrous oxide (N_2O) accounted for 6.8 percent; and
- Fluorinated gases (HFCs, PFC, and SF_6) accounted for 3.5 percent.[21]

Table IV.E-15: Oakland Community-wide GHG Emissions Summary – 2005 (tons/year)

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

Source: ICLEI Oakland Baseline Greenhouse Gas Emissions Inventory, 2006.

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.[22]

(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.[23]

(5) City of Oakland Emissions. Oakland, in partnership with the International Council for Local Environmental Initiatives (ICLEI), an international association of local, regional, and national governments and government organizations that have made a commitment to sustainable development, 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.[24] The community-wide levels reflect all the energy used and waste produced within the Oakland city limits. As shown in Table IV.E-15, Oakland emitted approximately 2.4 million tons of CO_2 equivalents (CO_2e) 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.

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

[21] California Environmental Protection Agency, 2006b, op. cit.

[22] California Energy Commission, 2007, op. cit.

[23] Bay Area Air Quality Management District, 2006. *Source Inventory of Bay Area Greenhouse Gas Emissions.* November.

[24] International Council for Local Environmental Initiatives, 2006. City of Oakland Baseline Greenhouse Gas Emissions Inventory Report, December.

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 CO_2e), and 19.5 percent (to 2.9 million tons CO_2e) 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.

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.[25]

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).[26]

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.[27] 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).

[25] International Panel on Climate Change, 2000. *Special Report on Emissions Scenarios.* Website: www.grida.no/climate/ipcc/emission/002.htm, accessed July 24, 2007.

[26] 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.

[27] International Panel on Climate Change, 2000, op. cit.

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.[28]

- Snow cover is projected to contract, with permafrost areas sustaining thawing.
- Sea ice is projected to shrink in both the Arctic and Antarctic.
- Hot extremes, heat waves, and heavy precipitation events are likely to increase in frequency.
- Future tropical cyclones (typhoons and hurricanes) will likely become more intense.
- Non-tropical storm tracks are projected to move poleward, with consequent changes in wind, precipitation, and temperature patterns. Increases in the amount of precipitation are very likely in high-latitudes, while decreases are likely in most subtropical regions.
- Warming is expected to be greatest over land and at most high northern latitudes, and least over the Southern Ocean and parts of the North Atlantic Ocean.

Potential secondary effects from global warming include global rise in 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 ARB, 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.[29] 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.[30]

Below is a summary of some of the potential effects reported in an array of studies that could be experienced in California as a result of global warming and climate change:

- **Air Quality.** Higher temperatures, conducive to air pollution formation, could worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. For other pollutants, the effects of climate change and/or weather are less well studied, and even less well understood.[31] 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

[28] Ibid.

[29] California Air Resources Board, 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.

[30] 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.

[31] United States Environmental Protection Agency, 2007, op. cit.

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.[32]

- **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.[33]

  A July 2006 technical report prepared by the California Department of Water Resources (DWR) addresses the State Water Project (SWP), the Central Valley Project, and the Sacramento-San Joaquin Delta. Although the report projects that "[c]limate change will likely have a significant effect on California's future water resources … [and] future water demand," it also reports that "much uncertainty about future water demand [remains], especially [for] those aspects of future demand that will be directly affected by climate change and warming. While climate change is expected to continue through at least the end of this century, the magnitude and, in some cases, the nature of future changes is uncertain. This uncertainty serves to complicate the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood." DWR adds that "[i]t is unlikely that this level of uncertainty will diminish significantly in the foreseeable future." Still, changes in water supply are expected to occur, and many regional studies have shown that large changes in the reliability of water yields from reservoirs could result from only small changes in inflows. 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. 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.

- **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

[32] California Climate Change Center, 2006. *Our Changing Climate: Assessing the Risks to California*, CEC-500-2006-077, Sacramento, CA. July.

[33] 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): 149–1]64. Malden, MA, Blackwell Synergy for AWRA.

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 CO_2 levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase; crop-yield could be threatened by a less reliable water supply; and greater ozone pollution could render plants more susceptible to pest and disease outbreaks. In addition, temperature increases could change the time of year that certain crops, such as wine grapes, bloom or ripen, and thus affect their quality.[34]
- **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.[35] 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. Regulations and polices relating to Greenhouse Gas Emissions and Climate Change derive from several levels of government: international, federal, State and local.

(1) International and Federal. Three key international federal initiatives address climate change.

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.

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

[34] California Climate Change Center, 2006, op. cit.

[35] Parmesan, C. and H. Galbraith, 2004. *Observed Impacts of Global Climate Change in the U.S.*, Arlington, VA: Pew Center on Global Climate Change, November.

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.[36]

U.S. Environmental Protection Agency (U.S. EPA). To date, the U.S. EPA has not regulated GHGs under the Clean Air Act (discussed above) based on its assertion in *Massachusetts et. al. v. EPA et. al*[37] that the "Clean Air Act does not authorize it to issue mandatory regulations to address global climate change and that it would be unwise to regulate GHG emissions because a causal link between GHGs and the increase in global surface air temperatures has not been unequivocally established," However, in the same case, (*Massachusetts v. EPA*) the U.S. Supreme Court held that the U.S. EPA can, and should, consider regulating motor-vehicle GHG emissions.

(2) State of California. Numerous State laws and one executive order address climate change.

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 ARB 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, ARB responded by adopting "CO_2-equivalent fleet average emission" standards. The standards will be phased in from 2009 to 2016, reducing emissions by 22 percent in the "near term" (2009-2012) and 30 percent in the "mid term" (2013-2016), as compared to 2002 fleets.

Executive Order (EO) S-3-05. On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order (EO) S-3-05, establishing statewide GHG emissions reduction targets. This EO provides that by 2010, emissions shall be reduced to 2000 levels; by 2020, emissions shall be reduced to 1990 levels; and by 2050, emissions shall be reduced to 80 percent of 1990 levels. The Secretary of the California Environmental Protection Agency (CalEPA) is charged with coordinating oversight of efforts to meet these targets and formed the Climate Action Team (CAT) to carry out the EO. Several of the programs developed by the CAT to meet the emission targets are relevant to residential construction and are outlined in a March 2006 report.[38] 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). California Assembly Bill 32 (AB 32). On August 31, 2006, the California Assembly passed Bill 32 (AB 32) (signed into law on September 27, 2006), the California Global Warming Solutions Act of 2006. AB 32 commits California to reduce GHG emissions to 1990 levels by 2020 and establishes a multi-year regulatory process under the jurisdiction of the ARB to establish regulations to achieve these goals. The regulations shall require monitoring and annual reporting of GHG emissions from selected sectors or categories of emitters of GHGs.

[36] Climate Change Technology Program, 2006. About the U.S. Climate Change Technology Program, Washington, D.C. Website: http://www.climatetechnology.gov/about/index.htm, accessed July 24, 2007. Updated April 2006.

[37] United States Supreme Court, 2007. *Massachusetts et. al. v. EPA et. al* (No. 05-1120, 415F 3d 50). April 2.

[38] California Environmental Protection Agency, 2006a. Climate Action Team, *Executive Summary. Climate Action Team Report to Governor Schwarzenegger and the California Legislature*. Sacramento, CA, March.

By January 1, 2008, ARB was required to adopt a statewide GHG emissions limit equivalent to the statewide GHG emissions levels in 1990, which must be achieved by 2020. By January 1, 2011, ARB is required to adopt rules and regulations, which shall become operative January 1, 2012, to achieve the maximum technologically feasible and cost-effective GHG emission reductions.

On April 20, 2007, ARB published Proposed Early Actions to Mitigate Climate Change in California. There are no early action measures specific to residential development included in the list of 36 measures identified for ARB 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." The law permits the use of market-based compliance mechanisms to achieve those reductions and also requires that GHG measures have neither negative impacts on conventional pollutant controls nor any disproportionate socioeconomic effects (among other criteria).

On December 11, 2008, ARB adopted its Climate Change Scoping Plan (Scoping Plan), which functions as a roadmap of ARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. The Scoping Plan contains the main strategies California will implement to reduce CO_2e emissions by 174 million metric tons (MMT), or approximately 30 percent, from the state's projected 2020 emissions level of 596 MMT of CO_2e under a business-as-usual scenario. The Scoping Plan also breaks down the amount of GHG emissions reductions ARB recommends for each emissions sector of the state's GHG inventory. While ARB has identified a GHG reduction target of 15 percent for local governments themselves, it has not yet determined what amount of GHG emissions reductions it recommends from local government land use decisions. However, the Scoping Plan does state that successful implementation of the plan relies on local governments' land use planning and urban growth decisions because local governments have primary authority to plan, zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions. ARB further acknowledges that decisions on how land is used will have large effects on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. The measures approved by ARB will be developed over the next two years and be in place by 2012.

The Scoping Plan also includes recommended measures that were developed to reduce greenhouse gas emissions from key sources and activities while improving public health, promoting a cleaner environment, preserving natural resources, and ensuring that the impacts of the reductions are equitable and do not disproportionately impact low-income and minority communities. These measures, shown below in Table IV.E-16 by sector, also put the State on a path to meet the long-term 2050 goal of reducing California's greenhouse gas emissions to 80 percent below 1990 levels.

Table IV.E-16: List of Greenhouse Gas Reduction Measures

Recommended Reduction Measures	Reductions Counted Towards 2020 Target (MMTCO2E)	
ESTIMATED REDUCTIONS RESULTING FROM THE COMBINATION OF CAP AND TRADE PROGRAM AND COMPLEMENTARY MEASURES		**146.7**
California Light-Duty Vehicle Greenhouse Gas Standards • Implement Pavley standards • Develop Pavley II light-duty vehicle standards	31.7	
Energy Efficiency • Building/appliance efficiency, new programs, etc. • Increase CHP generation by 30,000 GWh • Solar Water Heating (AB 1470 goal)	26.3	
Renewables Portfolio Standard (33% by 2020)	21.3	
Low Carbon Fuel Standard	15	
Regional Transportation-Related GHG Targets[39]	5	
Vehicle Efficiency Measures	4.5	
Goods Movement • Ship Electrification at Ports • System-Wide Efficiency Improvements	3.7	
Million Solar Roofs	2.1	
Medium/Heavy Duty Vehicles • Heavy-Duty Vehicle Greenhouse Gas Emission Reduction (Aerodynamic Efficiency) • Medium- and Heavy-Duty Vehicle Hybridization	1.4	
High Speed Rail	1.0	
Industrial Measures (for sources covered under cap-and-trade program) • Refinery Measures • Energy Efficiency & Co-Benefits Audits	0.3	
Additional Reductions Necessary to Achieve the Cap	34.4	
ESTIMATED REDUCTIONS FROM UNCAPPED SOURCES/SECTORS		**27.3**
High Global Warming Potential Gas Measures	20.2	
Sustainable Forests	5.0	
Industrial Measures (for sources not covered under cap and trade program) • ·Oil and Gas Extraction and Transmission	1.1	
Recycling and Waste (landfill methane capture)	1.0	
TOTAL REDUCTIONS COUNTED TOWARDS 2020 TARGET		**174**
Other Recommended Measures	**Estimated 2020 Reductions (MMTCO2E)**	
State Government Operations	1-2	
Local Government Operations	TBD	
Green Buildings	26	
Recycling and Waste • Mandatory Commercial Recycling • Other measures	9	
Water Sector Measures	4.8	
Methane Capture at Large Dairies	1.0	

Source: California Air Resources Board for the State of California. 2008. *Climate Change Scoping Plan.*

[39] This number represents an estimate of what may be achieved from local land use changes. It is not the SB 375 regional target. ARB will establish regional targets for each Metropolitan Planning Organization (MPO) region following the input of the Regional Targets Advisory Committee and a public consultation process with MPOs and other stakeholders per SB 375.

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.[40]

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.

SB 97 requires the Governor's Office of Planning and Research (OPR) to prepare CEQA Guidelines for the mitigation of GHG emissions, including, but not limited to, effects associated with transportation or energy consumption. The Resources Agency must 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.

On December 30, 2009, the Natural Resources Agency adopted CEQA Guidelines Amendments related to climate change. These amendments state that a lead agency should make a good-faith effort, based on available information, to describe, calculate or estimate the amount of GHG emissions resulting from a project. Revisions to Appendix G of the *CEQA Guidelines* suggest that the project be evaluated for the following impacts:

- Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The CEQA Guidelines Amendments became effective on March 18, 2010.

California Senate Bill 375 (SB 375). Governor Schwarzenegger signed SB 375 into law in September 2008 (Chapter 728, Statutes of 2008). The legislation aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires metropolitan planning organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy (APS) that will prescribe land use allocation in the MPO's regional transportation plan. ARB, in consultation with MPOs, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. ARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned

[40] Collard, Gary, 2007. California Energy Commission, email correspondence to Robert Vranka, Ph.D, ESA, July 12.

targets. If MPOs do not meet the GHG reduction targets, transportation projects will not be eligible for funding programmed after January 1, 2012.

California Urban Water Management Act. The California Urban Water Management Planning Act requires various water purveyors throughout the State of California (such as EBMUD) to prepare 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.[41]

Bay Area Air Quality Management District. BAAQMD adopted GHG thresholds of significance in June 2010. For land use development projects (i.e., residential, commercial, industrial, and public land uses and facilities), the proposed threshold of significance for GHG emissions is (1) compliance with a qualified climate action plan or qualified general plan; (2) annual GHG emissions less than 1,100 metric tons per year; or (3) annual GHG emissions less than 4.6 metric tons per service population (residents plus employees).

(3) City of Oakland Local Plan and Policies. The City of Oakland addresses climate change by way of its General Plan as well as a large number of other programs and policy initiatives.

City of Oakland General Plan. Four elements of the City's General Plan address climate change.

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:

- 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)*

[41] Brekke, 2004, op. cit.

- 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 CO_2; OSCAR policies that encourage stormwater management, which relates to the maintenance of floodplains and infrastructure to accommodate potential increased storms and flooding; and OSCAR policies that encourage energy efficiency and use of alternative energy sources, which directly address reducing GHG emissions.

- 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 CO_2 as a by-product), avoid the need to transport materials to disposal sites (which produces GHG emissions), and

eliminate the need for materials to be replaced by new product (which often requires the use of fossil fuels to obtain raw and manufacture new material).[42]

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.[43] Also, wildfire results in the loss of vegetation; carbon is stored in vegetation, and when the vegetation burns, the carbon returns to the atmosphere.[44] 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.

- 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)*

Housing Element. The Housing Element contains the following policies that address issues related to GHG emissions and climate change:

- 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. *(Policy 7.1)*
- Encourage the incorporation of energy conservation design features in existing and future residential development beyond minimum standards required by State building code. *(Policy 7.2)*
- Continue to direct development toward existing communities and encourage infill development at densities that are higher than – but compatible with – the surrounding communities. Encourage development in close proximity to transit, and with a mix of land uses in the same zoning district, or on the same site, so as to reduce the number and frequency of trips made by automobile. *(Policy 7.3)*
- Work with developers to encourage construction of new housing that, where feasible, reduces the footprint of the building and landscaping, preserves green spaces, and supports ecological systems. *(Policy 7.4)*

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;

[42] United States Environmental Protection Agency, 2006a. General Information on the Link Between Solid Waste and Greenhouse Gas Emissions, October. Website: http://www.epa.gov/climatechange/wycd/waste/generalinfo.html, accessed August 10, 2007.

[43] United States Environmental Protection Agency, 2006b. *Climate Change – Health and Environmental Effects: Health*. Website: www.epa.gov/climatechange/effects/health.html, accessed July 24, 2007.

[44] National Aeronautics and Space Administration, 2005. *El Nino-Related Fires Increase Greenhouse Gas Emissions, January 5.* Website: http://www.nasa.gov/centers/goddard/news/topstory/2004/0102firenino.html, accessed August 10, 2007.

Transportation; Waste Reduction; Water; and Environmental Health. Initiatives relevant to climate change and global warming are summarized below:[45]

- **Chicago Climate Exchange.** The City's Climate Protection program includes a March 2005 Council adoption of Chicago Climate Exchange Resolution (No. 79135 C.M.S.). The Chicago Climate Exchange (CCX) is a voluntary but legally binding system to reduce carbon dioxide emissions. Members agreed to reduce their emissions 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.
- **Community Choice Aggregation.** Oakland has funded a Phase I feasibility study and a Phase II Implementation Plan to become a community choice aggregator, which would allow the City to purchase electricity on behalf of 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.
- **Energy Efficiency Participation.** The City of Oakland has promoted energy efficiency with the following programs: Community Youth Energy Services (CYES), which hires and trains local youth to provide free in-home energy audits, education, and hardware installation to low income residents; CA-Leadership in Energy Efficiency Program (CA-LEEP), a CPUC-funded program 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 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. The City adopted a Green Building ordinance for private development projects in October of 2010.

[45] Oakland, City of, 2007. *Oakland Sustainable Community Development Initiative*. Website: www.sustainableoakland.com/Page774.aspx, accessed June 25, 2007. Updated March 2007.

- **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.
- **Polystyrene Foam Ban Ordinance.** In June 2006 the Oakland City Council passed the Green Food Service Ware Ordinance (Ordinance 14727, effective as of January 1, 2007), which prohibits the use of polystyrene foam disposable food service ware and requires, when cost neutral, the use of biodegradable or compostable disposable food service ware by food vendors and City facilities.
- **Zero Waste Resolution.** In March 2006 the Oakland City Council adopted a Zero Waste Goal by 2020 Resolution (Resolution 79774 C.M.S.), and commissioned the creation of a Zero Waste Strategic Plan to achieve the goal.
- **Stormwater Management.** On February 19, 2003, the Regional Water Quality Control Board, San Francisco Bay Region, issued a municipal stormwater permit under the National Pollutant Discharge Elimination System (NPDES) permit program to the Alameda Countywide Clean Water Program (ACCWP). The purpose of the permit is to reduce the discharge of pollutants in stormwater to the maximum extent practicable and to effectively prohibit non-stormwater discharges into municipal storm drain systems and watercourses. The City of Oakland, as a

member of the ACCWP, is a co-permittee under the ACCWP's permit and is, therefore, subject to the permit requirements.

Provision C.3 of the NPDES permit is the section of the permit containing stormwater pollution management requirements for new development and redevelopment projects. Among other things, Provision C.3 requires that certain new development and redevelopment projects incorporate post-construction stormwater pollution management measures, including stormwater treatment measures, stormwater site design measures, and source control measures, to reduce stormwater pollution after the construction of the project. These requirements are in addition to standard stormwater-related best management practices (BMPs) required during construction.

- **Watershed Improvement.** The City of Oakland, by implementing the Watershed Improvement Program, has made environmental protection of creeks a priority. The City of Oakland, along with the other cities in the county, is a member of the Alameda Countywide Clean Water Program (ACCWP). ACCWP acts to limit stormwater runoff pollution and to keep creeks and 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 discussed earlier, a project would have a significant impact with regard to climate change if it would generate greenhouse gas (GHG) emissions, either directly or indirectly, that would:

a) Generate greenhouse gas emissions, either directly or indirectly, that have a significant impact on the environment, specifically:

Project Level Impacts[46]

1) For a project involving a stationary source, produce total emissions of more than 10,000 metric tons of CO_2e annually.[47]

[46] The project's expected greenhouse gas emissions during construction should be annualized over a period of 40 years and added to the expected emissions during the operation for comparison to the threshold. A 40-year period is used because 40-years is considered average life expectancy of a building before it is remodeled with considerations for increased energy efficiency. The thresholds are based on BAAQMD thresholds. The BAAQMD thresholds were originally developed for project impacts only. Therefore, combining both construction and operation emissions for comparison to the threshold represents a conservative analysis of potential greenhouse gas impacts.

2) For a project involving a land use development[48], produce total emissions of more than 1,100 metric tons of CO_2e annually **AND more than 4.6 metric tons of** CO_2e per service population[49] annually.[50]

b) Conflict with any applicable plan, policy or regulation of an appropriate regulatory agency adopted for the purpose of reducing GHG emissions.

b. Approach and Conclusion to CEQA Analysis of GHG Emissions and Climate Change Impacts in this EIR. This EIR does discuss, for consideration by decision makers, estimated GHG emissions of the proposed project, project-related activities that could contribute to the generation of increased GHG emissions, the project design features that would avoid or minimize those emissions, and the approaches to further reduce those emissions.

The approach employed in this EIR uses both quantitative and qualitative methods. The quantitative method is used to answer the first question of the State CEQA Guidelines Amendments identified above (i.e., would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment). The quantified threshold to be used is 1,100 metric tons per year of CO_2e more than 4.6 metric tons of CO_2e per service population annually.

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

However, the analysis in this EIR considers that, because the quantified threshold established by BAAQMD was formulated based on AB 32 reduction strategies, a project cannot exceed the numeric threshold without also conflicting with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs. Therefore, if the proposed project exceeds the numeric threshold, the project would also result in a significant cumulative impact under the second threshold, even though the project may incorporate measures and have features that would reduce its contribution to cumulative GHG emissions.

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[47] Stationary sources are projects that require a BAAQMD permit to operate.

The impact is less than significant if the emissions are below either of these thresholds. Accordingly, the impact is significant if the emissions exceed BOTH of these thresholds.

[48] Land use developments are projects that do not require a BAAQMD permit to operate.

[49] The service population includes both residents and employees of the proposed project.

[50] A project's impact would be considered significant if the emissions exceed BOTH the 1,100 metric ton threshold and the 4.6 metric ton threshold. Accordingly, the impact would be less than significant if a project's emissions are below EITHER of these thresholds.

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.

c. Less-Than-Significant Impacts. This section discusses less-than-significant greenhouse gas emission impacts.

Potential Project Activities Contributing to GHG Emissions. Construction and operation of the proposed 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:

- **Removal of Vegetation.** The net removal of vegetation for construction results in a loss of the carbon sequestration in plants. However, planting of additional vegetation would result in additional carbon sequestration and lower the carbon footprint of the project.
- **Construction Activities.** Construction equipment typically uses fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as carbon dioxide, methane and nitrous oxide. Furthermore, methane is emitted during the fueling of heavy equipment.
- **Gas, Electric and Water Use.** 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

[51] United Nations Environment Programme, 2007. *Buildings and Climate Change: Status, Challenges and Opportunities*, Paris, France.

[52] California Energy Commission, 2004. *Water Energy Use in California* (online information sheet) Sacramento, CA, August 24. Website: http://energy.ca.gov/pier/iaw/industry/water.html, accessed July 24, 2007.

levels of GHG emissions and contributions to global climate change attributable to activities throughout Oakland.

Estimated GHG Emission from the Proposed Project. This section evaluates the emissions of greenhouse gases that would result from implementation of the proposed project.

In light of the considerations outlined above, Table IV.E-17 presents a gross estimate of the proposed project's operational CO_2e emissions resulting from the proposed project associated increases in motor vehicle trips resulting from the proposed project, as well as from energy and water use. GHG emissions associated with the proposed project were calculated using the URBEMIS2007 Version 9.2 model, trip generation data from the project traffic analysis, and the BAAQMD GHG Model (BGM).

Construction. Construction would produce combustion emissions from various sources. During site preparation and construction of the project, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically use fossil-based fuels to operate. Using the URBEMIS 2007 model, as recommended by BAAQMD, it is estimated that the total project construction emissions would be approximately 1,673 metric tons of CO_2. Model output sheets are included in Appendix C.

Architectural coatings used in construction of the proposed project may contain volatile organic compounds (VOCs) that are similar to reactive organic gases (ROG) and are part of ozone precursors. However, there are no significant emissions of GHGs from architectural coatings.

Transportation. Transportation associated with the project would result in GHG emissions from the combustion of fossil fuels in daily automobile and truck trips. Transportation is the largest source of GHG emissions in California and represents approximately 38 percent of annual CO_2 emissions generated in the State. For land use development projects, vehicle miles traveled (VMT) and vehicle trips are the most direct indicators of GHG emissions associated with the project.

Electricity and Natural Gas. Buildings represent 39 percent of United States primary energy use and 70 percent of electricity consumption.[53] Electricity use can result in GHG production if the electricity is generated by combusting fossil fuel. The project is anticipated to increase the use of electricity and natural gas. Energy consumption was estimated using the BGM.

Water and Wastewater. Energy use and related GHG emissions are based on water supply and conveyance, water treatment, water distribution, and wastewater treatment. Each element of the water use cycle has unique energy intensities (kilowatt hours [kWh]/million gallons). Recognizing that the actual energy intensity in each component of the water use cycle will vary by utility, the California Energy Commission (CEC) assumes that approximately 5,411 kWh per million gallons are consumed for water that is supplied, treated, consumed, treated again, and disposed of in Northern California. Water usage and wastewater generation were estimated using the BGM.

Solid Waste Disposal. Solid waste generated by the project could contribute to GHG emissions in a variety of ways. Landfilling and other methods of disposal use energy for transporting and managing the waste and they produce additional GHGs to varying degrees. Landfilling, the most

[53] United States Department of Energy. 2003. *Buildings Energy Data Book.*

common waste management practice, results in the release of CH_4 from the anaerobic decomposition of organic materials. CH_4 is 25 times more potent a GHG than CO_2. However, landfill CH_4 can also be a source of energy. In addition, many materials in landfills do not decompose fully, and the carbon that remains is sequestered in the landfill and not released into the atmosphere. Solid waste disposal was estimated using the BGM.

Carbon Sequestration. The proposed project could result in the removal of 30 protected trees on the project site. Tree removal would result in a loss of carbon sequestration in the project area. Carbon sequestration is the process through which GHGs are absorbed by trees, plants and crops through photosynthesis, and stored as carbon in biomass (tree trunks, branches, foliage and roots) and soils.[54] A mature tree can absorb carbon dioxide at a rate of 48 pounds per year.[55] The landscape plan included as part of the project application indicates that 14 trees would be planted or transplanted as part of the proposed project. Removal of trees on the project site would result in a loss of carbon sequestration of less than 1 metric ton per year. Tree removal and replacement, including implementation of COA BIO-2 and COA BIO-3 as discussed in Chapter V.I, Biological Resources, would not have a significant adverse effect on GHG emissions.

Table IV.E-17: Estimated CO_2e Emissions from the Proposed Project

	Emissions (Metric Tons Per Year)				
Emission Source	**CO_2**	**CH_4**	**N_2O**	**CO_2e**	**Percent of Total**
Transportation	N/A	N/A	N/A	2,028.63	61
Area Source	1.65	0.00	0.00	2.30	<1
Electricity	530.04	0.00	0.00	530.89	16
Natural Gas	466.47	0.04	0.00	467.67	14
Water & Wastewater	42.95	0.00	0.00	43.02	1
Solid Waste	1.94	13.27	N/A	280.62	8
Total Operational Emissions				**3,353.13**	**100**
Annualized Construction Emissions				**41.83**	
Total Annual Emissions				**3,394.96**	
Total CO_2e Emissions for Oakland				**2,248,667**	
Project Percentage of Oakland Emissions				**0.15**	

Note: Column totals may vary slightly due to independent rounding of input data.
N/A = Estimates not available for this pollutant and/or category.
Source: LSA Associates, Inc., August 2010.

The proposed project would generate up to 3,395 metric tons of CO_2e per year of emissions, as shown in Table IV.E-17 and would exceed the significance threshold of 1,100 metric tons of CO_2e per year. Motor vehicle emissions are the largest source of GHG emissions at approximately 61 percent of the total project emissions. Energy use, including electricity and natural gas, are the next largest category at a combined 30 percent of CO_2e emissions. Solid waste represents approximately 8 percent of the total annual GHG emissions. Other area sources, including landscape equipment, are the remaining

[54] United States Environmental Protection Agency, 2009. Carbon Sequestration in Agriculture and Forestry. Website: http://www.epa.gov/sequestration/faq.html, accessed December 30.

[55] McAliney, Mike, 1993. Arguments for Land Conservation: Documentation and Information Sources for Land Resources Protection, Trust for Public Land, Sacramento, CA, December.

source of GHG emissions and comprise less than 1 percent of the total. Additional details are provided in Appendix C.

As a comparison, the entire State generated approximately 2.2 billion (2,197,992,329) lbs/day of CO_2 in 2004. The estimate provides an indication of the order of magnitude of potential project emissions compared to estimated Statewide emissions. GHG emissions from the proposed project were estimated assuming current building standards and don't include reductions for additional energy efficiency measures that may be installed as part of the project. GHG emissions from the proposed project could vary based on several factors, such as the type and extent of energy efficiency measures that might be incorporated into the building design, and the type and size of appliances installed. In addition, the estimated CO_2 emissions from vehicle trips associated with the project is likely much greater than what would actually occur. Although the future CO_2 emission levels reflect reductions resulting from the increased efficiency of future vehicle models, it does not take into account reductions in vehicle emissions that may occur with implementation of AB 1493 (discussed above under *Regulatory Context for GHG Emissions and Climate Change*).

Further, the methodology applied here assumes that all emission sources 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 build out of the project whether residents of the Emerald Views Residential Development project 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.

The BAAQMD CEQA Guidelines state that a project would have a less than significant GHG emission impact if it would generate less than 1,100 metric tons per year of CO_2e or less than 4.6 metric tons per year per service population (residents plus employees) per year. The City's threshold is the same as the BAAQMD threshold in that a significant impact occurs only if both 1,100 metric tons per year of CO_2e and 4.6 metric tons per year per service population are exceeded. As shown in Table IV.E-17, annual emissions of operational-related GHGs for the proposed project are approximately 3,395 metric tons of CO_2e per year and the project would exceed the significance threshold of 1,100 metric tons of CO_2e per year. Therefore an analysis of the project's emissions per service population was conducted. As discussed in Chapter IV.C Population and Housing, implementation of the proposed project could add approximately 986 residents and employees to the City's population. This would result in emissions of 3.4 metric tons of CO_2e per year per service population, which is below the threshold of significance of 4.6 metric tons; therefore, the proposed project's cumulative greenhouse gas contribution would be less than significant.

Project Design Features. In addition, local regulations and project characteristics would help implement reduction strategies identified in AB-32 and the Governor's Executive Order S-3-05 and would further reduce the less than significant amount of GHG emissions generated during construc-

tion and operation. For informational purposes, these are discussed below. (These local regulations and optional project design energy efficient systems and sustainable features noted in the Project Description section of this Draft EIR, have not been incorporated into the calculation of project GHGs above.[56])

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, Amtrak, 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 further reduced since demolition debris that would otherwise be hauled off-site would be reused on-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.

Transportation Demand Management Programs. The project is required to implement an extensive transportation demand management (TDM) plan (Standard Condition TRANS-1, *Parking and Transportation Demand Management*) to reduce vehicle trips. As discussed in Section IV.D, Transportation and Circulation, 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 and to some extent reduce the number of vehicle trips and encourage transit or rideshar-

[56] The Proposed Project will be required to construct the new building to mandatory Calgreen performance standards. Calgreen is a newly enacted State building code requirement, which is effective January 2011. The City deemed the project application complete prior to adoption of the local Green Building Ordinance. Therefore, the project is not subject to the Ordinance. For purposes of a conservative analysis, the Draft EIR does not include these features in the Greenhouse Gas Emissions section and none are required to reduce a potential Greenhouse Gas Emission impact to less than significant.

ing. As such, the project would further reduce transportation-related GHG emissions by encouraging fewer single-occupant vehicle trips.

d. Consistency with Plans and Policies Related to Greenhouse Gases. The California Environmental Protection Agency Climate Action Team (CAT) and the ARB have developed several reports to achieve the Governor's GHG targets that rely on voluntary actions of California businesses, local government and community groups, and State incentive and regulatory programs. These include the CAT's 2006 "*Report to Governor Schwarzenegger and the Legislature*," ARB's 2007 "*Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California,*" and ARB's "*Climate Change Scoping Plan: a Framework for Change.*" The reports identify strategies to reduce California's emissions to the levels proposed in Executive Order S-3-05 and AB 32. The adopted Scoping Plan includes proposed GHG reductions from direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as cap-and-trade systems.

In addition to reducing GHG emissions to 1990 levels by 2020, AB 32 directed ARB to identify a list of "discrete early action GHG reduction measures" that can be adopted and made enforceable by January 1, 2010. In June 2007 ARB approved a list of 37 early action measures, including three discrete early action measures (Low Carbon Fuel Standard, Restrictions on High Global Warming Potential Refrigerants, and Landfill Methane Capture). Discrete early action measures are measures that are required to be adopted as regulations and made effective no later than January 1, 2010, the date established by Health and Safety Code (HSC) Section 38560.5. The ARB adopted additional early action measures in October 2007 that tripled the number of discrete early action measures.

ARB's focus in identifying the 44 early action items was to recommend measures that ARB staff concluded were "expected to yield significant GHG emission reductions, are likely to be cost-effective and technologically feasible." The combination of early action measures is estimated to reduce State-wide GHG emissions by nearly 16 million metric tons (MMT). Accordingly, the 44 early action items focus on industrial production processes, agriculture, and transportation sectors. Early action items associated with industrial production and agriculture do not apply to the proposed project. The transportation sector early action items such as truck efficiency, low carbon fuel standard, proper tire inflation, truck stop electrification and strengthening light duty vehicle standards are either not specifically applicable to the proposed project or would result in a reduction of GHG emissions associated with the project. State measures include emission reductions assumed as part of the Scoping Plan, including light-duty vehicle GHG standards ("Pavley standards"), low carbon fuel standard, and energy efficiency measures.

There are many project characteristics (e.g., location and design features that help implement reduction strategies identified in AB 32 and the Governor's EO S-3-05) that have been included in the project that would further reduce GHG emissions generated during construction and operation, and that are discussed in the previous impact statement.

An Oakland Energy and Climate Action Plan (ECAP) is being developed to identify, evaluate and recommend prioritized actions to reduce energy consumption and GHG emissions in Oakland. The ECAP will identify energy and climate goals, clarify policy direction, and identify priority actions for reducing energy use and GHG emissions. On July 7, 2009, the Oakland City Council directed staff to develop the draft Oakland ECAP using a preliminary planning GHG reduction target equivalent of 36

percent below 2005 GHG emissions by 2020. The ECAP has been approved for CEQA review, however, because the City has not adopted the Plan at this time, it is unknown if the project would conflict with policies and actions that may be included therein. However, the project does not appear to conflict with current City of Oakland Sustainability Programs or General Plan policies regarding GHG reductions.

The project's GHG emissions generated during construction and operation would be further minimized by virtue of the building characteristics and design features that the project proposes.

In addition, the project would be subject to all the regulatory requirements including the City's Standard Conditions of Approval, which would further reduce GHG emissions of the project. Overall, the project would entail implementing reduction strategies identified in AB 32, the Governor's EO S-3-05, and other strategies to help reduce GHGs to the level proposed by the governor and targeted by the City of Oakland.

As discussed earlier, the proposed project would exceed the BAAQMD's threshold for annual GHG emissions of 1,100 metric tons of CO_2e per year. However, the project would not exceed the service population threshold of 4.6 metric tons of CO_2e annually. The project would result in emissions of 3.4 metric tons of CO_2e per year per service population, which is below the threshold of significance of 4.6 metric tons. Therefore the project would not generate significant CO_2e emissions.

BAAQMD's approach to developing a threshold of significance for GHG emissions is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce statewide GHG emissions. The project's GHG emissions would be below this threshold and therefore the proposed project would not conflict with any applicable plan, policy or regulation for the purpose of reducing greenhouse gas emissions.

e. Significant Impacts. The proposed project's cumulative greenhouse gas contribution would not be significant.

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F. 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 identified, if required, to address significant environmental impacts.

1. Setting

This section describes the fundamentals of noise and also describes the existing noise and vibration setting within the project site and its vicinity.

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.F-1 contains a list of typical acoustical terms and definitions. Table IV.F-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 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

Table IV.F-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.
L_{01}, L_{10}, L_{50}, L_{90}	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, L_{eq}	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, L_{dn}	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.
L_{max}, L_{min}	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: Harris, C.M. Handbook of Acoustical Measurements and Noise Control, 1998.

Table IV.F-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.

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 (L_{eq}) is the total sound energy of time varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq}, the community noise equivalent level (CNEL), and the day-night average level (L_{dn}) 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 L_{eq} 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). L_{dn} is similar to the CNEL scale, but without the adjustment for events occurring during the evening relaxation hours. CNEL and L_{dn} 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.F-2.

Other noise rating scales of importance when assessing the annoyance factor include the maximum noise level (L_{max}), which is the highest exponential time averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis are specified in terms of maximum levels denoted by L_{max} for short-term noise impacts. L_{max} reflects peak operating conditions, and addresses the annoying aspects of intermittent noise.

Noise standards in terms of percentile exceedance levels, L_n, are often used together with the L_{max} 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 L_{10} noise level represents the level exceeded ten percent of the time during a stated period. The L_{50} 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 L_{90} 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 L_{eq} and L_{50} 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 dBA. 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 dBA that are inaudible to the human ear. A change in noise level of at least 5 dBA would be required before any noticeable change in human response would be expected and a 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response. Only audible changes in existing ambient or background noise levels are considered potentially significant.

(2) Physiological Effects of Noise. The effects of noise on people can also be described in three categories: annoyance, interference with activities such as speech or sleep, and physiological effects such as hearing loss. 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.

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. Common sources of ground-borne vibration include trains and construction activities such as blasting, pile driving and operating heavy earthmoving equipment. Typical vibration source levels from construction equipment are shown in Table IV.F-3.

Table IV.F-3: Typical Vibration Source Levels for Construction Equipment

Equipment		Approximate VdB at 25 feet
Pile Driver (impact)	Upper range	112
	Typical	104
Pile Driver (sonic)	Upper range	105
	Typical	93
Clam shovel drop (slurry wall)		94
Hydromill (slurry wall)	In soil	66
	In rock	75
Vibratory roller		94
Hoe ram		87
Large bulldozer		87
Caisson drilling		87
Loaded trucks		86
Jackhammer		79
Small bulldozer		58

Source: Federal Transit Administration, 2006. *Transit Noise and Vibration Impact Assessment.* May.

c. Noise Regulatory Framework. The following section provides brief discussions of the federal, State, and local regulatory framework related to noise.

(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.F-4. 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 $L_{eq(24)}$ of 70 dBA. The "(24)" signifies an L_{eq} 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 L_{dn} of 55 dBA are summarized in Table IV.F-5. At 55 dBA L_{dn}, 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.

(2) 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 L_{dn} in any 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 L_{dn}.

Table IV.F-4: Summary of EPA Noise Levels

Effect	Level	Area
Hearing loss	$L_{eq}(24) \leq 70$ dB	All areas.
Outdoor activity interference and annoyance	$L_{dn} \leq 55$ 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.
	$L_{eq}(24) \leq 55$ dB	Outdoor areas where people spend limited amounts of time, such as school yards, playgrounds, etc.
Indoor activity interference and annoyance	$L_{eq} \leq 45$ dB	Indoor residential areas.
	$L_{eq}(24) \leq 45$ dB	Other indoor areas with human activities such as schools, etc.

Source: United States 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.F-5: Summary of Human Effects in Areas Exposed to 55 dBA L_{dn}

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.

Source: United States Environmental Protection Agency, 1974. "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety." March.

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.

(3) 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's maximum allowable operational noise level standards for residential and commercial land uses in terms of percentile exceedance are shown in Table IV.F-6.

Table IV.F-6 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

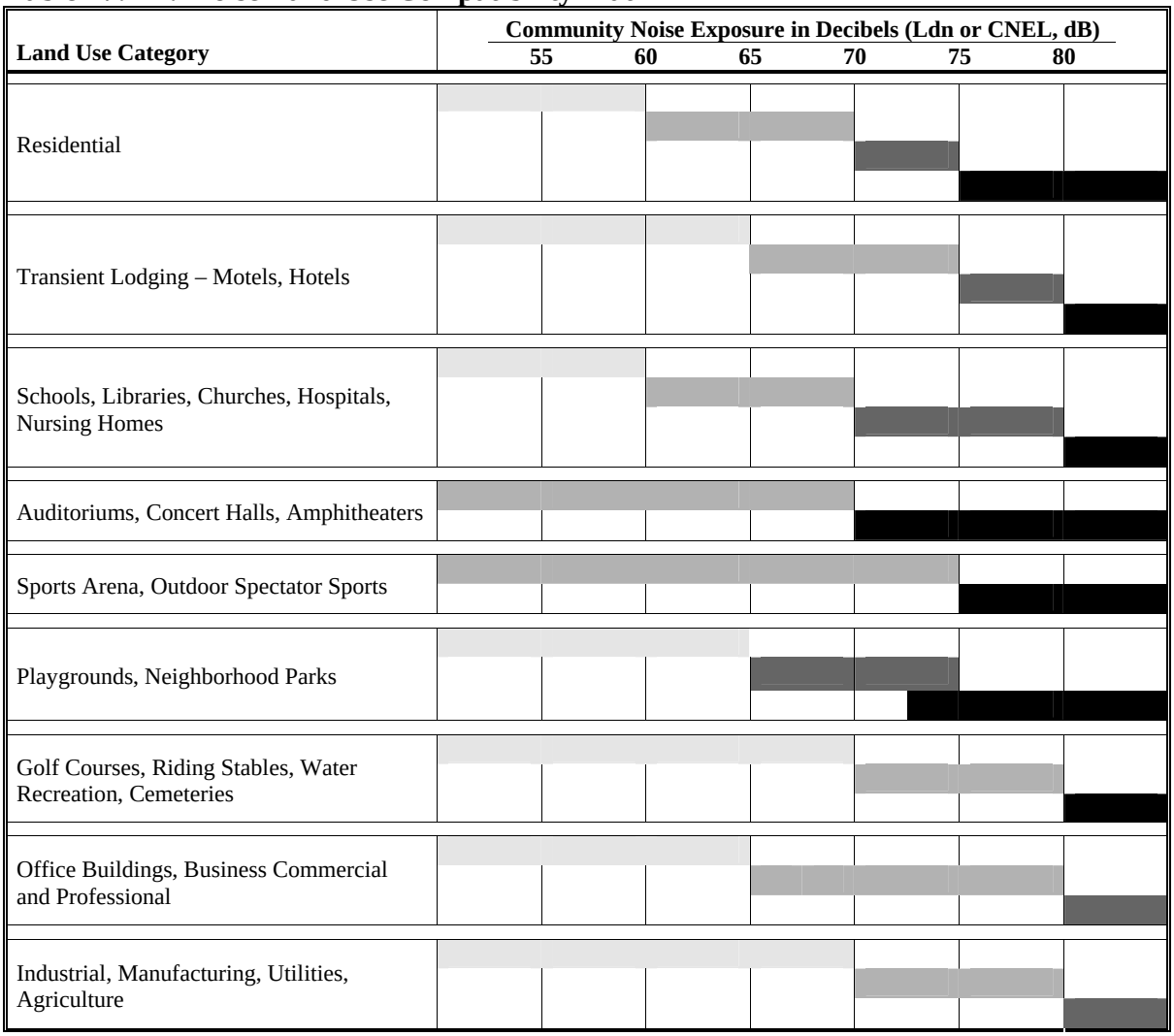
Source: City of Oakland Municipal Code Section 17.120.050 Noise.

The City has also established acceptable exterior noise thresholds for new residential and new commercial land use development of 60 dBA L_{dn} and 65 dBA L_{dn} respectively. As shown in Table IV.F-7, for proposed new residential uses, noise levels exceeding 60 dBA L_{dn} are conditionally acceptable provided a noise analysis identifies necessary noise reduction measures to achieve the interior noise level standard of 45 dBA L_{dn}.

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.F-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.
  - 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.

Table IV.F-7: 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.

- 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[1] also regulate the maximum allowable daytime average receiving noise level for construction activity. These noise levels are shown in Table IV.F-8.

Municipal Code Section 8.18.020 restricts emission of noise levels between the hours of 9:00 p.m. and 7:00 a.m. that would result in disturbing the peace or comfort of any persons. This section outlines compliance provisions for noise emitting construction equipment.

Table IV.F-8 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 property 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.

City of Oakland's 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.

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:

- 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.
- Any construction activity proposed to occur outside of the standard hours of 7:00 am to 7:00 pm Monday through Friday for special activities (such as concrete pouring which may require more continuous amounts of time) shall be evaluated on a case by case basis, with criteria including the proximity of residential uses

[1] Section 17.120 and Section 8.18.

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.

- 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.
- No extreme noise generating activities (greater than 90 dBA) shall be allowed on Saturdays, with no exceptions.
- No construction activity shall take place on Sundays or Federal holidays.
- 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.
- Applicant shall use temporary power poles instead of generators where feasible.

COA NOISE-2: Noise Control. *Ongoing throughout demolition, grading, and/or construction.* A qualified noise consultant shall be retained by the project applicant to develop a site-specific noise reduction program to reduce noise impacts due to construction and submit such to the City Planning and Zoning Division and Building Services Division for City review and approval. Noise reduction strategies to consider include, but are not limited to, the following measures: The applicant shall implement the approved plan.

- 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).
- Except as provided herein, Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used, if such jackets are commercially available and this could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures.
- 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 other measures as determined by the City to provide equivalent noise reduction.
- 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 procedure and phone numbers for notifying the City Building Services Division staff and Oakland Police Department; (during regular construction hours and off-hours);
- 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);
- The designation of an on-site construction complaint and enforcement manager for the project;
- 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
- 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 and Certificate of Occupancy.* If necessary to comply with the interior noise requirements of the City of Oakland's General Plan Noise Element and achieve an acceptable interior noise level, noise reduction in the form of sound-rated assemblies (i.e., windows, exterior doors, and walls), and/or other appropriate features/measures, shall be incorporated into project building design, based upon recommendations of a qualified acoustical engineer and submitted to the Building Services Division for review and approval prior to issuance of building permit. Final recommendations for sound-rated assemblies, and/or other appropriate features/measures, will depend on the specific building designs and layout of buildings on the site and shall be determined during the design phases. Written confirmation by the acoustical consultant, HVAC or HERS specialist, shall be submitted for City review and approval, prior to Certificate of Occupancy (or equivalent) that:

- Quality control was exercised during construction to ensure all air-gaps and penetrations of the building shell are controlled and sealed; and
- Demonstrates compliance with interior noise standards based upon performance testing of a sample unit.
- Inclusion of a Statement of Disclosure Notice in the CC&R's on the lease or title to all new tenants or owners of the units acknowledging the noise generating activity and the single event noise occurrences. Potential features/measures to reduce interior noise could include, but are not limited to, the following:
    - Installation of an alternative form of ventilation in all units identified in the acoustical analysis as not being able to meet the interior noise requirements due to adjacency to a noise generating activity, filtration of ambient make-up air in each unit and analysis of ventilation noise if ventilation is included in the recommendations by the acoustical analysis**.**
    - Prohibition of Z-duct construction.

COA NOISE-5: Operational Noise-General. *Ongoing.* Noise levels from the activity, property, or any mechanical equipment on site shall comply with the performance standards of Section 17.120 of the Oakland Planning Code and Section 8.18 of the Oakland Municipal Code. If noise levels exceed these standards, the activity causing the noise shall be abated until appropriate noise reduction measures have been installed and compliance verified by the Planning and Zoning Division and Building Services.

COA NOISE-6: Extreme Noise Generators. *Ongoing throughout demolition, grading, and/or construction.* To further reduce potential 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 Planning and Zoning Division and the Building Services Division to ensure that maximum feasible noise attenuation will be achieved. This plan shall be based on the final design of the project. A third-party peer review, paid for by the project applicant, may be required to assist the City in evaluating the feasibility and effectiveness of the noise reduction plan submitted by the project applicant. 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:

- Erect temporary plywood noise barriers around the construction site, particularly along sides adjacent to residential buildings;
- Utilize noise control blankets on the building structure as the building is erected to reduce noise emission from the site;
- 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
- Monitor the effectiveness of noise attenuation measures by taking noise measurements.

To further implement this Standard Condition of Approval, the applicant shall implement quiet pile driving technology (screw piles only).

COA NOISE-7 (same as COA CULT-4): Construction 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 adjacent structures, including the 244 Lakeside Drive apartment building, the Schilling Garage, and the Regillus apartments and garage, and design means and methods of construction that shall be utilized to not exceed the thresholds.

To further implement this Standard Condition of Approval:

a) The applicant shall retain an historic preservation architect (who meets the Secretary of the Interior's Standards and Guidelines for Historic Preservation Professional Qualifications) and a structural engineer (Monitoring Team), who shall undertake an Existing Conditions Study (Study) of the 244 Lakeside Drive building, the Schilling Garage, and the Regillus apartments and garage. The purpose of the Study is to establish the baseline condition of the building(s) prior to construction of the Project, including but not limited to the location and extent of any visible cracks or spalls on the building(s), and condition of the roof. The Study shall include written descriptions and photographs of the building(s) and include, without limitation, those physical characteristics that justify their inclusion on or eligibility for the Local Register. The Study shall be reviewed and approved by the City of Oakland's CEDA Deputy Director and Building Official.

b) Initial construction activities shall be monitored by the Monitoring Team and if vibrations are above threshold levels, appropriate measures shall be taken to reduce vibrations to below established levels. The Monitoring Team shall continue to regularly monitor the buildings during construction and report any changes to the existing conditions, including but not limited to, expansion of cracks, new spalls, or other exterior deterioration, including roof damage. If there are such changes, appropriate corrective measures shall be taken to reduce vibrations to below established levels, or other measures taken to prevent damage to the building(s).

c) Written monitoring reports shall be submitted to the City's CEDA Deputy Director and Building Official on a periodic basis as determined by the Monitoring Team. The structural engineer shall consult with the historic preservation architect, especially if any problems with character defining features of a historic resource are discovered. If in the opinion of the structural engineer, in consultation with the historic preservation architect, substantial adverse impacts to historic resources related to construction activities are found during construction, the Monitoring Team shall immediately inform, both orally and in writing, the project sponsor and/or the project sponsor's designated representative

responsible for construction activities and the City Planning and Zoning Division. The project sponsor shall follow the Monitoring Team's recommendations for corrective measures, including halting construction activities in situations where further construction work would damage historic resources, or taking other measures to protect the building. The historic preservation officer shall establish the frequency of monitoring and reporting prior to the issuance of a demolition, grading, or building permit.

d) The project sponsor shall respond to any claims of damage by inspecting the affected property promptly, but in no case more than five working days after the claim was filed and received by the project sponsor's designated representative. Any new cracks or other changes in the structures, including roof damage, shall be compared to pre-construction conditions and a determination shall be made as to whether the proposed project could have caused the damage. In the event that the project is demonstrated to have caused any damage, such damage shall be repaired to the pre-existing condition, provided the property owner approves of such.

e) The historic preservation architect shall establish a training program for construction workers involved in the project that emphasizes the importance of protecting historic resources. The program shall include information on recognizing historic materials and directions on how to exercise care when working around and operating equipment near historic structures, including storage of materials away from historic buildings. It shall also include information on means to reduce vibrations from demolition and construction, and preventing other damage, and monitoring and reporting any potential problems that could affect the historic resources in the area. A provision for establishing this training program shall be included in the construction contract, and the contract provisions shall be reviewed and approved by the City of Oakland.

d. Existing Noise Environment. The project is located in an urban area and is, therefore, influenced by several surrounding noise sources. Primary noise sources that affect the background noise level of the area include vehicular traffic on Harrison Street, 19th Street, and Lakeside Drive.

(1) Existing Ambient Noise Levels. Existing noise levels were measured on the project site and in the project vicinity on January 31, 2007, between 9:30 a.m. and 11:00 a.m. for a period of 20 minutes at two locations. Noise monitoring results are shown in Table IV.F-9. Results indicate that current noise levels in the project vicinity range from 53.8 to 65.6 dBA L_{eq}. Meteorological conditions at the time of the ambient noise monitoring are shown in Table IV.F-10.

(2) Existing Sensitive Land Uses. Existing land uses surrounding the project site consist of residential, office, commercial/retail, light industrial, parking structure and lots, roadways, a public open park (Snow Park), and Lake Merritt. The construction and operation of the proposed project could affect these surrounding land uses.

Table IV.F-9: Short-Term Ambient Noise Monitoring Results, dBA

Location Number	Location Description	Start Time	L_{eq} [a]	L_{max} [b]	L_{min} [c]	Primary Noise Sources
1	Garden behind 244 Lakeside Drive apartment building (project site)	9:45 a.m.	53.8	84.0	46.9	Traffic on 19th Street and Lakeside Drive
2	Lakeside Drive near corner of 17th Street	10:20 a.m.	65.6	79.6	50.0	Traffic on Lakeside drive

[a] L_{eq} represents the average of the sound energy occurring over the 20-minute time period.
[b] L_{max} is the highest instantaneous sound level measured during the 20-minute time period.
[c] L_{min} is the lowest instantaneous sound level measured during the 20-minute time period.
Source: LSA Associates, Inc., July 2008.

Table IV.F-10: Meteorological Conditions During Ambient Noise Monitoring

Location Number	Maximum Wind Speed (mph)	Average Wind Speed (mph)	Temperature (F)	Relative Humidity (%)
1	1.5	0.6	51.1	84
2	3.0	0.9	53.6	78

Source: LSA Associates, Inc., July 2008.

(3) Existing Traffic Noise. Existing traffic noise levels were calculated using the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model. Traffic data used in the model were obtained from the traffic impact analysis prepared by DMJM Harris and included in Section V.C of this EIR. Table IV.F-11 lists the calculated traffic noise levels in the project study area under the existing (2008) conditions. Existing traffic noise in the project vicinity is generally moderate, except along Harrison Street from Grand Avenue to 21st Street, where the 65.0 dBA L_{dn} contour extends beyond the roadway right-of-way. Existing traffic noise levels along this roadway segment range up to 63.6 L_{dn} at 50 feet from the centerline of the outermost travel lane. The traffic noise model printouts are included in Appendix D. The City considers environments with noise levels of up to 60.0 dBA L_{dn} as normally acceptable for residential development; environments with noise levels between 60.0 dBA and 70.0 dBA L_{dn} are considered conditionally acceptable and require acoustic analysis to determine necessary mitigation to maintain an interior noise level of 45 dBA L_{dn}.

Table IV.F-11: Existing Traffic Noise Levels, dBA

Roadway Segment	ADT [a]	Center-line to 70 L_{dn} (feet)	Center-line to 65 L_{dn} (feet)	Center-line to 60 L_{dn} (feet)	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane
Lakeside Drive - Jackson Street to Madison Street	12,000	< 50	< 50	68	60.0
Lakeside Drive - Jackson Street to Harrison Street	13,200	< 50	< 50	73	60.5
Harrison Street - Grand Avenue to 21st Street	27,000	< 50	56	115	63.6
Jackson Street - 17th Street to 19th Street	2,900	< 50	< 50	< 50	54.9
Alice Street - 17th Street to 19th Street	1,700	< 50	< 50	< 50	52.6
Harrison Street - 19th Street to 20th Street	9,300	< 50	< 50	58	58.9
19th Street - Alice Street to Jackson Street	1,500	< 50	< 50	< 50	52.1
19th Street - Harrison Street to Alice Street	3,000	< 50	< 50	< 50	55.1
20th Street - Webster Street to Harrison Street	6,700	< 50	< 50	< 50	57.5

[a] Average Daily Traffic (ADT) calculated from traffic volumes provided by DMJM Harris. Model rounds ADT up to the nearest 100 trips.

Source: LSA Associates, 2009.

(4) Existing Aircraft and Railroad Noise. The San Francisco International Airport is located approximately 13.5 miles southwest of the project site (across the Bay) and the Oakland International Airport is located approximately 4.7 miles south/southeast of the site. The project site is located outside of the 65-CNEL noise contours for the both the San Francisco International Airport and the Oakland International Airport.

The closest railroad lines are located approximately 1 mile south of the proposed project site. Bay Area Rapid Transit (BART) lines are all below grade in the project vicinity and are not a significant contributor of noise in the project vicinity.

2. Impacts and Mitigation Measures

This section discusses potential noise and vibration impacts that could result from implementation of the proposed project. The section begins with the significance criteria, which establish the thresholds used to determine whether an impact is significant.[2] The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, 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 (see Table IV.F-6).
- Violate the City of Oakland Noise Ordinance (Oakland Planning Code Section 17.120.050) regarding construction noise, except if an acoustical analysis is performed.
    - 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.F-6).
- Violates 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 L_{dn} 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. If the cumulative increase in noise results in a 5 dBA permanent increase in ambient noise levels in the project vicinity above existing levels without the project (i.e., cumulative conditions including the proposed project compared to existing conditions), the project's contribution to the cumulative increase would be cumulatively considerable and significant if it results in a 3 dBA permanent increase attributable to the project (i.e., cumulative conditions including the proposed project compared to cumulative conditions without the proposed project).[3]

[2] Oakland, City of, 2008. CEQA Thresholds/Criteria of Significance Guidelines, p. 5. May 13.

[3] Outside of the laboratory, a 3 dBA change is considered a perceptible change to the human ear as discussed in this section. Therefore, 3 dBA is considered an appropriate additional screening criterion to determine if project related noise increases are cumulatively considerable.

- Conflicts 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*) (see Table IV.F-7).
- Expose persons to or generate rail-related groundborne vibration levels in excess of standards established by the Federal Transit Administration (FTA).
- 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 Impacts. Sources of the 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.F-6. COA NOISE-5 mandates that noise levels from the activity, property, or any mechanical equipment on site shall comply with the performance standards of Section 17.120 of the Oakland Planning Code and Section 8.18 of the Oakland Municipal Code. Stationary noise sources that may be associated with the project include mechanical ventilation, the parking garage, and the outdoor cafe. The proposed project would not include manufacturing processes or mechanical ventilation equipment that would generate excess noise or vibration levels. Noise generated by 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 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) Traffic Noise Sources. Traffic generated by the proposed project would not be significant enough to result in any perceptible changes in ambient noise levels in the project vicinity. In addition, anticipated near-term year (2015) traffic noise levels under the with project condition are expected to be within the City's normally acceptable range for residential development.

The existing and future traffic noise levels on roadway segments surrounding the project site were calculated using the FHWA Highway Traffic Noise Prediction Model. Existing year (2008) and Near Term (2015) and Cumulative (2030) traffic conditions scenarios were evaluated. Impacts under Cumulative (2030) conditions are discussed under the Cumulative Impacts discussion below. The resulting noise levels were weighted and summed over a 24-hour period in order to determine the L_{dn} values. L_{dn} contours are derived through a series of computerized iterations to isolate the 60, 65, and 70 dBA L_{dn} 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.F-11 of the existing conditions discussion, Section IV.F.1.d. Table IV.F-12 lists the traffic noise levels for Near Term (2015) conditions *without* and *with* the project respectively and Cumulative (2025) conditions *without* and *with* the project respectively.

Table IV.F-12: Modeled Noise Levels at 50 feet from Roadway Centerline dBA

Roadway Segment	Existing	Near Term (2015) No Project	Near Term (2015) With Project	Difference Between Near Term (2015) With Project and Near Term (2015) No Project	Cumulative (2030) No Project	Cumulative (2030) With Project	Difference Between Cumulative With Project and Existing	Difference Between Cumulative and Cumulative With Project	Significant Project Contribution to Cumulative Impact?
Lakeside Drive:									
Jackson Street to Madison Street	60.0	61.0	61.0	0.0	61.9	61.9	1.9	0	No
Jackson Street to Harrison Street	60.5	61.8	62.0	0.2	61.8	62.9	2.4	0.1	No
Harrison Street:									
Grand Avenue to 21st Street	63.6	65.0	65.1	0.1	65.6	65.7	2.1	0.1	No
19th Street to 20th Street	58.9	60.8	60.9	0.1	61.9	61.9	3.0	0	No
Jackson Street:									
17th Street to 19th Street	54.9	55.4	55.5	0.1	56.0	56.0	1.1	0	No
Alice Street:									
17th Street to 19th Street	52.6	53.1	53.5	0.4	53.7	54.1	1.5	0.4	No
19th Street:									
Alice Street to Jackson Street	52.1	52.9	54.9	2.0	54.1	55.8	3.7	1.7	No
Harrison Street to Alice Street	55.1	55.8	56.1	0.3	56.6	56.9	1.8	0.3	No
20th Street:									
Webster Street to Harrison Street	57.5	60.0	60.2	0.2	61.3	61.3	3.8	0	No

Source: LSA Associates, 2009.

Based on the significance criteria, a 5 dBA permanent increase in ambient noise levels in the project vicinity above levels existing without the project or a 3 dBA permanent increase in noise attributable to the project would be considered a significant impact. The largest increase in traffic-related noise on City roadway segments with implementation of the project would be on 19th Street from Alice Street to Jackson Street, which would be an increase of 3.7 dBA under the cumulative with project conditions from existing conditions with a 2.0 dBA increase attributable to the proposed project. Although this cumulative noise increase over the 20 year period is above the 3 dBA increase considered to be perceptible by the human ear in an outdoor environment, it is below the significance threshold of 5 dBA for cumulative conditions and under the 3 dBA attributable to the proposed project threshold. Additionally, no significant traffic noise impacts would occur for off-site land uses under near-term (2015) conditions with the project. As a result, no mitigation is required to address off-site project-related traffic noise impacts.

Projected traffic noise levels on the modeled roadway segments adjacent to the project site would range from 54.9 dBA to 62.0 dBA L_{dn} at 50 feet from the centerline of the outermost lane under near-term year 2015 conditions with the project. However, the highest of these projected traffic noise levels along the segment of Lakeside Drive (from Jackson Street to Harrison Street) nearest the project site would be reduced due to distance attenuation to below 55 dBA L_{dn} at the project site's closest property line. Therefore, projected traffic noise levels on roadway segments adjacent to the project site would be below the "normally acceptable" standard for new residential development of 60 dBA L_{dn} established by the City's land use compatibility chart shown in Table IV.F-7. Therefore, no mitigation would be required to address on-site traffic-related noise impacts under near-term (2015) conditions with implementation of the proposed project.

(3) Construction-Related Noise Sources. Two types of short-term noise impacts would occur during demolition 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 grading and construction would be moved to the site and remain for the duration of each construction phase. The proposed project would require the off-haul of approximately 212,000 cubic yards of soil; the excavation phase of project construction is likely to require the most daily truck trips and would last approximately five months. The increase in traffic flow on the surrounding roads due to construction traffic is expected. However, the noise levels associated with trucks arriving at and departing from the project site would be short-term and intermittent.

The second type of short-term noise impact is related to the noise generated by heavy equipment operating on the project site. Construction 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.F-14 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.F-13, the maximum noise level generated by each hydraulic excavator on the proposed project site is anticipated to be 86 dBA L_{max} at 50 feet from the earthmover. Each bulldozer would generate 85 dBA L_{max} at 50 feet. The maximum noise level generated by water and pickup trucks is approximately 86 dBA L_{max} at 50 feet from these vehicles. Each generator would generate 80 dBA L_{max} at 50 feet. 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 L_{max} at a distance of 50 feet from an active construction area. The nearest noise sensitive land use would be located as close as within 10 feet of active construction areas within the project site; these sensitive land uses include the 244 Lakeside Drive apartments and the Regillus apartments. At this distance these sensitive land uses would be exposed to construction noise levels of up to 104 dBA L_{max}.

Table IV.F-13 Typical Construction Equipment Maximum Noise Levels, L_{max}

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	74 to 84	80
Scrapers	83 to 91	87
Haul Trucks	83 to 94	88
Cranes	79 to 86	82
Portable Generators	71 to 87	80
Rollers	75 to 82	80
Dozers	77 to 90	85
Tractors	77 to 82	80
Front-End Loaders	77 to 90	86
Hydraulic Backhoe	81 to 90	86
Hydraulic Excavators	81 to 90	86
Graders	79 to 89	86
Air Compressors	76 to 89	86
Trucks	81 to 87	86

Source: Bolt, Beranek & Newman, 1987. *Noise Control for Buildings and Manufacturing Plants*.

Construction of the project is to occur over an approximately 33-month period. During this period, a wide variety of construction and demolition equipment would be used and materials would be transported to and from the site during each development phase. Primary access for all material delivery and off-haul would be provided by Lakeside Drive, with secondary access on 19th Street as necessary, with the exception of elevator construction, roof construction and interior work, where access would be provided exclusively from Lakeside Drive. It is anticipated larger mechanical equipment such as tractors, scrapers and trucks would be used during the demolition phase. The excavation of the subsurface parking garage would require the use of generators used in the dewatering processes. Construction activities would include the use of smaller power tools, generators and other sources of noise.

While pile drivers and rock drills are some of the loudest pieces of construction equipment, they would not be used in construction of the proposed project. Instead of pile driving, screw piles would be used in construction of the foundation of the proposed project. Screw piles consist of steel or concrete piles with either the tip or the entire pile formed in a helical screw shape that are literally screwed into the ground. The significant advantage of screw piles over driven piles is lower noise and vibration. To address impacts from extreme noise generating construction activities that may expose sensitive receptors to noise levels greater than 90 dBA L_{max}, COA NOISE-6 mandates 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, and that, as a project specific Condition of Approval, screw piles must be used.

The impacts from construction noise would be reduced to less-than-significant levels with implementation of COA NOISE-1, COA NOISE-2, COA NOISE-3, COA NOISE-4, and COA NOISE-6. Compliance with the Standard Conditions of Approval applicable to construction hours of operation, noise control, noise complaint procedures, and extreme noise generators, would ensure that the project complies with the City's Noise Ordinance. This potential impact would be less than significant with implementation of the City's Conditions of Approval which would be included as part of the project.

(4) Groundborne Noise and Vibration Sources. Construction activities associated with implementation of the project could temporarily expose persons in the vicinity of the proposed project construction areas to excessive ground-borne vibration or ground-borne noise levels.

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." Vibrating objects in contact with the ground radiate vibration waves through various soil and rock strata to the foundations of nearby buildings. 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. The damage threshold for buildings considered of particular historical significance or that are particularly fragile structures is approximately 96 VdB; the damage threshold for other structures is approximately 100 VdB.[4]

Pile driving can be a potential source of groundborne vibration. However, the project would not employ pile driving as a construction method; instead, screw piles will be used. Screw cast piles are a drilled or cast in situ pile, not a driven pile. This eliminates the hammer impact noise and vibration created by driving piles.

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. While this is below the damage threshold for historic or fragile buildings, ground-borne vibration-producing construction-related activities could occur as close as within 10 feet of the historic structures surrounding the project site (244 Lakeside Drive apartments, the Schilling garage, and the Regillus apartments and garage) during buildout of the proposed project.

The project would comply with the construction hours specified in the City's Noise Ordinance and the City's Standard Conditions of Approval would be implemented. Implementation of the Conditions of Approval, including COA NOISE-6 (which requires implementation of mitigation measures to reduce noise and vibration impacts from extreme noise generators such as heavy construction equipment) and COA NOISE-7 (which requires a vibration analysis be performed to establish damage thresholds and to design means and methods of construction to be utilized to not exceed the identified thresholds) would ensure potential ground-borne vibration would be avoided or reduced to a less-than-significant level. Implementation of Mitigation Measure CULT-3, which requires existing conditions studies of the adjacent historic structures, monitoring of these structures during construction, monitoring reports,

[4] Harris, C.M. 1998. *Handbook of Acoustical Measurements and Noise Control.*

and response to any claims of damage would further ensure that vibration levels from project construction activities in proximity to adjacent historic resources would be less than significant.

The proposed project is not located near an existing rail line. Therefore, the project would not expose persons to or generate excessive groundborne vibration levels from rail-related sources.

c. Significant Impacts. As discussed in Section a., above, the proposed project would not result in any significant noise and vibration-related impacts.

d. Cumulative Impacts. The cumulative noise impacts associated with implementation of the proposed project are discussed below.

(1) Stationary Noise Sources. Similar to the Less-than-Significant Impacts discussion, noise from project related stationary noise sources would result in less-than-significant impacts on noise sensitive land uses in the project vicinity. Stationary noise sources such as mechanical ventilation, the parking garage, and the outdoor cafe would be similar to noise levels existing in the vicinity of the project site and would not create a significant increase in ambient noise levels in the project vicinity.

(2) Traffic Noise Sources. Similar to the Less-than-Significant Impacts discussion, cumulative year (2030) traffic noise levels under the with project condition would result in a less-than-significant change in ambient noise levels in the project vicinity, and are expected to be within the City's normally acceptable range for residential development. The cumulative traffic noise levels on roadway segments surrounding the project site were calculated using the FHWA Highway Traffic Noise Prediction Model. Table IV.F-12 lists the traffic noise levels for cumulative (2030) conditions *without* and *with* the proposed project respectively.

Based on the significance criteria, a 5 dBA permanent increase in ambient noise levels in the project vicinity above levels existing without the project would be considered a significant impact. Table IV.F-12 shows that the increase from conditions without the project to conditions with the project would be a less-than-significant increase. The largest increase in traffic-related noise on City roadway segments with implementation of the project would be on 19th Street from Alice Street to Jackson Street, which would be an increase of 3.7 dBA from existing levels. This noise level increase is below the significance threshold of 5 dBA. No significant traffic noise impacts would occur for off-site land uses. As a result, no mitigation is required to address off-site project-related cumulative traffic noise impacts.

Projected traffic noise levels on the modeled roadway segments adjacent to the project site would range from 55.8 dBA to 62.9 dBA L_{dn} at 50 feet from the centerline of the outermost lane under cumulative year 2030 conditions with the project. However, the highest of these projected traffic noise levels along the segment of Lakeside Drive (from Jackson Street to Harrison Street) nearest the project site would be reduced due to distance attenuation to below 56 dBA L_{dn} at the project site's closest property line. Therefore, projected traffic noise levels on roadway segments adjacent to the project site would be below the "normally acceptable" standard for new residential development of 60 dBA L_{dn} established by the City's land use compatibility chart shown in Table IV.F-7. Therefore, no mitigation would be required to address on-site cumulative traffic-related noise impacts.

G. AESTHETICS, SHADOW AND WIND

This section evaluates the effects of the proposed project on visual resources in the vicinity of the project site, as well as shade/shadow impacts and wind impacts.

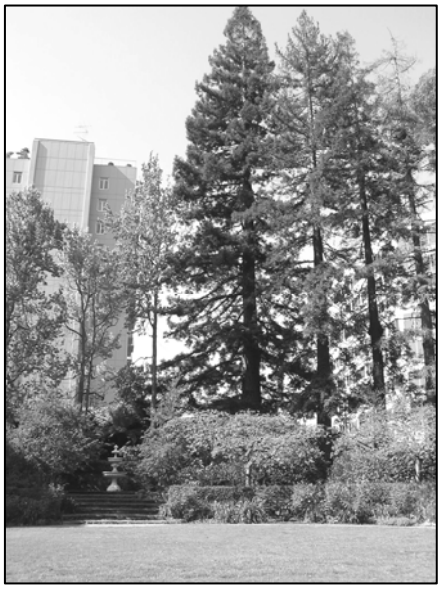
This section is based on: (1) field surveys of the project site; (2) a review of the data provided by the project applicant, including visual simulations and perspective drawings; (3) view simulations that show "before and "after" representations of the proposed project prepared by Environmental Vision; (4) shade/shadow simulations of existing buildings and of the proposed building prepared by Environmental Vision; and (5) a Wind Impacts Memorandum prepared by Donald Ballanti, Certified Consulting Meteorologist.

1. Setting

The following section describes the visual quality of the project site and views of the project site from surrounding areas, in addition to existing shade and shadow conditions in the project area.

a. Local Context. The physical environment surrounding the project site is characterized by predominately residential areas located to the south and east of the project site, and commercial office buildings located to the west and northwest of the project site beyond Snow Park. Building heights in the area range from 28 stories to the north of the site to shorter residential and office buildings to the west and south of the site. The project site area is a transition zone between the residential areas to the south in the Gold Coast District and commercial areas located to the north and west of the site in the Kaiser Center and Lake Merritt District.

b. Visual Character of the Project Site. The project site currently contains a private, English garden associated with the historic August Schilling Estate. There is a manicured lawn on the north and central portion of the site. The lawn is surrounded by a semi-circular walkway that forms the boundary between the lawn and the formal garden areas to the east, south and west. The garden areas slope upward away from the lawn.



View of lawn

The eastern garden area includes azaleas, tree ferns, holly trees, and laurel trees. The southern portion of the garden is the largest of the garden areas, and includes: steps up to a landing with a fountain; lower areas planted with trees, shrubs, and flowers; and an upper area containing mature redwood trees, a concrete arbor with wisteria and climbing roses (also known as the "hanging gardens"), two small green houses, and a decorative gate and paved entrance providing restricted access from 19th Street. The western garden area includes magnolia trees, Japanese maple trees, cedar trees, quince, roses, and a variety of other plants. There are footpaths and benches throughout the garden areas.

A chain link fence surrounds the site and is intermittently covered with vines and shrubs. The southern and eastern edges of the project site contain a rock embankment that is covered in ivy and

rises to a maximum height of nine feet above the adjacent property. The eastern embankment drops down to the driveway at the Regillus building and the southern embankment drops down to 19th Street. Please refer to Section IV.A, Land Use, for additional details regarding the physical characteristics of the project site.

View of rock embankment

c. Visual Character of the Surrounding Area. Following is a brief discussion of the visual character of the areas surrounding the project site.

- *North*. Directly north of the project site is the 244 Lakeside Drive apartment building, with Lakeside Drive along the north side of the apartment building. The 244 Lakeside Drive apartment building is a 12-story historic concrete structure crowned with a highly decorated twelfth floor level. The building has an H-shaped floor plan, resulting in two distinct building shafts. The ornamentation is Spanish Renaissance/Baroque style and includes twisted columns with highly decorated friezes, decorative panels, cartouches, human figures and animal heads. A two-story garage is located on the northeastern edge of the site. The two-story garage is covered in vines and due to the slope of the site, only the second floor is visible from the project site.
- *East*. The 8-story Regillus apartment building is located to the east the project site. The Regillus apartment building is characterized by Beaux Arts style architecture that incorporates many Renaissance and Baroque elements. There are additional apartment buildings further east of the site, with Lake Merritt Park located at the terminus of 19th Street.
- *South*. 19th Street forms the southern border of the project site; across 19th Street are mid-rise office and residential buildings. The office and residential buildings can be generally classified as architecturally modern mid-rises.
- *West*. Directly west of the project site is Snow Park, which is characterized by a gently sloping lawn area with large mature oak, pine, eucalyptus, and palm trees. The park contains picnic tables, benches, putting greens, and small maintenance structures. Further west of the site are modern office buildings along Harrison Street that are between 6 and 22 stories tall.

d. Views from the Project Site. Views from the project site are limited due to the development surrounding the project site. Views to the north of the site are dominated by the 12-story 244 Lakeside Drive apartment building, while views to the east consist primarily of the 8-story Regillus apartment building. Views to the south across 19th Street consist of long views down Alice Street between the existing residential and office high-rise building on either side of Alice Street. Views to the west are comprised of the open space of Snow Park and the mid-rise office buildings. However, views from within the project site are limited due to the landscaping and the chain-link fence that surround much of the site.

e. Views of the Project Site. Views of the project site from the surrounding area are generally limited due to the developed nature of areas immediately surrounding the project site, specifically the existing apartment buildings to the north and east of the site. In addition, views of the site from Snow Park and Alice Street are limited by the vine-covered fencing that surrounds the site. The existing

mature redwood trees within the project site are visible from vantage points within Lake Merritt Park, as well as from other areas in the vicinity of the site. The following subsection describes views of the project site, from several of the photo simulation viewpoints. Photos of these existing viewpoints are shown in Figure IV.G-2 through Figure IV.G-7, with Figure IV.G-1 showing the locations of the viewpoints.

- *Views from the west (Viewpoint 1).* Views from 19th Street at Harrison Street looking southeast across Snow Park, offer expansive views of Snow Park. Views of the project site are limited by trees located throughout the park, along with the vine-covered fence surrounding the site. Beyond the project site, views of the Regillus apartment building are intermittently visible through the mature garden trees, as shown in Figure IV.G-2
- *Views from the south (Viewpoint 2).* As shown in Figure IV.G-3, the project site is visible from the Alice Street corridor. Views of the project site from Alice Street consist of the vine-covered fence and the chain link gate on the southwestern corner of the site. The vegetation within the project site and the tall redwood trees are also visible from the south. Views of the site from Alice Street are framed by the existing mid-rise residential and commercial office buildings along either side of Alice Street.
- *Views from the east (Viewpoint 3).* From the public pier at the end of 19th Street, the project is not directly visible due to the Regillus apartment building and other residential structures surrounding the site, as shown in Figure IV.G-4. The northern portion of Snow Park is also visible from this vantage point.
- *Views from Athol Plaza (Viewpoint 4).* The project site is not directly visible from the southeastern shore of Lake Merritt, as shown in Figure IV.G-5. Views of the project site from this portion of Lake Merritt are obscured by the 244 Lakeside Drive and Regillus apartment buildings. This distance viewpoint shows the mid-rise skyline in the vicinity of western Lake Merritt.
- *Views from the north (Viewpoint 5).* Views of the project site from Harrison Street, looking south, are limited by the 12-story 244 Lakeside Drive apartment building and by trees located in Snow Park. This view is shown in Figure IV.G-6.
- *View from I-580 (Viewpoint 6).* Mid-rise buildings located west of I-580 block views of the project site from the scenic portion of this highway, as is shown in Figure IV.G-7.
- *View from Mountain View Cemetery (Viewpoint 7).* From the cemetery looking southwest, the project site is not directly visible due to the developed nature of Oakland. The Oakland skyline is highlighted in this viewpoint, as is shown in Figure IV.G-8.

f. Shade and Shadow. Shadow pattern simulations were prepared by Environmental Vision for the existing conditions surrounding the project site for the following dates: June 21 (the summer solstice when the sun is at its highest point in the sky); December 21 (the winter solstice, when the sun is at its lowest point in the sky); March 21 and September 21 (the spring and fall equinoxes, respectively, when the day and night are approximately the same lengths). Simulations were prepared for three times during each day: 9:00 a.m. (morning); 12:00 p.m. (noon); and 3:00 p.m (afternoon). The shadow simulations assume sunny conditions, and do not take into account fog or overcast conditions. See Figures IV.G-9 through IV.G-20 for shadow patterns.

LSA

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LEGEND

PROJECT SITE

PHOTO LOCATIONS

SOURCE: GOOGLE EARTH, 2008.

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FIGURE IV.G-1

Emerald Views Residential Development EIR

Visual Simulation Viewpoint Locations

Existing view from 19th Street at Harrison Street looking southeast

Visual simulation of proposed project

LSA

FIGURE IV.G-2

Emerald Views Residential Development EIR
Visual Simulation Viewpoint 1-
from 19th Street at Harrison Street Looking Southeast

SOURCE: ENVIRONMENTAL VISION, 2008

Existing view from Alice Street at 14th Street looking northeast

Visual simulation of proposed project

LSA

FIGURE IV.G-3

Emerald Views Residential Development EIR

Visual Simulation Viewpoint 2-
from Alice Street at 14th Street Looking Northeast

SOURCE: ENVIRONMENTAL VISION, 2008

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Existing view from public pier at end of 19th Street looking northwest

Visual simulation of proposed project

LSA

FIGURE IV.G-4

Emerald Views Residential Development EIR

Visual Simulation Viewpoint 3-
from Public Pier at 19th Street Looking Northwest

SOURCE: ENVIRONMENTAL VISION, 2008

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Existing view from Lakeshore Avenue near Athol Plaza looking northwest

Visual simulation of proposed project

LSA

FIGURE IV.G-5

Emerald Views Residential Development EIR

Visual Simulation Viewpoint 4-
from Lakeshore Avenue Looking Northwest

SOURCE: ENVIRONMENTAL VISION, 2008

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Existing view from Harrison Street looking south

Visual simulation of proposed project

LSA

FIGURE IV.G-6

Emerald Views Residential Development EIR
Visual Simulation Viewpoint 5-
from Harrison Street Looking South

SOURCE: ENVIRONMENTAL VISION, 2008

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Existing view from I-580 at Grand Avenue looking west

Visual simulation of proposed project

LSA

FIGURE IV.G-7

Emerald Views Residential Development EIR
Visual Simulation Viewpoint 6-
from I-580 Looking West

SOURCE: ENVIRONMENTAL VISION, 2008

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Existing view from Mountain View Cemetery looking southwest

Visual simulation of proposed project

LSA

FIGURE IV.G-8

Emerald Views Residential Development EIR

Visual Simulation Viewpoint 7-
from Mountain View Cemetery Looking Southwest

SOURCE: ENVIRONMENTAL VISION, 2008

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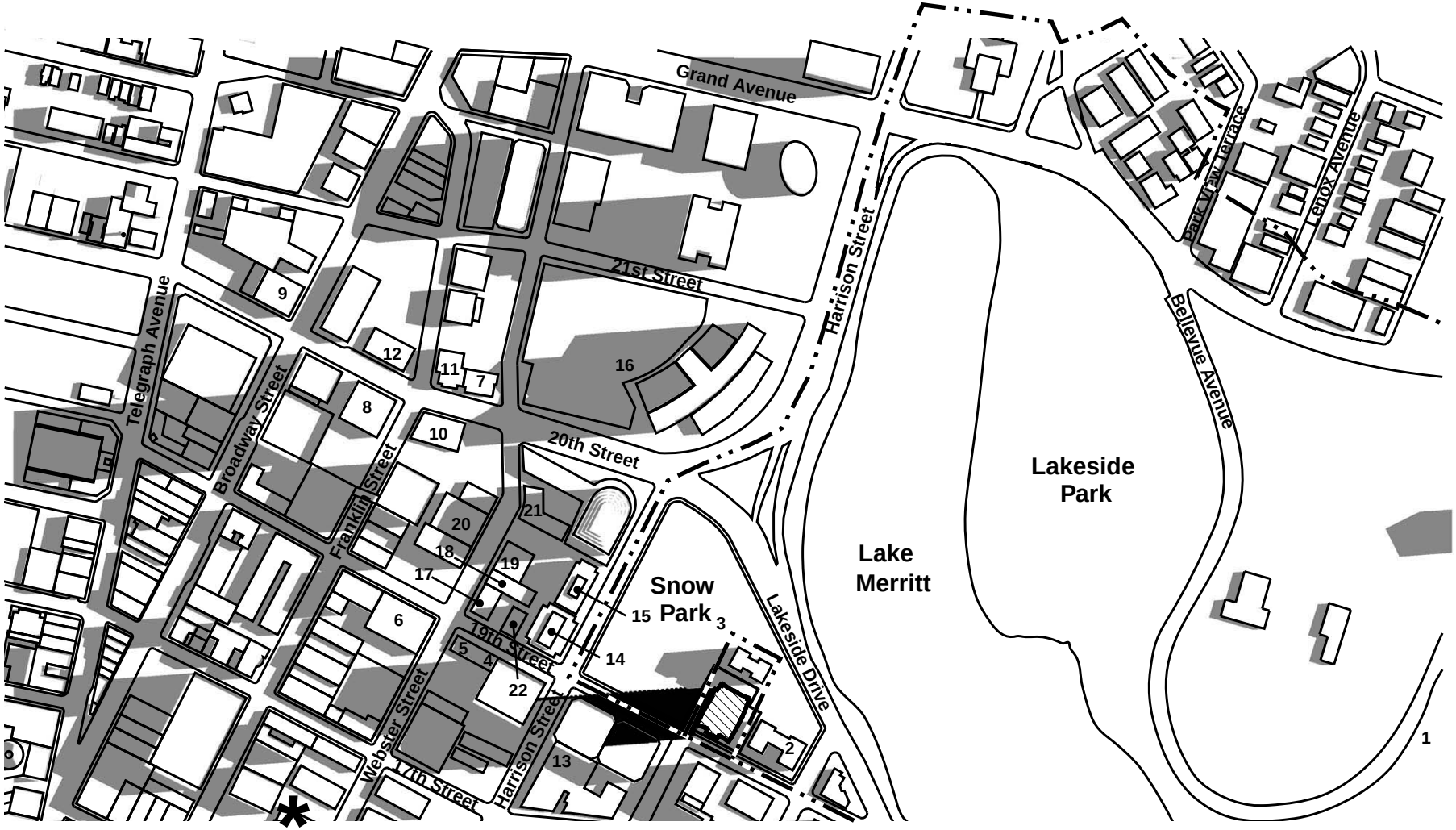

LSA

FIGURE IV.G-9

N

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Project Site

Existing Shadow

New Project Shadow

Solar Collector

Historic District (Area of Primary Importance, API)

1 Historic Resource

Emerald Views Residential Development EIR
Project Shadow Patterns
June 21, 9:00 a.m. PDT

SOURCE: ENVIRONMENTAL VISION, 2007

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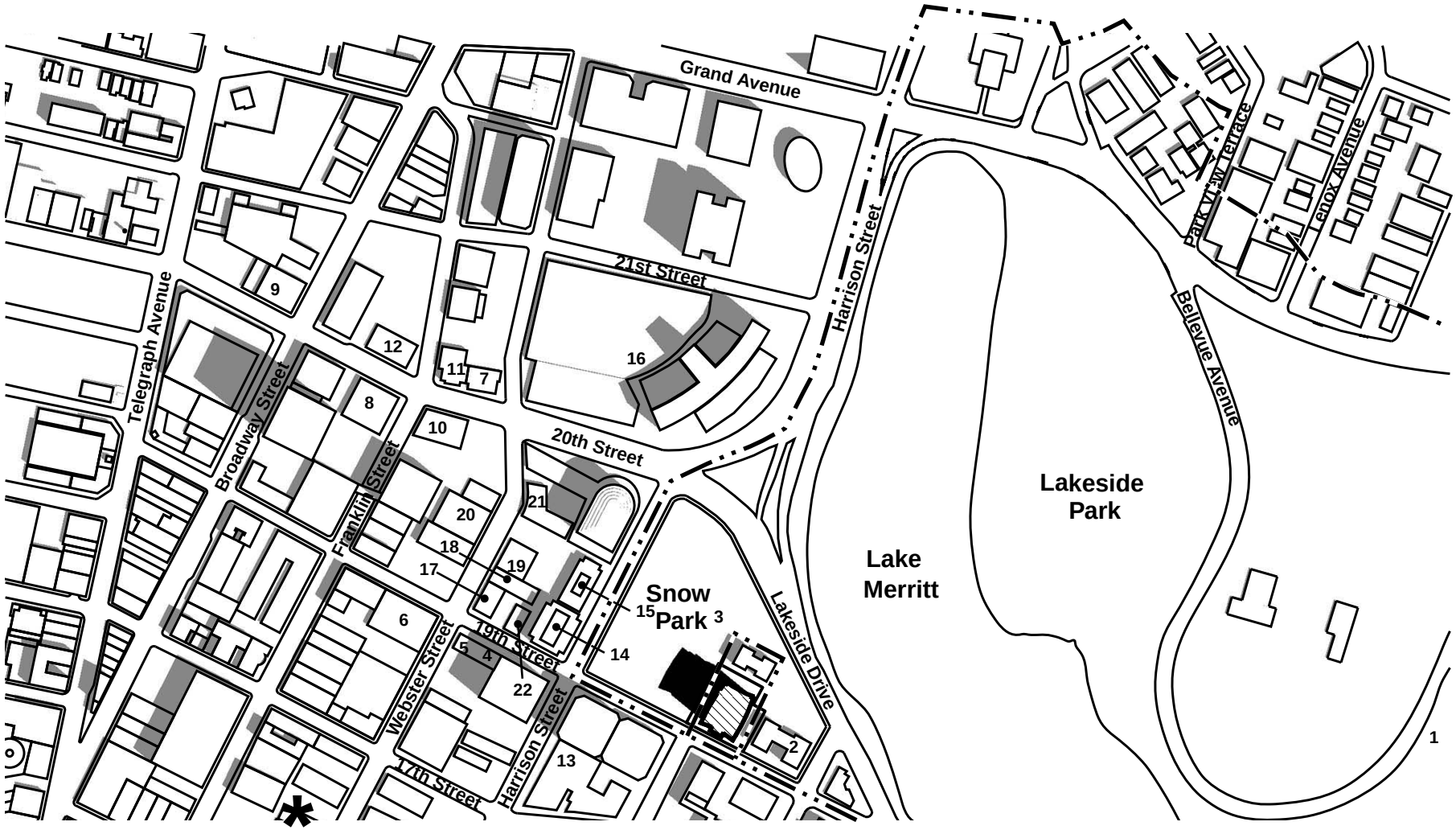

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FIGURE IV.G-10

N

0 150 300
FEET

Project Site

Existing Shadow

New Project Shadow

Solar Collector

Historic District (Area of Primary Importance, API)

1 Historic Resource

Emerald Views Residential Development EIR
Project Shadow Patterns
June 21, 12:00 noon PDT

SOURCE: ENVIRONMENTAL VISION, 2007

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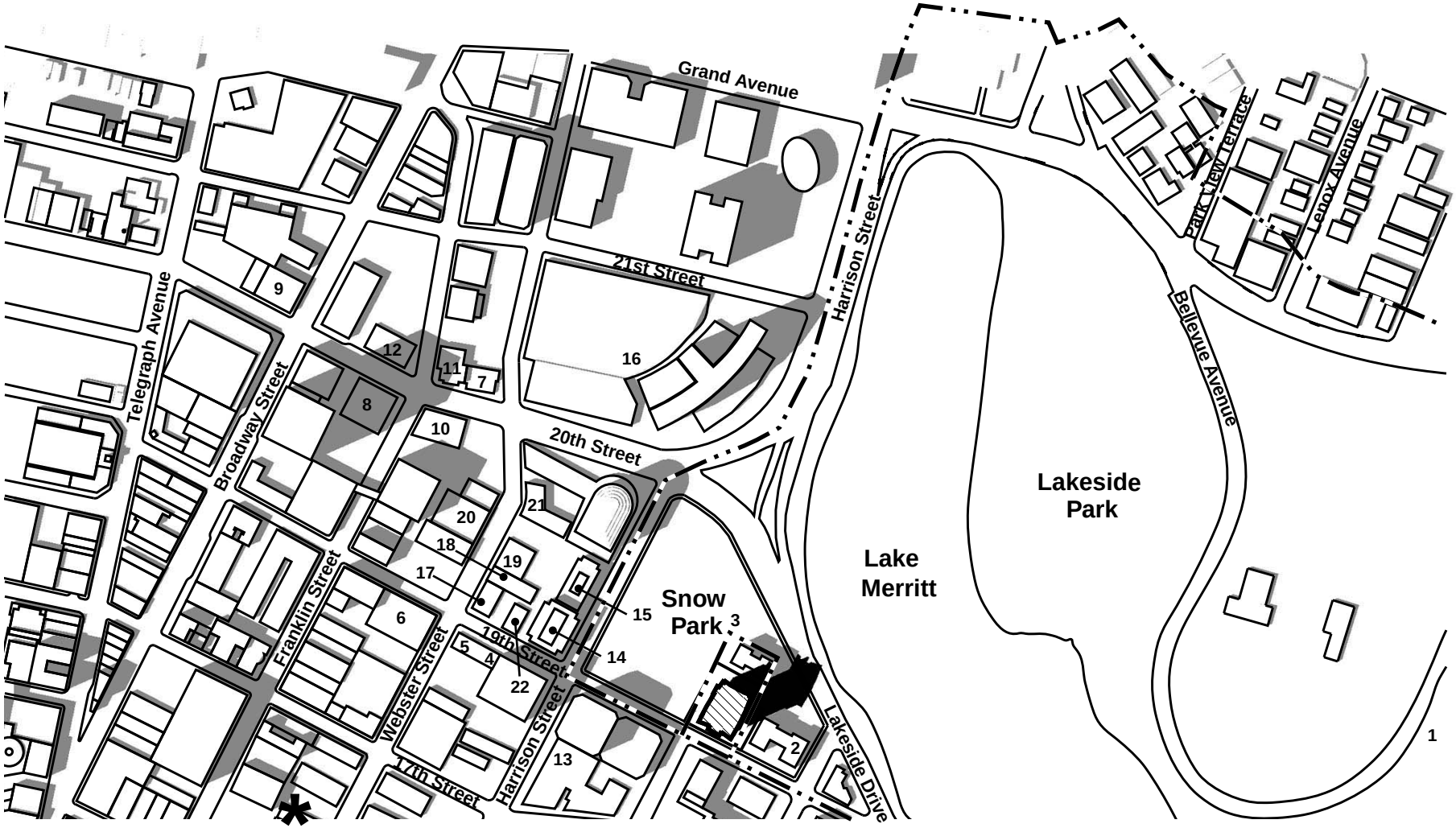

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FIGURE IV.G-11

N

0 150 300
FEET

Project Site

Existing Shadow

New Project Shadow

Solar Collector

Historic District (Area of Primary Importance, API)

1 Historic Resource

Emerald Views Residential Development EIR
Project Shadow Patterns
June 21, 3:00 p.m. PDT

SOURCE: ENVIRONMENTAL VISION, 2007

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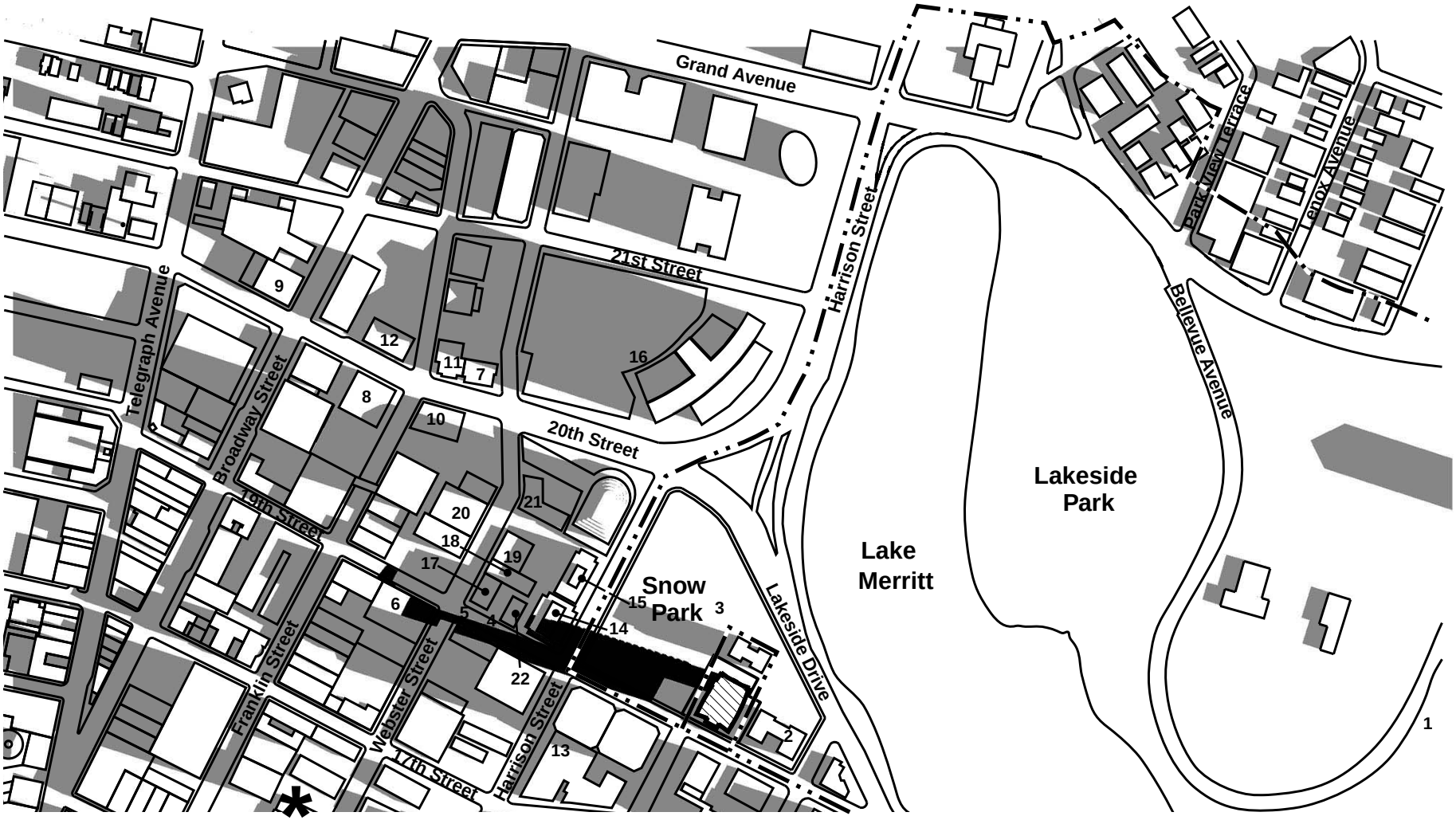


LSA

FIGURE IV.G-12

N

0 150 300
FEET

Project Site

Existing Shadow

New Project Shadow

Solar Collector

Historic District (Area of Primary Importance, API)

1 Historic Resource

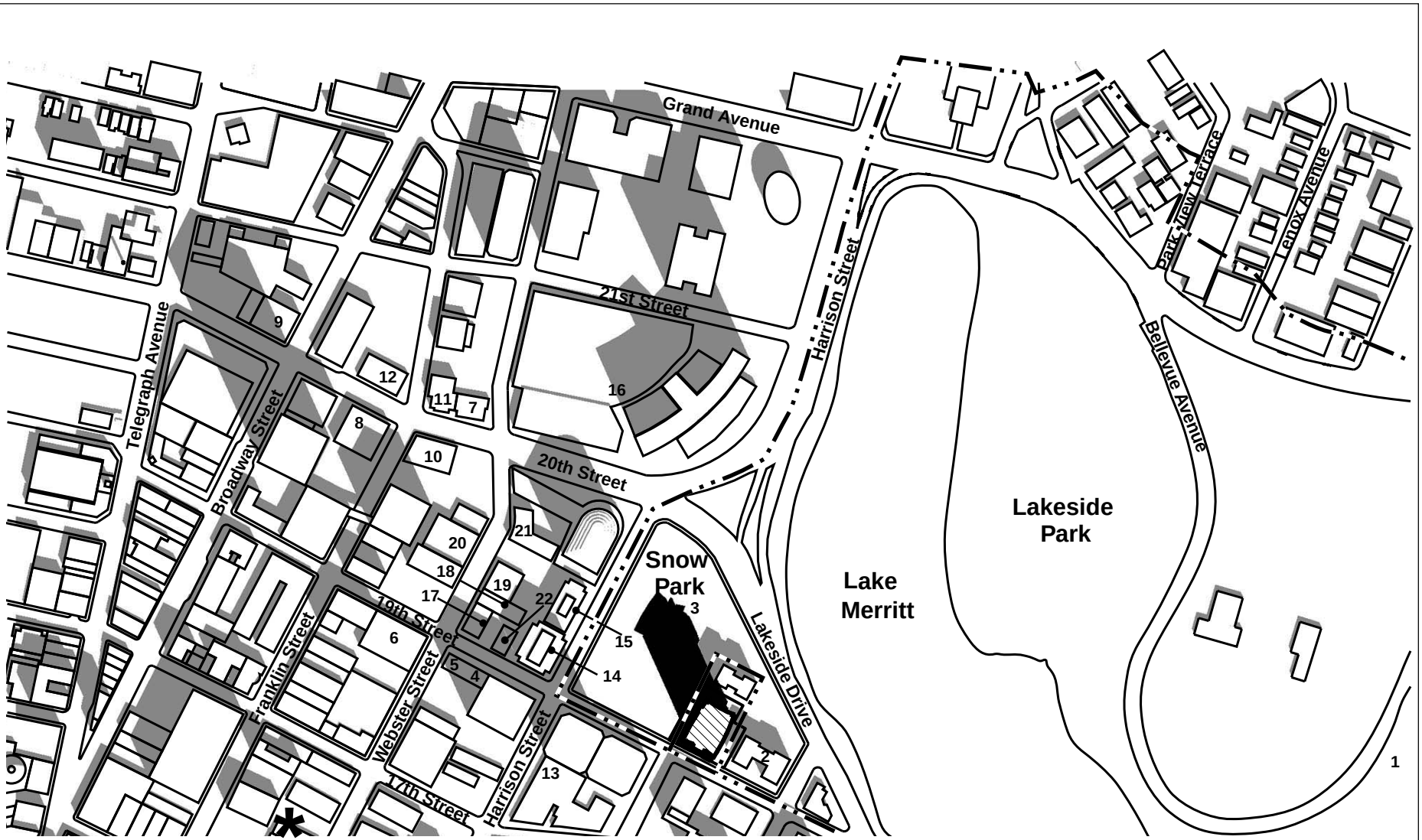
Emerald Views Residential Development EIR

Project Shadow Patterns

September 21, 9:00 a.m. PDT

SOURCE: ENVIRONMENTAL VISION, 2007

I:\SDZ0601 19th street\figures\Fig_IVG12.ai (5/12/10)



LSA

FIGURE IV.G-13

N

0 150 300
FEET

Project Site

Existing Shadow

New Project Shadow

Solar Collector

Historic District (Area of Primary Importance, API)

1 Historic Resource

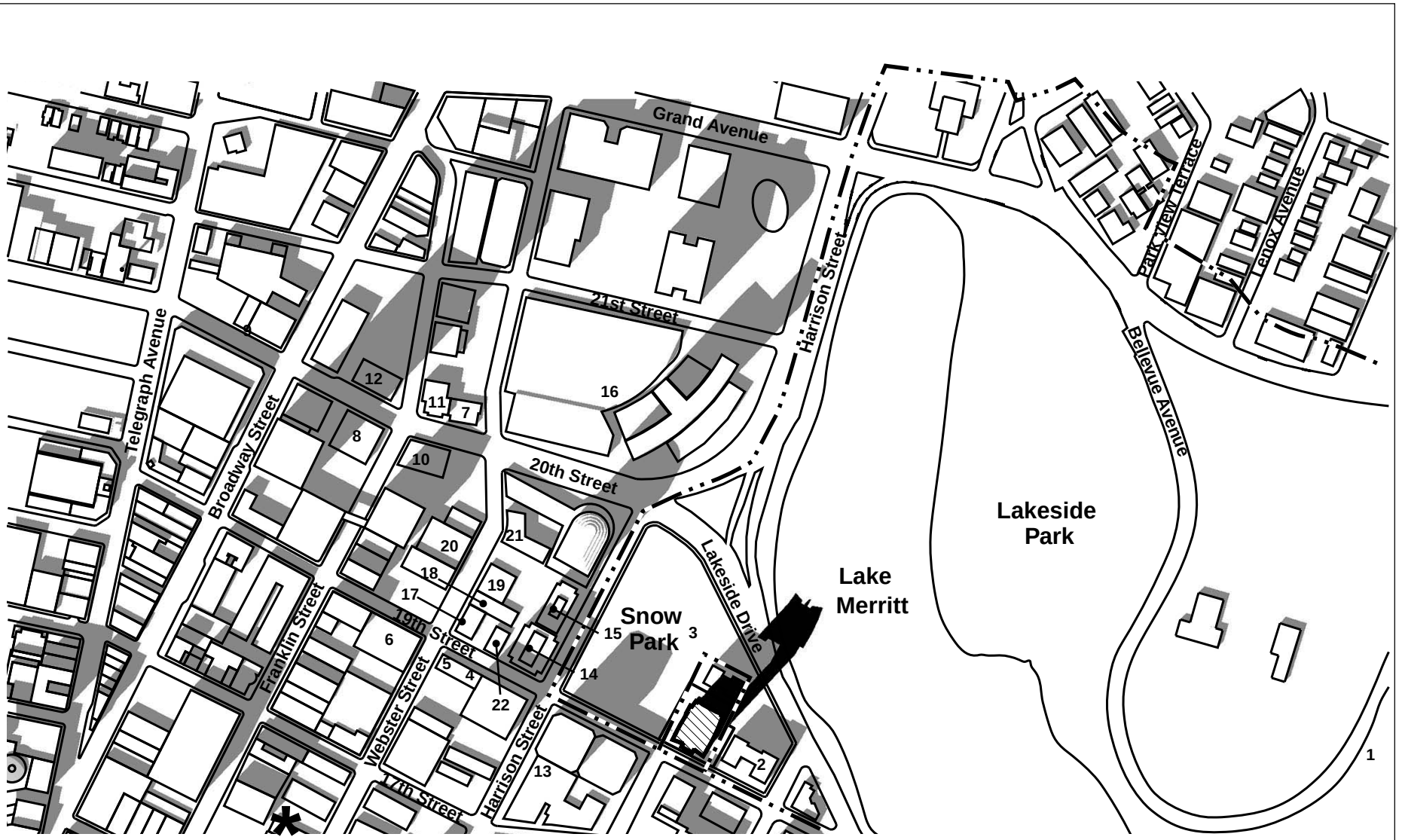
Emerald Views Residential Development EIR

Project Shadow Patterns

September 21, 12:00 noon PDT

SOURCE: ENVIRONMENTAL VISION, 2007

I:\SDZ0601 19th street\figures\Fig_IVG13.ai (5/12/10)



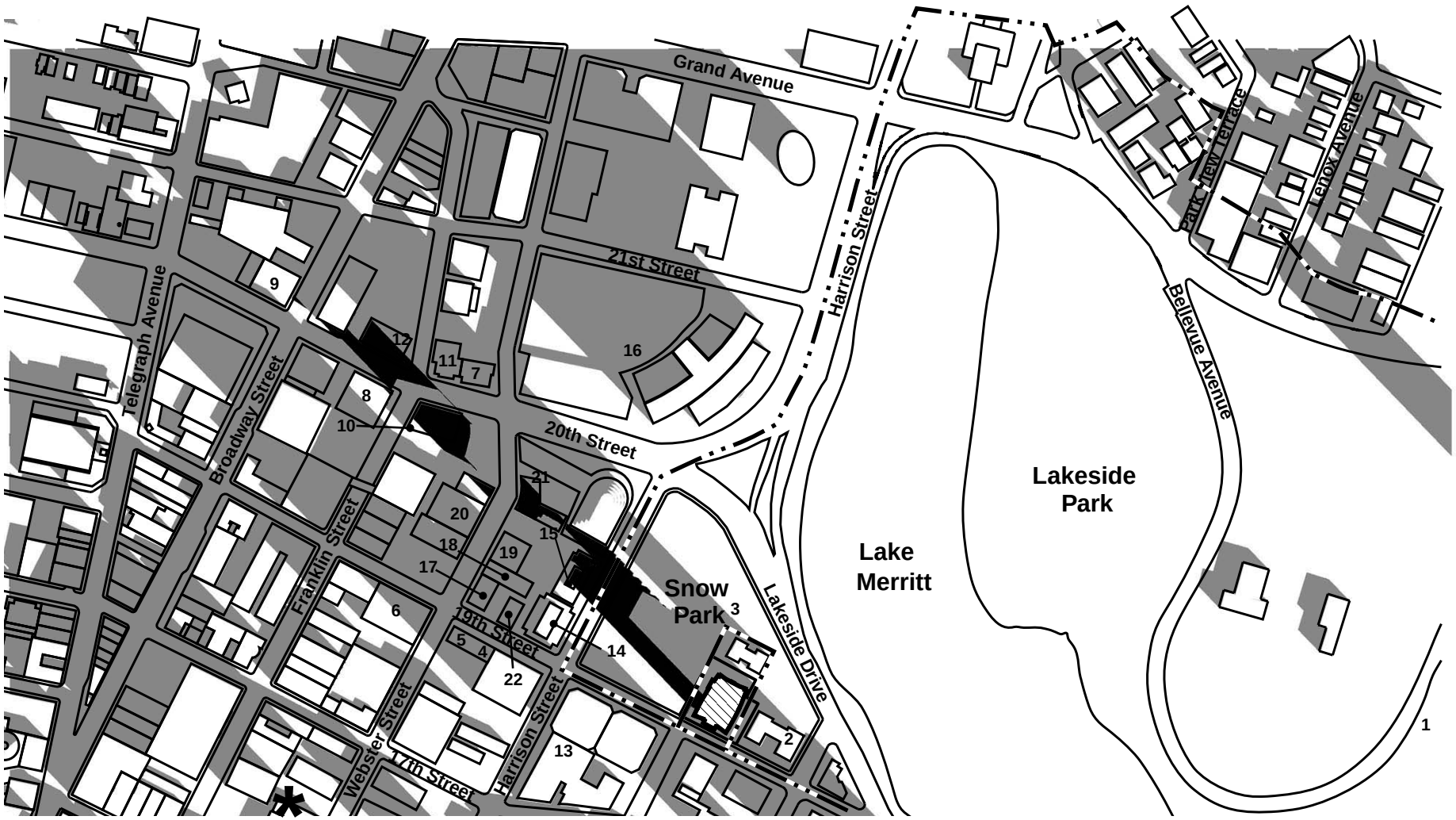
LSA

FIGURE IV.G-14

Emerald Views Residential Development EIR
Project Shadow Patterns
September 21, 3:00 p.m. PDT

SOURCE: ENVIRONMENTAL VISION, 2007

I:\SDZ0601 19th street\figures\Fig_IVG14.ai (5/12/10)



LSA

FIGURE IV.G-15

N

0 150 300
FEET

Project Site

Existing Shadow

New Project Shadow

Solar Collector

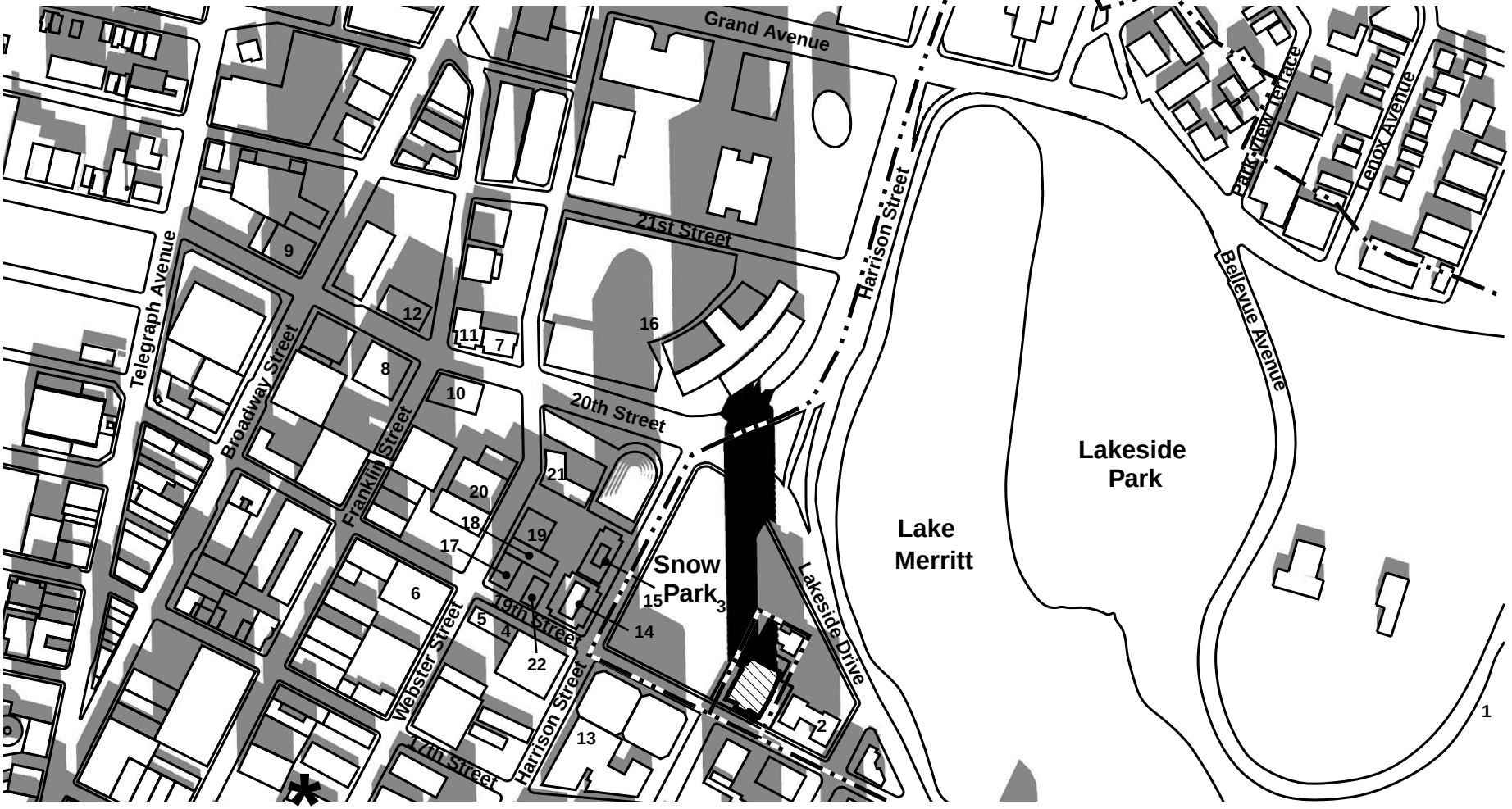
Historic District (Area of Primary Importance, API)

1 Historic Resource

Emerald Views Residential Development EIR
Project Shadow Patterns
December 21, 9:00 a.m. PST

SOURCE: ENVIRONMENTAL VISION, 2007

I:\SDZ0601 19th street\figures\Fig_IVG15.ai (5/12/10)



LSA

FIGURE IV.G-16

N

0 150 300
FEET

Project Site

Existing Shadow

New Project Shadow

Solar Collector

Historic District (Area of Primary Importance, API)

1 Historic Resource

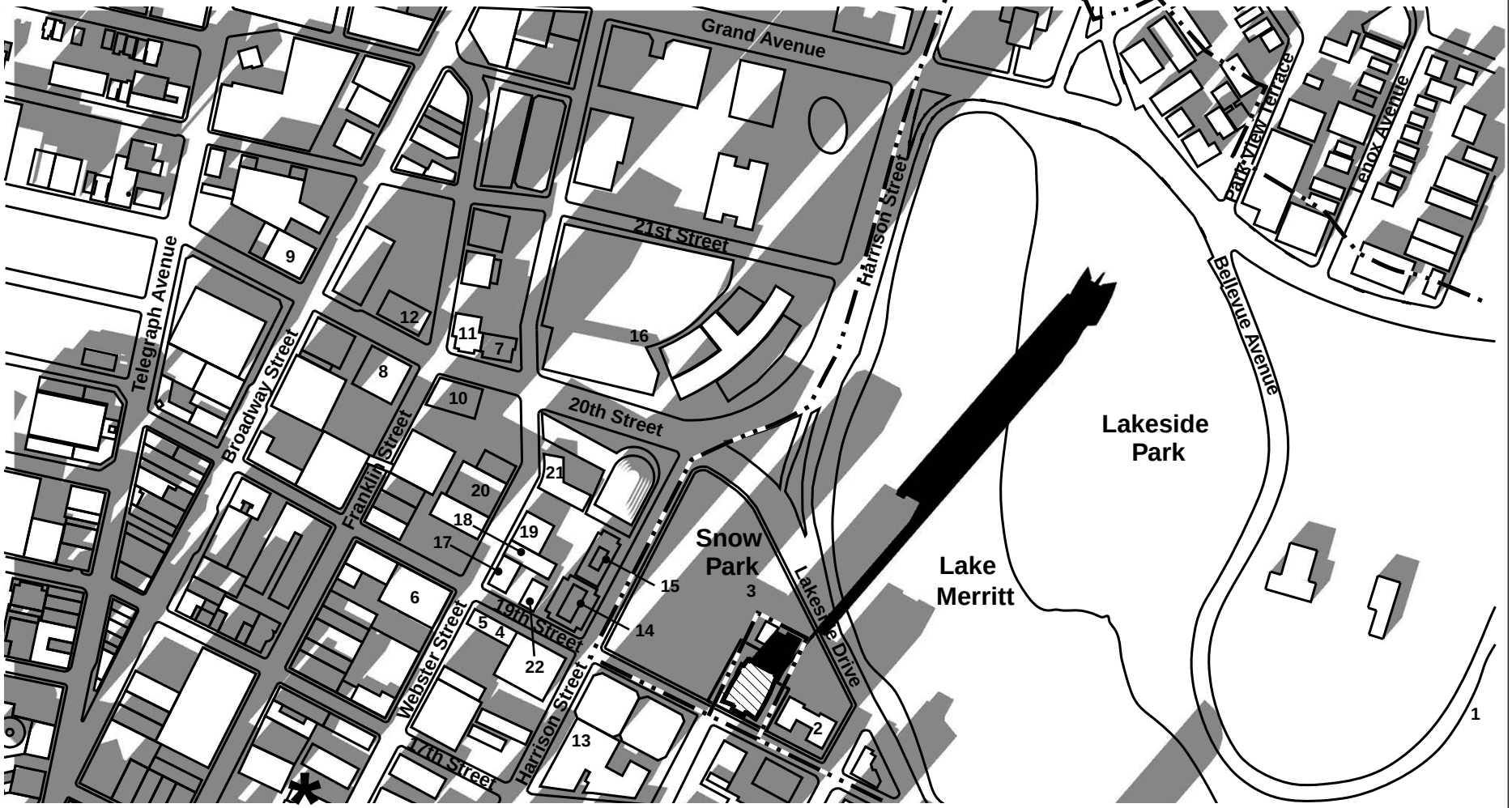
Emerald Views Residential Development EIR

Project Shadow Patterns

December 21, 12:00 noon PST

SOURCE: ENVIRONMENTAL VISION, 2007

I:\SDZ0601 19th street\figures\Fig_IVG16.ai (5/12/10)



LSA

FIGURE IV.G-17

N

0 150 300
FEET

Project Site

Existing Shadow

New Project Shadow

Solar Collector

Historic District (Area of Primary Importance, API)

1 Historic Resource

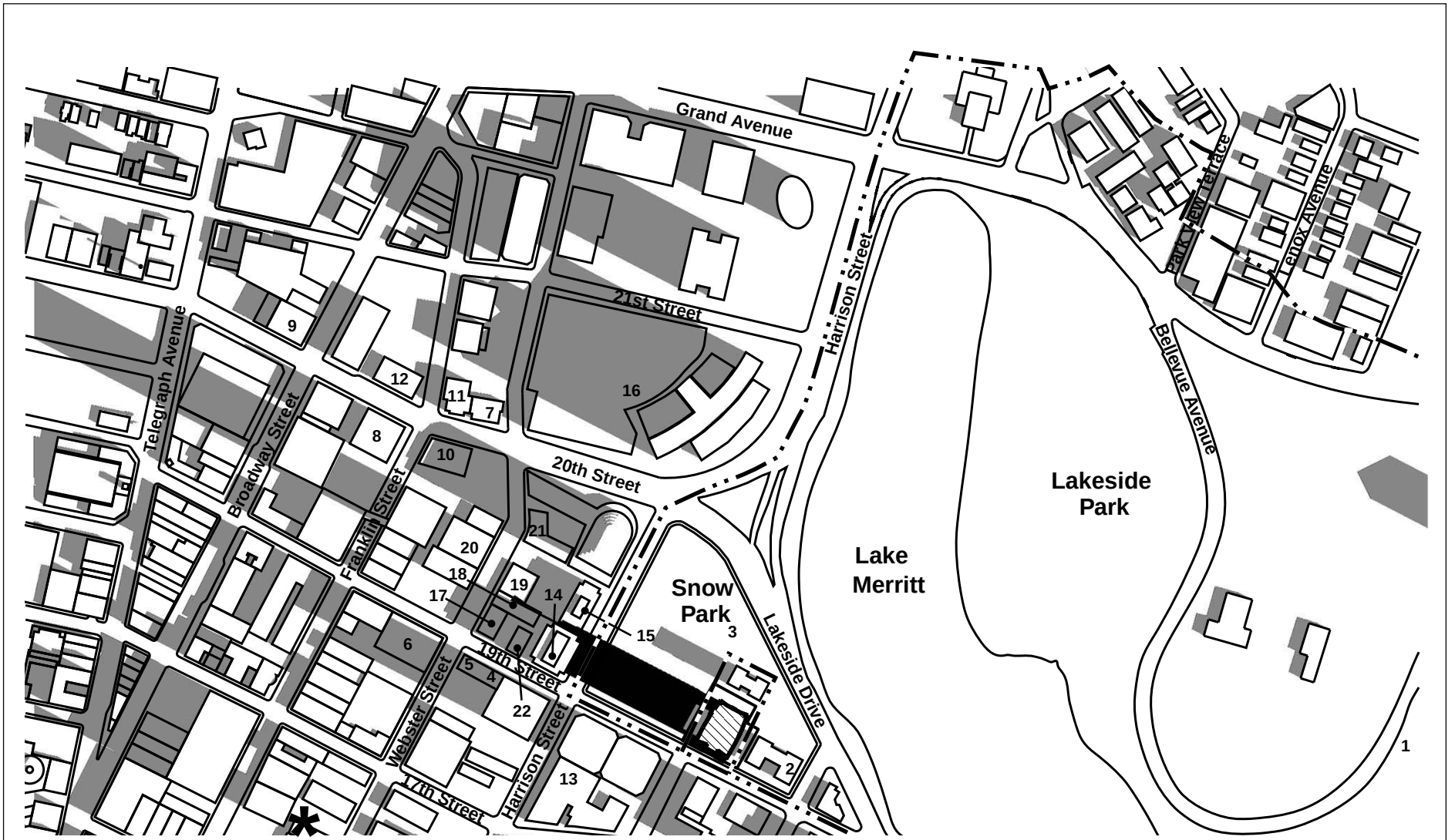
Emerald Views Residential Development EIR

Project Shadow Patterns

December 21, 3:00 p.m. PST

SOURCE: ENVIRONMENTAL VISION, 2007

I:\SDZ0601 19th street\figures\Fig_IVG17.ai (5/12/10)



LSA

FIGURE IV.G-18

N

0 150 300
FEET

Project Site

Existing Shadow

New Project Shadow

Solar Collector

Historic District (Area of Primary Importance, API)

1 Historic Resource

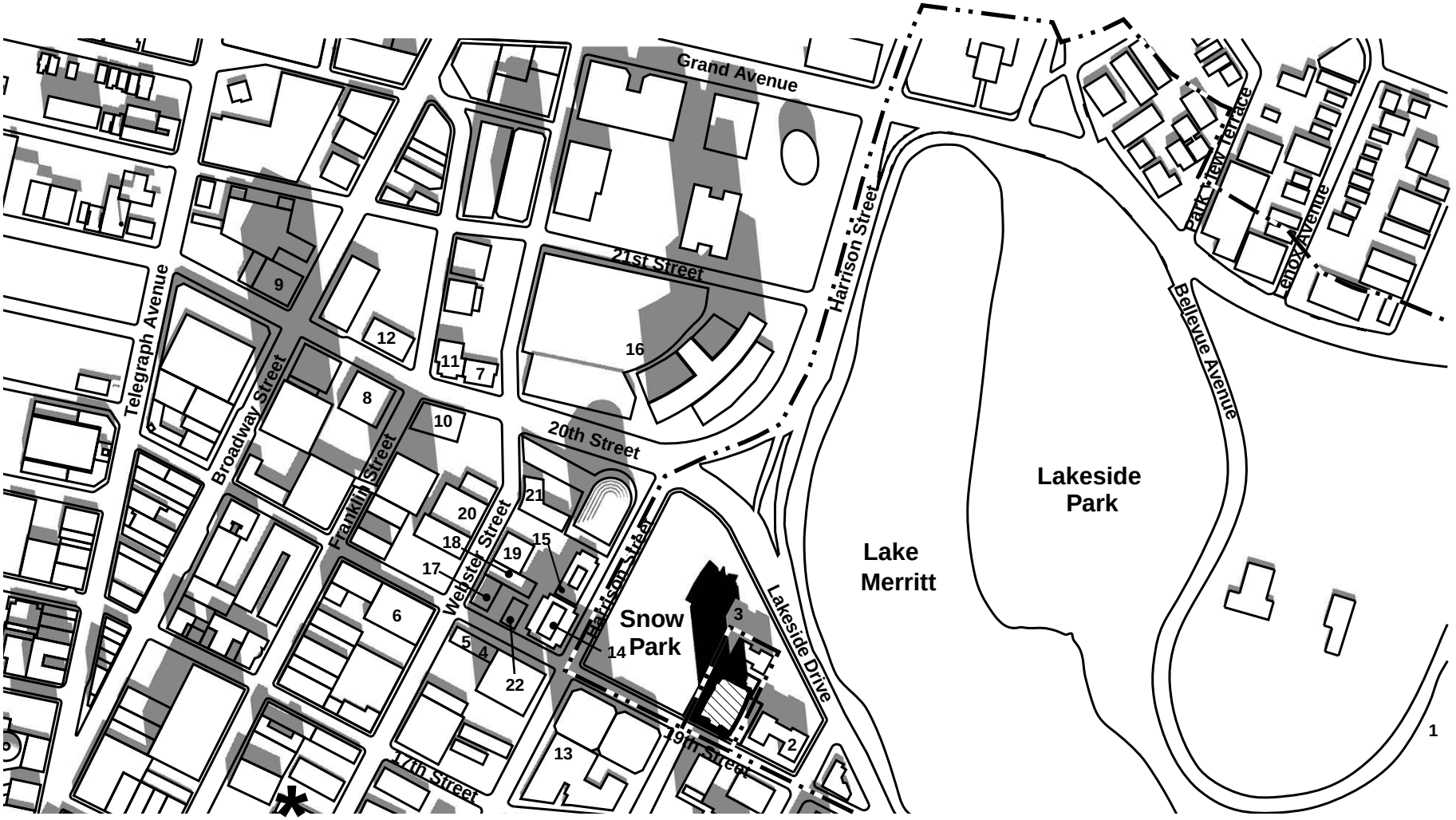
Emerald Views Residential Development EIR

Project Shadow Patterns

March 21, 9:00 a.m. PDT

SOURCE: ENVIRONMENTAL VISION, 2007

I:\SDZ0601 19th street\figures\Fig_IVG18.ai (5/12/10)



LSA

FIGURE IV.G-19

N

0 150 300
FEET

Project Site

Existing Shadow

New Project Shadow

Solar Collector

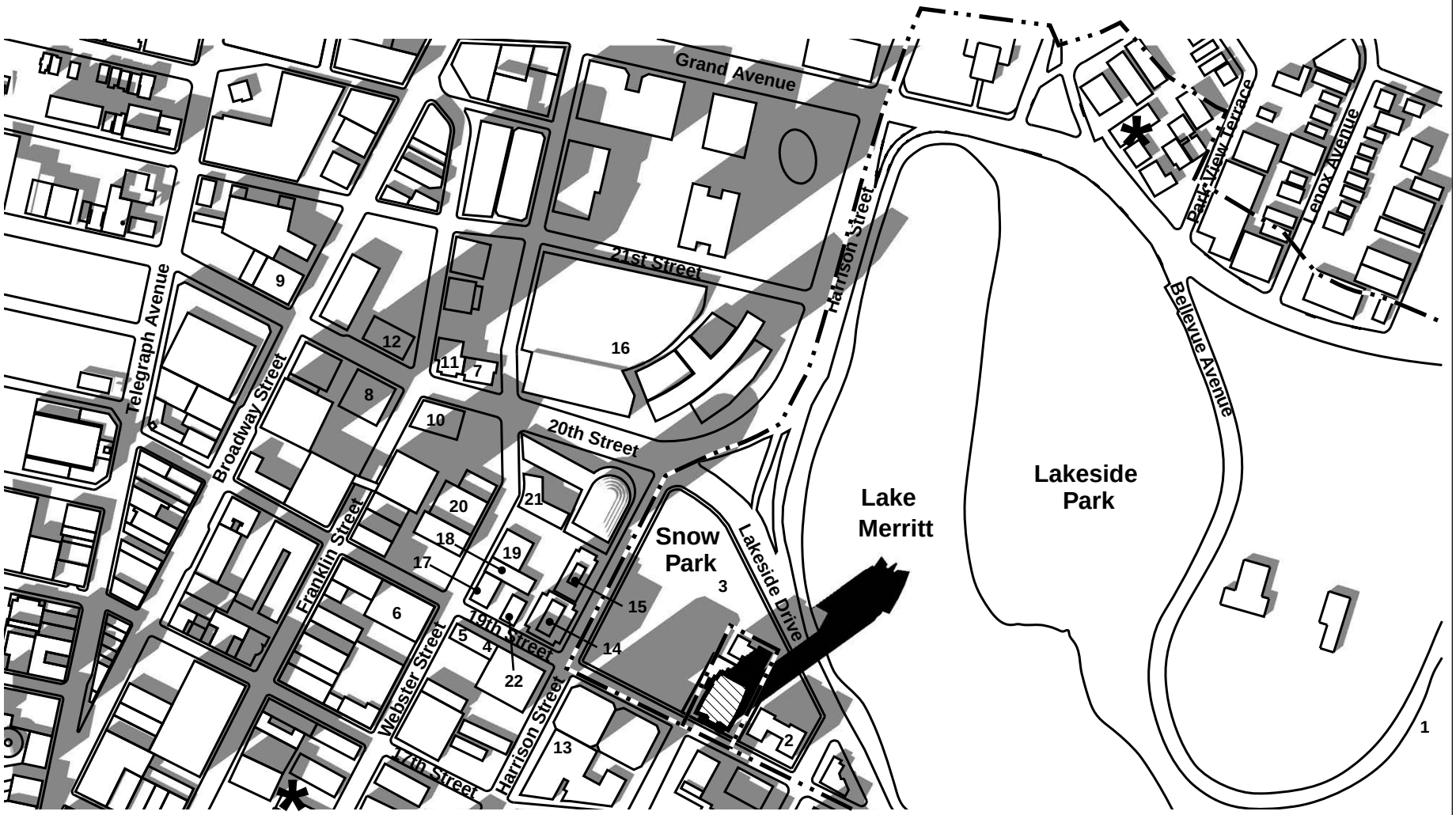
Historic District (Area of Primary Importance, API)

1 Historic Resource

Emerald Views Residential Development EIR
Project Shadow Patterns
March 21, 12:00 noon PDT

SOURCE: ENVIRONMENTAL VISION, 2007

I:\SDZ0601 19th street\figures\Fig_IVG19.ai (5/12/10)



LSA

FIGURE IV.G-20

N

0 150 300
FEET

Project Site

Existing Shadow

New Project Shadow

Solar Collector

Historic District (Area of Primary Importance, API)

1 Historic Resource

Emerald Views Residential Development EIR
Project Shadow Patterns
March 21, 3:00 p.m. PDT

SOURCE: ENVIRONMENTAL VISION, 2007

I:\SDZ0601 19th street\figures\Fig_IVG20.ai (5/12/10)

Existing shadows in the vicinity of the project site are cast from the medium high-rise office buildings located south and west of Snow Park and the residential apartment buildings to the north, east and southwest of the project site. The following provides a description of specific shadow patterns for the previously described days and times:

- *June 21*. On June 21, shadows cast by existing buildings in the vicinity of the project site are the most limited of the four seasonal periods examined, since the sun is at its highest location in the sky. In the morning, noon, and afternoon, shadows from the 244 Lakeside Drive apartment building fall on portions of Snow Park. No shadows from existing buildings fall on Lake Merritt or Lake Merritt Park at this time of year.
- *September 21*. On September 21, shadow lengths cast by the existing buildings in the vicinity of the project site are of an average size. In the morning, the 244 Lakeside Drive building casts a shadow across Snow Park to the west and in the afternoon the existing office buildings south of 19th Street cast shadows that cover the southern half of Snow Park. No shadows from existing buildings in the vicinity of the site fall on Lake Merritt or Lake Merritt Park at this time of year.
- *December 21*. On December 21, shadows cast by existing buildings in the vicinity of the project site cover a large portion of Snow Park in the morning and afternoon. In particular, the Regillus building and the 244 Lakeside Drive apartment building cast long shadows across Snow Park in the morning. In the afternoon, 244 Lakeside Drive, the Regillus and the existing office buildings south of 19th Street cast shadows across the length of Snow Park, while the 244 Lakeside Drive and the Regillus apartment buildings cast shadows onto Lake Merritt, while the Essex apartment building (20-story building at 1 Lakeside Drive) casts a shadow across the lake and onto Lakeside Park. Shadows from existing buildings in the vicinity of the site fall on Lake Merritt or Lake Merritt Park in the morning or at noon during this time of year.
- *March 21*. On March 21, shadow lengths cast by the existing buildings in the vicinity of the project site are of an average size (similar to the September measurement period). In the morning, the 244 Lakeside Drive building casts a shadow across Snow Park to the west and in the afternoon the existing office buildings south of 19th Street cast shadows that cover the southern half of Snow Park. In the afternoon, shadows from existing buildings in the vicinity of the site fall on very small portions of the western portion of Lake Merritt and Lakeside Park at this time of year.

g. Wind. Wind is an important factor for the project site because Oakland is located on the eastern shore of the San Francisco Bay, and as such, is almost constantly subject to sea-to-land breezes. A westerly or west wind (i.e. coming off the Pacific Ocean) is the most frequent and strongest wind during all seasons. Winds from the west average 22.1 miles per hour (mph) these are not necessarily the strongest winds experiences n Oakland throughout the year, but they are the most frequently experienced. Calm conditions (no wind) occur approximately 10 percent of the time. The average wind speed on the project site is 26 miles per hour.[1] The area around the project site currently meets the wind hazard threshold established by the City, which will be discussed later in this section.

[1] Ballanti, Donald, 2007. Certified Consulting Meteorologist. Written Communication with LSA Associates, Inc. February 13.

2. City of Oakland's 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.

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. Plans shall be submitted to the Planning and Zoning Division and the Electrical Services Division of the Public Works Agency for review and approval. All lighting shall be architecturally integrated into the site.

COA AES-2 (same as COA BIO-5): Bird Collision Reduction. *Concurrent with submittal of planning applications or a building permit, whichever occurs first, and ongoing.* The project applicant, or his or her successor, including the building manager or Home Owner's Association, shall submit plans to the Planning and Zoning Division, for review and approval, indicating how they intend to reduce potential bird collisions to the maximum feasible extent. The applicant shall implement the approved plan, including all mandatory measures, as well as applicable and specific project Best Management Practice (BMP) strategies to reduce bird strike impacts to the maximum feasible extent.

a) Mandatory measures include **all** of the following:

   i) Comply with federal aviation safety regulations for large buildings by installing minimum intensity white strobe lighting with three second flash instead of blinking red or rotating lights.

   ii) Minimize the number of and co-locate rooftop-antennas and other rooftop structures.

   iii) Monopole structures or antennas shall not include guy wires.

   iv) Avoid the use of mirrors in landscape design.

   v) Avoid placement of bird-friendly attractants (i.e., landscaped areas, vegetated roofs, water features) near glass.

b) Additional BMP strategies to consider include the following:

   i) Make clear or reflective glass visible to birds using visual noise techniques. Examples include:

      1. Use of opaque or transparent glass in window panes instead of reflective glass.
      2. Uniformly cover the outside clear glass surface with patterns (e.g., dots, decals, images, abstract patterns). Patterns must be separated by a minimum 10 centimeters (cm).
      3. Apply striping on glass surface. If the striping is less than 2 cm wide it must be applied vertically at a maximum of 10 cm apart (or 1 cm wide strips at 5 cm distance)
      4. Install paned glass with fenestration patterns with vertical and horizontal mullions of 10 cm or less.
      5. Place decorative grilles or louvers with spacing of 10 cm or less.
      6. Apply one-way transparent film laminates to outside glass surface to make the window appear opaque on the outside.
      7. Install internal screens through non-reflective glass (as close to the glass as possible) for birds to perceive windows as solid objects.
      8. Install windows which have the screen on the outside of the glass.
      9. Use UV-reflective glass. Most birds can see ultraviolet light, which is invisible to humans.

10. If it is not possible to apply glass treatments to the entire building, the treatment should be applied to windows at the top of the surrounding tree canopy or the anticipated height of the surrounding vegetation at maturity.

ii. Mute reflections in glass. Examples include:
   1. Angle glass panes toward ground or sky so that the reflection is not in a direct line-of-sight (minimum angle of 20 degrees with optimum angle of 40 degrees)
   2. Awnings, overhangs, and sunshades provide birds a visual indication of a barrier and may reduce image reflections on glass, but do not entirely eliminate reflections.

iii. Reduce Light Pollution. Examples include:
   1. Turn off all unnecessary interior lights from 11 p.m. to sunrise.
   2.
   3. Reduce perimeter lighting whenever possible.

iv. Institute a building operation and management manual that promotes bird safety. Example text in the manual includes:
   1. Donation of discovered dead bird specimens to authorized bird conservation organization or museums to aid in species identification and to benefit scientific study, as per all federal, state and local laws.
   2. Production of educational materials on bird-safe practices for the building occupants
   3. Schedule nightly maintenance during the day or to conclude before 11 p.m., if possible.

Other standard conditions would also serve to reduce wind impacts, including:

COA UTIL-1: Required Landscape Plan for New Construction and Certain Additions to Residential Facilities.

3. Impacts and Mitigation Measures

This section discusses potential visual, shade, and wind impacts that could result from implementation of the proposed project. The section begins with the significance criteria, which establish the thresholds used to determine whether an impact is significant.[2] The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as appropriate.

To guide the assessment of whether the proposed project would create a significant adverse impact when measured against the following criteria, the analysis includes computer-generated photo simulations illustrating "before" and "after" views and vistas across the project site (see Figures IV.G-2 through Figure IV.G-8). In addition, shadow pattern simulations are provided to determine the impact of the shadow created by the proposed project on sensitive receptors (see Figures IV.G-9 through Figure IV.G-20). Visual simulations and shadow pattern simulations were also developed for the cumulative development scenario (see Figures IV.G-21 through Figure IV.G-40).

a. Criteria of Significance. Implementation of the proposed project would have a significant effect on visual resources if it would:

- Have a substantial adverse effect on a scenic vista;

[2] Oakland, City of, 2008. CEQA Thresholds/Criteria of Significance Guidelines, p. 5. May 13.

- 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), 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 Historic Resources, Local register of historical resources or a historical survey form (DPR Form 523) with a rating of I-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 miles per hour for more than 1 hour during daylight hours during the year.[3]

b. Less-Than-Significant Aesthetic, Shadow and Wind Impacts. The following discussion describes the less-than-significant impacts to visual resources that would result from implementation of the proposed project.

(1) Scenic Vistas. The Open Spaces, Conservation, and Recreation (OSCAR) element of the City of Oakland's General Plan identifies views of Lake Merritt, the Oakland Hills, and panoramic views from Skyline Boulevard and Grizzly Peak Road as scenic resources that need to be protected. The OSCAR has determined these views should be protected through a combination of development review, zoning standards (including height limits in appropriate areas), Design Review, and proper management of park and open space areas. The project site is adjacent to Lake Merritt; the proposed project's potential impacts on the views of lake are discussed below.

Views of Lake Merritt from the vantage points previously discussed would not be impacted by the proposed project. As shown in Figure IV.G-2 (Viewpoint 1), at 19th Street and Harrison, the proposed building would not block any existing views down the 19th Street corridor. As shown in Figure IV.G-3 (Viewpoint 2), at Alice Street and 14th Street, the proposed building would narrow the

[3] 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 exists: (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.

view down the Alice Street corridor, but it would not block any existing views of the lake. As shown in Figure IV.G-6 (Viewpoint 5), at Harrison Street near 21st Street, the proposed project does not impact any view of the lake, as Lakeside Drive curves east around the lake and the project site is west of Lakeside Drive. As seen in Figure IV.G-8 (Viewpoint 7), the proposed tower would generally blend in with the Oakland skyline and would not impact any views of the lake. In addition to the viewpoints utilized in the visual simulations, the proposed project is not expected to block or adversely affect views of Lake Merritt from other street level vantage point in the surrounding area.

Current views of Lake Merritt from the project site are restricted by 244 Lakeside Drive, the associated parking garage and existing vegetation. Development of the proposed project would result in the construction of a 42-story tower on the project site. Due to the height of the proposed building, implementation of the project would create views of Lake Merritt from the upper levels of the building, as well as views of Oakland Hills and the San Francisco Bay. In addition, the proposed project would include a viewing area, open to the public, on the 40th floor. Therefore, the proposed project would not have a significant impact on scenic vistas identified in the OSCAR element.

(2) Scenic Resources. The State scenic highways in Alameda County are as follows: Interstate 580 (from the San Joaquin County line to State Route 205, and from San Leandro city limits to State Route 24 in Oakland); and Interstate 680 (from Mission Boulevard in Fremont to Bernal Avenue near Pleasanton, and from Bernal Avenue near Pleasanton to the Contra Costa County line).[4]

The project site is located approximately 1.3 miles south of the State scenic highways segment of Interstate 580 that terminates at State Route 24. Since the I-580/SR-24 interchange is elevated, and the 42-story project would be the tallest building in Oakland, the proposed building would likely be visible to motorists on the designated scenic highway. However, as shown in Figure IV.G-7, the proposed tower blends in with the mid-rise buildings that are located closer to I-580. Therefore, the proposed project would not substantially damage views from a state scenic highway and would have less-than-significant impacts on scenic highways and associated resources.

(3) Visual Character. Implementation of the project would change the visual character of the project site through the demolition of an existing historic garden and the construction of a 42-story tower. While the site contains a historical garden with several interesting historical features, the garden is not visible from the surrounding streets. The only visible portion of the garden is the rock embankment that slopes down from the site to 19th Street (see Photo 2 on page 186). The rock embankment is covered in ivy and other types of vegetation. Above the embankment are large bushes that completely block all views of the garden. The proposed project would remove the garden and embankment, and would create a site that is at the same elevation as 19th Street. The proposed project would include a landscaped entrance to the residential tower, a patio at the southwest corner of the site adjacent to Snow Park, and a café and seating area. The open space area around the site would be accessible from 19th Street, and would provide a connection from the project site to Snow Park, which currently does not exist. Implementation of the proposed project would result in a change to the visual character along 19th Street in proximity to Snow Park, but it would not degrade the visual characteristics of the area.

[4] California Department of Transportation, 2007. California Scenic Highway Program. Website: www.dot.ca.gov/hq/LandArch/scenic/schwy1.html. May 18.

The project site is located in a developed urban area of Oakland. The buildings in the area represent examples of a variety of building styles, heights, and densities that have been developed since Oakland was officially incorporated in 1852. The two closest buildings to the project site, the Regillus and 244 Lakeside Drive, are identified historic resources that were built in the early twentieth century. The Regillus, bordering the project site on the east, is 8 stories tall and the 244 Lakeside Drive apartment building, bordering the project site to the north, is 12 stories tall. Implementation of the proposed project would result in a significant height discrepancy between the proposed 42-story building and historic buildings bordering the site. As such, the proposed project would generally not be of a similar scale to the buildings in the vicinity of the project site.

In addition to considerable differences in height, there is also a difference in architectural styles between the proposed building and existing structures in the surrounding area. The proposed building would have a contemporary style, which would contrast with the Beaux Arts and Renaissance/ Baroque style of the 244 Lakeside Drive and Regillus apartment buildings. As discussed in Chapter IV.H, Cultural and Paleontological Resources, the location of the building would lead to a significant unavoidable impact to the historical value of the two buildings. However, while the proposed building would be of a different scale and architectural style than the immediately surrounding buildings, this would not result in a significant visual impact. The juxtaposition of historic and modern buildings is part of what creates an interesting urban fabric, and provides evidence of the way that cities continually grow and change.

While the proposed project would be of a different scale and architectural style than the adjacent buildings, it would not be incompatible with other buildings in the vicinity of the project site. Currently, the tallest building in the City is the Ordway building, located at 2150 Valdez Street, which is 28 stories and 404 feet tall. The Ordway building is approximately one quarter mile north of the project site. Two other buildings in the vicinity of the project (within 1,000 feet) have heights that are within 100 feet of the proposed building. The Kaiser Center building at 300 Lakeside Drive is also 28 stories (390 feet) tall, and the Lake Merritt Plaza building at 1999 Harrison Street is 27 stories (371 feet) tall. The project proposes to construct a 42-story, 457 foot tall building in Oakland in an area that contains buildings of similar height.

While implementation of the proposed project would result in a tower that is generally not consistent with the adjacent historic structures, it would be of a similar height to other buildings within the project area. The previously discussed visual simulations illustrate how the proposed building would be highly visible from locations along public streets within the project vicinity, including 19th Street, 14th Street, Harrison Street, Lakeshore Avenue and I-580. However from more distant vantage points, such as from Lakeshore Avenue at Athol Plaza and other locations along I-580, the proposed building would blend in with Oakland's skyline. As such, the proposed project would not visually degrade the surrounding area.

In addition, if approved, the proposed project would undergo further Design Review in accordance with the City's Design Review process. The Design Review process would provide the opportunity for the City to define the desired character of the district and the extent to which the proposed project would reflect that character. Therefore, the placement of the proposed project would not have a significant adverse impact on the visual character of the project area.

(4) Light and Glare. During certain daylight hours, at certain times in the year, pedestrians and motorists could experience some degree of glare due to light reflecting off of the proposed building. The lower floors (floors 1 through 3) would be clad in pre-cast simulated stone panels with aluminum spandrel panels forming a transition to the all glass skin of the upper floors. Floors 4 through 42 would be sheathed in light-green glass. The aluminum and glass would provide a source of daytime glare. In addition, it is anticipated that the proposed project would include sources of nighttime lighting through the incorporation of exterior lighting for pedestrian safety. Potential glare from the lower floors would be minimized by the adjacent buildings, mature landscaping in Snow Park, proposed landscaping on the site, as well as implementation of Mitigation Measure CULT-2. Implementation of COA AES-1 and COA AES-2 would ensure that exterior lighting would not unnecessarily be cast onto adjacent properties, the use of reflective or mirrored glass would be minimized or muted, and light pollution would be minimized. As such, the proposed project would not substantially or adversely affect day or nighttime views in the area; the proposed project would result in less-than-significant light and glare impacts.

(5) Shade and Shadow. Shade and shadow impacts occur when a structure's height or its width (or a combination of these two characteristics) reduces the access to sunlight enjoyed by a public open space area. It should be remembered that in a built urban environment like the project area, nearly all land uses create for others and, in turn, are subject to shade and shadows from neighboring structures.

Development of the proposed project would result in the construction of a 42-story tower, which would create new shadows on the land uses surrounding the project site. The first part of this subsection describes where new shadows fall during various times and days throughout the year. The following section provides a shadow analysis that identifies potential impacts to the following three sensitive receptors: open spaces; solar collectors; and historical resources (as defined by CEQA Section 15064.5(a)). Refer to Figures IV.G-9 through Figure IV-G-20 for this shadow analysis.

In the summer, as the sun rises in the east, morning shadows are cast to the west. As the sun moves higher across the sky, shadows decrease until noon, and then extend generally to the east as the sun sets in the west. In the winter, the sun is lower in the sky to the south and the shadows cast are greater to the north. As the sun rises in the east, shadows are cast to the west-northwest. As the sun moves across the sky, shadows move from the west-northwest in the morning, to the north at noon, and to the east-northeast as the sun sets. The proposed project would cast shadows on adjacent structures and development at different times of the day and at different times of the year.

Shadow simulations were prepared for June 21, September 21, December 21, and March 21, for 9:00 a.m. (morning), 12:00 p.m. (noon), and 3:00 p.m. (afternoon). A brief summary of the results of this analysis is provided below.

- *June 21.* On June 21, the shadows from the proposed project would fall on the office building west of the site in the morning, on the eastern portion of Snow Park at noon, and on Lakeside Drive in the afternoon.
- *September 21*. On September 21, the proposed project would cast a shadow across the southern portion of Snow Park, Harrison Street, and Webster Street in the morning, onto the central portion of Snow Park at noon, and across Lakeside Drive and onto Lake Merritt in the afternoon.

- *December 21*. On December 21, the proposed project would cast additional shadows across Snow Park and over the next three blocks in the morning, across the northeastern portion of the Snow Park at noon, and all the way across Lake Merritt and onto Lakeside Park in the afternoon. The shadow from the proposed project would be longer than the shadow cast from the Essex apartment building (1 Lakeside Drive), but would fall upon the lake and Lakeside Park in a pattern similar to the existing shadows from the Essex apartment building at this time of year.[5]
- *March 21*. On March 21, the proposed project would cast a shadow on the southern portion of Snow Park in the morning, onto the eastern portion of the park at noon, and across Lakeside Drive onto Lake Merritt in the afternoon.

The shadow analysis was used to determine shade and shadow impacts on parks, solar collectors, and historic resources. The City of Oakland's list of permitted solar collectors was used to establish solar collectors, including passive solar heat collection, solar collectors for hot water, and photovoltaic solar collectors, in the project vicinity. Aerial photography and City maps were utilized to locate public or quasi-public parks, lawns, gardens, or open space. Historical resources within potential shadow impact areas were identified using existing cultural resources documentation at the Oakland Cultural Heritage Survey (OCHS), City of Oakland Planning Department, and the Northwest Information Center (NWIC), Sonoma State University.

Open Space. Implementation of the proposed project would increase the extent of shade and shadows cast on parks in the vicinity of the project site. In particular, the proposed building would cast shadows on Snow Park, and to a lesser extent on Lake Merritt and Lakeside Park. Currently, Snow Park is covered, to varying degrees, with existing shadows throughout the year. The proposed project would increase shadow effects on the park, especially in the morning and afternoon on September 21, December 21, and March 21. In the morning on September 21 and March 21, Snow Park would have approximately 30 percent of the park covered in shade, approximately 25 percent of which would be caused by the proposed project. On December 21, shade would cover approximately 66 percent of the site in the morning and at noon, and at both times, 15 percent of that shade would be caused by the project. While the proposed project generally contributes to existing shade that falls on Snow Park, there are two times of the year when the proposed project would be the sole source of the shadow on the park. At noon on September 21 and March 21, the proposed project would be the cause of the only shadow to fall on Snow Park, and would cover approximately 20 percent of the park. The project would not increase shadows on Snow Park at anytime on June 21, or in the afternoon in September 21, December 21, or March 21. Since Snow Park is shadowed by existing buildings for much of the year, the addition of the new shadow would not be expected to substantially change the way that people use the park or the shadows they experience in the park.

The proposed project would also increase shadows on Lake Merritt three times during the year. The shadow would fall on the western portion of Lake Merritt on September 21 and March 21, and on December 21 the shadow would fall all the way across the lake onto Lakeside Park. Because the shadow would fall only during limited times of the year on Lake Merritt and Lakeside Drive, the proposed project would not substantially impair the beneficial use these areas, or of any other public or quasi-public park, lawn, garden, or open space.

[5] 1 Lakeside Drive, located at Lakeside Drive and 17th Street, is not shown on the Project Shadow Patterns figures, it is south of the mapped project vicinity. However, the shadows cast from this building are shown on the figures, they are the southern shadows cast across Lake Merritt.

In addition, the proposed project would be subject to the City's Design Review process and would be subject to further evaluation of the building height and mass, including consideration of recommendations from the Lake Merritt Park Master Plan related to sunlight access and building mass impacts to Snow Park, Lake Merritt, and Lakeside Park.

Solar Collectors. The proposed building or associated landscape would not cast a shadow on any identified solar collectors. As seen in Figures IV.G-9 through Figure IV.G-20, one solar collector was identified to the southwest of the site. The closest solar collector was found on a building at 1537 Webster Street. According to the shadow pattern analysis, at no point during the year would the proposed project impact this collector, or any other solar collectors in the vicinity of the proposed project.

Historic Resources. Table IV.G-1 lists the historic resources labeled in the shadow analysis, and includes their historical ratings. The shadow analysis shows that the proposed project would cast a shadow on four historical resources: the Lake Merritt Wild Duck Refuge, which consists of Lake Merritt and its shore; the Lake Merritt District, which includes Snow Park, Lakeside Park, and Lake Merritt; the Lakeside Drive Building Complex, which consists of the 244 Lakeside Drive apartment building, the Schilling Garage and Garden, and the Regillus apartment building at 200 Lakeside Drive; and the Blanquie Building at 377 19th Street (building #2). While the project does cast shadows on other resources listed in the table, these structures would not be considered historic resources due to their OHP and/or OCHS ratings.

As noted above, existing buildings partially shade Snow Park during the mornings and afternoons under existing conditions. The proposed project would cast new shadow on other contributing landscape elements to the Lake Merritt District, including Lake Merritt during late afternoons of fall, winter, and spring, and Lakeside Park on winter afternoons. The project would also partially shade the Lakeside Drive Apartments during summer and fall afternoons and early and late afternoons during the winter and spring. The Blanquie Building, which is partially to entirely shadowed year round by existing buildings at various times, would be partially shadowed by the proposed project during fall mornings.

New shadows cast by the proposed project would not materially impair the historic resource value of Lake Merritt District, Lakeside Drive Apartments or Blanquie Building by materially altering those physical characteristics that convey their historical significance and that justify their inclusion on or eligibility for listing in the National Register of Historic Places, California Register of Historic Resources, Local register of historical resources or a historical survey form (DPR Form 523) with a rating of 1-5. Ornamentation and architectural details of the Lakeside Drive Apartments, which are Spanish Renaissance/Baroque in style and include twisted column orders with decorative friezes, decorative panels, cartouches, human figures and animal heads, would be somewhat muted without direct exposure to sunlight. However, the Lakeside Drive Apartments building would not be shadowed throughout the entire day, and therefore, the new shadow would not significantly obscure historical architectural details that contribute to the building's significance. Since the Blanquie Building is partially to entirely shadowed by existing buildings, the new shadow partially cast on this building during fall mornings would not constitute a significant new impact. As such, the new shadow cast by the proposed project would have a less-than-significant impact on historic resources.

Shadows cast from the proposed project would be longer than any others in the vicinity of the project site due to the height of the building.[6] However, due to the narrow building width and the shadow patterns from existing medium high-rise buildings in the vicinity of the project site, the new shadows from the proposed project would not substantially impair the beneficial use of any buildings, solar collectors, public parks, or historic resources. Therefore, the increase in shade and shadow that would result from the proposed project would not result in any significant impacts.

Table IV.G-1: Emerald Views Residential Development Shadow Impact Areas

Building Number	Address/Resource Name	OHP Rating	OCHS Rating
Historic District	Lake Merritt District (includes Snow Park and Regillus Apartments)	--	API
Historic District	Lakeside Drive Building Complex (Lakeside Drive Apartments, Schilling House Garage and Garden)	3B/3D/3S	A1+, API
1	Lake Merritt Wild Duck Refuge	1S	--
2	Regillus Apartment Building	3B	A1+
3	Snow Park	--	C1+
4	325, 327, 329, 331 19th Street (Somps Building)	6Z	E3
5	337, 339, 341, 343 19th Street (Blanquie Building)	5S2	Dc3
6	351, 355, 357, 361 19th Street	--	F3
7	350 20th Street	--	F3
8	415 20th Street	--	F3
9	2000 Broadway Street (The Gray Shop Site)	5S2	N/A (1982)
10	1970 Franklin Street	--	F3
11	2000 Franklin Street	--	F3
12	2001 Franklin Street	--	Fc3
13	1800 Harrison Street	--	F3
14	1901 Harrison Street	--	F3
15	1939 Harrison Street	--	N/A (1968)
16	1999 Harrison Street (Lake Merritt Plaza)	--	F3
17	1900 Webster Street	--	F3
19	1922 Webster Street	--	Fd3
20	1938, 1940 Webster Street	--	F3
21	1951 Webster Street	--	F3
22	1956 Webster Street	--	F3
22	330 19th Street	--	F3

Source: LSA Associates, 2008

c. Significant Aesthetic, Shadow and Wind Impacts. Implementation of the proposed project would not result in any significant impacts to visual resources and would not cast shadows that would impair the beneficial use of parks or impair historic resources.

Impact WIND-1: Ground level winds may exceed the City's wind criterion of winds above 36 miles per hour for more than 1 hour during daylight hours during the year. (S)

[6] Please note that while the proposed project would be taller that any existing building in the vicinity, other development projects have been proposed that are taller than this project. Please see Figure IV.G-21 which shows the proposed development included in the cumulative aesthetics analysis, and describes the height of these structures.

A wind analysis was conducted for the proposed project as the tower would be over 100 feet tall and would be built in close proximity to Lake Merritt. The ground-level wind analysis (found in Appendix E) was conducted using a scale model of the existing site, the proposed project, and the surrounding cityscape, which were constructed and tested in a wind tunnel facility at the University of California at Davis. Wind speeds were measured from 25 locations near the project site, and were measured for north-northwest, west, and south-southwest wind directions, which represent the wind directions with the highest wind speeds that occur in Oakland. An exceedance of the wind criterion would occur if the project would create winds above 36 miles per hour for more than 1 hour during daylight hours during the year.

According to the ground-level wind analysis, implementation of the proposed project could cause two exceedences of the City of Oakland's wind hazard criterion, one at the northeastern corner of the project site, and the other at the southwest corner of the proposed building.

However, the wind tunnel model used in the analysis did not include existing or proposed landscaping. Trees are known to have a beneficial effect on potential adverse wind effects, by creating friction and ultimately reducing street-level winds. According to the analysis, the area near the identified exceedance points would be affected by existing or relocated trees, as well as landscape elements such as the arbor. Appropriate landscaping around the project site, in conjunction with existing trees at Snow Park and in the vicinity of the project site, would likely reduce wind speeds at these locations by 10 percent or more, which would eliminate the predicted exceedance of the wind criterion. Furthermore, COA UTIL-1 requires the submittal and approval of a landscape plan for the entire site prior to issuance of a building permit. See Figure III-4 for the draft landscape plan. With surrounding and proposed landscaping, implementation of the proposed project would likely not create winds that exceed City standards and wind impacts would be less than significant. However, until landscaping and design features are finalized, it cannot be determined if wind speeds would actually be reduced below the City wind threshold. Therefore, impacts resulting from wind have been conservatively deemed significant and unavoidable.

> Mitigation Measure WIND-1: The applicant shall prepare and, subject to review and approval by the City, implement a wind reduction plan that reduces wind hazards at the street level to the maximum feasible extent, subject to review and approval by the City. The wind reduction plan shall include the previously conducted wind analysis and the final landscape plan which would include both structural and landscape design features, as well as mature trees located adjacent to the project site. The applicant shall develop the wind reduction plan in coordination with the salvage plan (Mitigation Measures CULT-1b, 1c and 1d) which shall be submitted to the Landmarks Preservation Advisory Board for review and approval. While it is likely that ground wind levels would be reduced to less than significant levels, until the landscaping and design features are reviewed and finalized, it is not feasible to determine if wind speeds would actually be reduced below the City wind threshold. (SU)

Impact WIND-2: Wind levels on the roof terrace may exceed the City's wind criterion of winds above 36 miles per hour for more than 1 hour during daylight hours during the year. (S)

The proposed project includes a 6,626 square foot roof terrace approximately 400 feet above the ground. The roof terrace is designed as private, useable open space. It could include green roof elements (landscaping), as well as a path, tables and chairs. It is likely that wind levels at this high

elevation exceed the City's criteria and might make siting in the area uncomfortable and therefore not useable.

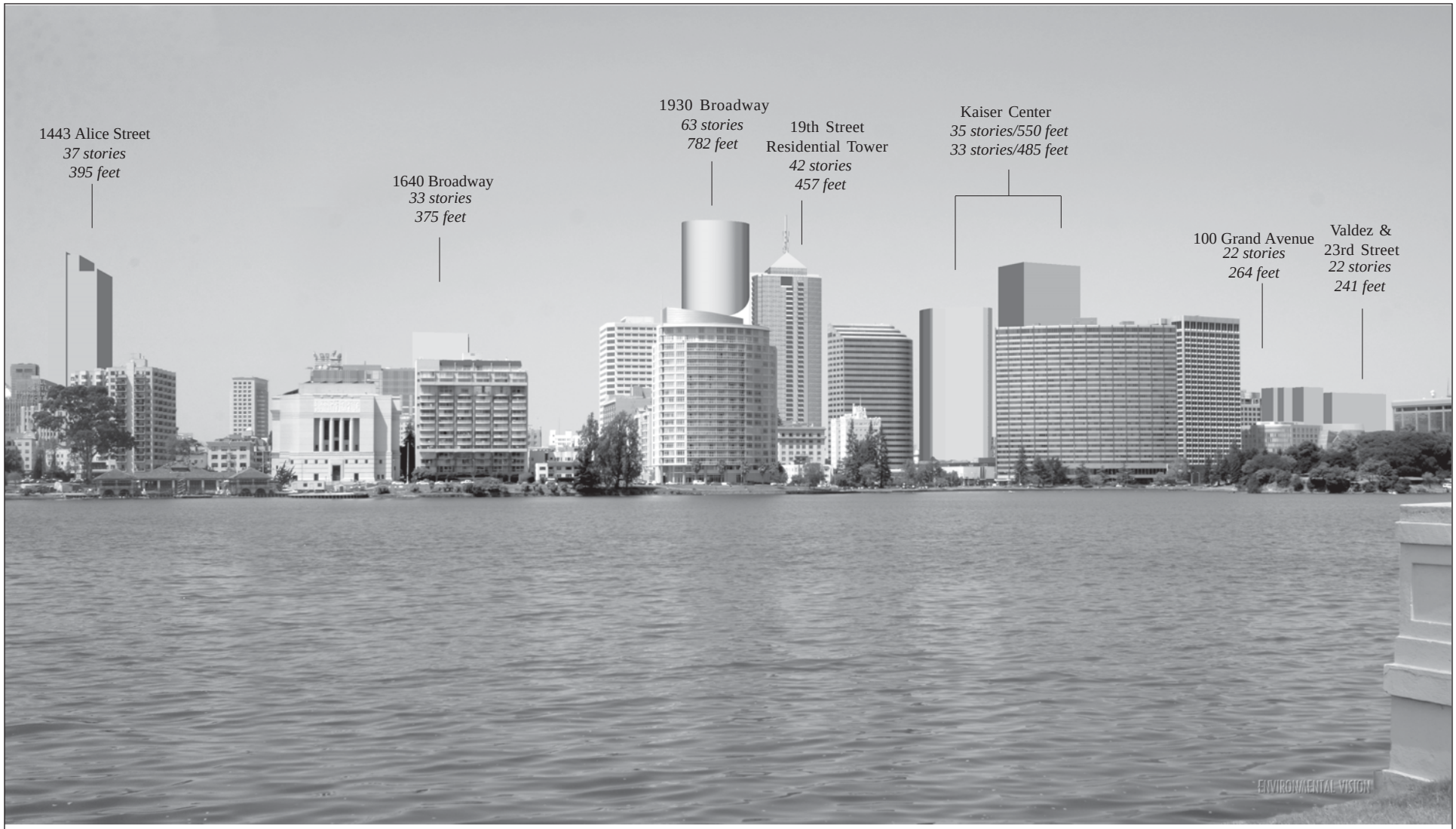
> Mitigation Measure WIND-2: A qualified meteorologist shall be retained by the project applicant to conduct a wind analysis for the roof terrace. The analysis shall be submitted to the City's Planning and Zoning Division for review and approval. Any mitigation measures identified in the wind analysis to ensure that the roof terrace is in conformance with the City's wind criteria shall be implemented. If wind levels exceed the City's criteria and cannot be reduced, the roof terrace shall not be utilized as open space. (LTS)

d. Cumulative Aesthetic, Shadow and Wind Impacts. The geographic area considered for the cumulative aesthetics analysis includes the Downtown Subdistricts in close proximity to the project site including the Uptown, City Center, Chinatown, Gold Coast and Lake Merritt Subdistricts. This area was chosen because it includes the project site and the immediately surrounding Downtown context. Figure IV.G-21 shows existing buildings and proposed buildings within the viewshed that are included in the cumulative aesthetic, shadow, and wind analysis.

(1) Aesthetic Resources. Visual simulations were prepared to show the potential cumulative aesthetic impacts of the proposed project in combination with other past, present and reasonably foreseeable future projects. These visual simulations are shown in Figure IV.G-22 through Figure IV.G-29. The cumulative scenario visual simulation from 19th Street at Harrison Street looking southwest (Figure IV.G-22) does not show any other cumulative development projects other than the proposed project, and is not further described in this section.

As shown in the majority of the visual simulations, the proposed project as well as cumulative developments would be visible from various vantage points within the vicinity of the project site. The view from Alice Street looking northeast under the cumulative scenario is shown in Figure IV.G-23. In this visual simulation, the proposed project and the 1443 Alice Street are visible in the foreground, and a small portion of the 100 Grand Avenue is visible in the background. While these visual simulations show that increased development would be evident, the cumulative development would not result in a significant aesthetic impact as dense urban development with tall structures currently exists in this area and defines its visual character. The cumulative development from this vantage point would not block a scenic resource, and would not be considered a significant impact.

Visual simulations Figures IV.G-24, IV.G-25, and IV.G-26 all include portions of Lake Merritt. The visual simulation from the public pier at 10th Street (Figure IV.G-24) shows that the proposed project and the Kaiser Center would be visible under the cumulative scenario. The view from Athol Plaza under the cumulative scenario (Figure IV.G-25) shows the skyline view of buildings along the northwest side of Lake Merritt. This simulation shows the proposed project in close proximity to the proposed 1930 Broadway Building and the proposed new building at the Kaiser Center. The 1443 Alice Street project, 100 Grand Avenue project and Valdez and 23rd Street project are visible as well. The view from Harrison Street looking south under the cumulative scenario (Figure IV.G-26) shows a small portion of the proposed 1443 Alice Street project. While these visual simulations show that increased development would be evident, it would not be considered a significant impact as dense urban development with tall structures currently exists in this area. Figures IV.G-24 and IV.G-25 shows that the cumulative development would generally integrate with the existing tall structure development in the area. As shown Figure IV.G-26, the new development represents a very small



Visual simulation of proposed project with cumulative development

LSA

FIGURE IV.G-21

NOT TO SCALE

Note: This conceptual visual simulation is intended to portray building massing, not specific architectural design.

Emerald Views Residential Development EIR

Annotated Cumulative Simulation Diagram

SOURCE: ENVIRONMENTAL VISION, 050709; LSA ASSOCIATES, INC., OCTOBER 2009.

I:\SDZ0601 19th street\Figures\Fig_IVG21.ai (10/22/09)

Existing view from 19th Street at Harrison Street looking southeast

Visual simulation of proposed project with cumulative development

LSA

FIGURE IV.G-22

NOTE: NO CUMULATIVE PROJECTS ARE SEEN IN THIS VIEW.

Emerald Views Residential Development EIR

Cumulative Development, Visual Simulation

Viewpoint 1-from 19th Street at Harrison Street Looking Southeast

SOURCE: ENVIRONMENTAL VISION, 10/30/09.

I:\SDZ0601 19th street\figures\Fig_IVG22.indd (11/2/09)

Existing view from Alice Street at 14th Street looking northeast

Visual simulation of proposed project with cumulative development

LSA

NOTE: THIS CONCEPTUAL VISUAL SIMULATION IS INTENDED TO PORTRAY BUILDING MASSING, NOT SPECIFIC ARCHITECTURAL DESIGN.

FIGURE IV.G-23

Emerald Views Residential Development EIR

Cumulative Development, Visual Simulation

Viewpoint 2-from Alice Street at 14th Street Looking Northeast

SOURCE: ENVIRONMENTAL VISION, 10/30/09

I:\SDZ0601 19th street\figures\Fig_IVG23-28.indd (11/2/09)

Existing view from Public pier at end of 19th Street looking northwest

Visual simulation of proposed project with cumulative development

LSA

NOTE: THIS CONCEPTUAL VISUAL SIMULATION IS INTENDED TO PORTRAY BUILDING MASSING, NOT SPECIFIC ARCHITECTURAL DESIGN.

SOURCE: ENVIRONMENTAL VISION, 10/30/09

FIGURE IV.G-24

Emerald Views Residential Development EIR

Cumulative Development Visual Simulation

Viewpoint 3-from Public pier at 19th Street Looking Northwest

I:\SDZ0601 19th street\figures\Fig_IVG23-28.indd (11/2/09)

Existing view from Lakeshore Avenue near Athol Plaza looking northwest

Visual Simulation of the proposed project with cumulative development

LSA

FIGURE IV.G-25

NOTE: THIS CONCEPTUAL VISUAL SIMULATION IS INTENDED TO PORTRAY BUILDING MASSING, NOT SPECIFIC ARCHITECTURAL DESIGN.

Emerald Views Residential Development EIR

Cumulative Development Visual Simulation

Viewpoint 4-From Lakeshore Avenue Looking Northwest

SOURCE: ENVIRONMENTAL VISION, 05/21/08

I:\SDZ0601 19th street\figures\Figs_IVG25-IVG27.indd (10/21/09)

Existing view from Harrison Street near 21st Street looking south

Visual Simulation of the proposed project with cumulative development

LSA

FIGURE IV.G-26

NOTE: THIS CONCEPTUAL VISUAL SIMULATION IS INTENDED TO PORTRAY BUILDING MASSING, NOT SPECIFIC ARCHITECTURAL DESIGN.

Emerald Views Residential Development EIR

Cumulative Development Visual Simulation

Viewpoint 5-From Harrison Street Looking South

SOURCE: ENVIRONMENTAL VISION, 05/21/08

Existing view from I-580 at Grand Avenue looking west

Visual Simulation of the proposed project with cumulative development

LSA

NOTE: THIS CONCEPTUAL VISUAL SIMULATION IS INTENDED TO PORTRAY BUILDING MASSING, NOT SPECIFIC ARCHITECTURAL DESIGN.

SOURCE: ENVIRONMENTAL VISION, 05/21/08

FIGURE IV.G-27

Emerald Views Residential Development EIR

Cumulative Development Visual Simulation

Viewpoint 6-From I-580 Looking West

I:\SDZ0601 19th street\figures\Figs_IVG25-IVG27.indd (10/21/09)

Existing view from Mountain View Cemetery looking southwest

Visual simulation of proposed project with cumulative development

LSA

FIGURE IV.G-28

NOTE: THIS CONCEPTUAL VISUAL SIMULATION IS INTENDED TO PORTRAY BUILDING MASSING, NOT SPECIFIC ARCHITECTURAL DESIGN.

Emerald Views Residential Development EIR

Cumulative Development, Visual Simulation

Viewpoint 7-from Mountain View Cemetery Looking Southwest

SOURCE: ENVIRONMENTAL VISION, 10/30/09

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portion of this view (the first several stories of which are blocked by existing buildings) and would not impact the view of Lake Merritt.

The views from I-580 at Grand Avenue looking west under the cumulative scenario (Figure IV.G-27) and from Mountain View Cemetery under the cumulative scenario (Figure IV.G-28) show that cumulative development would generally blend in with the Oakland skyline, and would not block any views of Lake Merritt.

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; or creating a new source of light or glare. Cumulative development, in combination with the proposed project, would continue to result in new buildings of varying size and scale being developed on infill or vacant sites throughout the area.

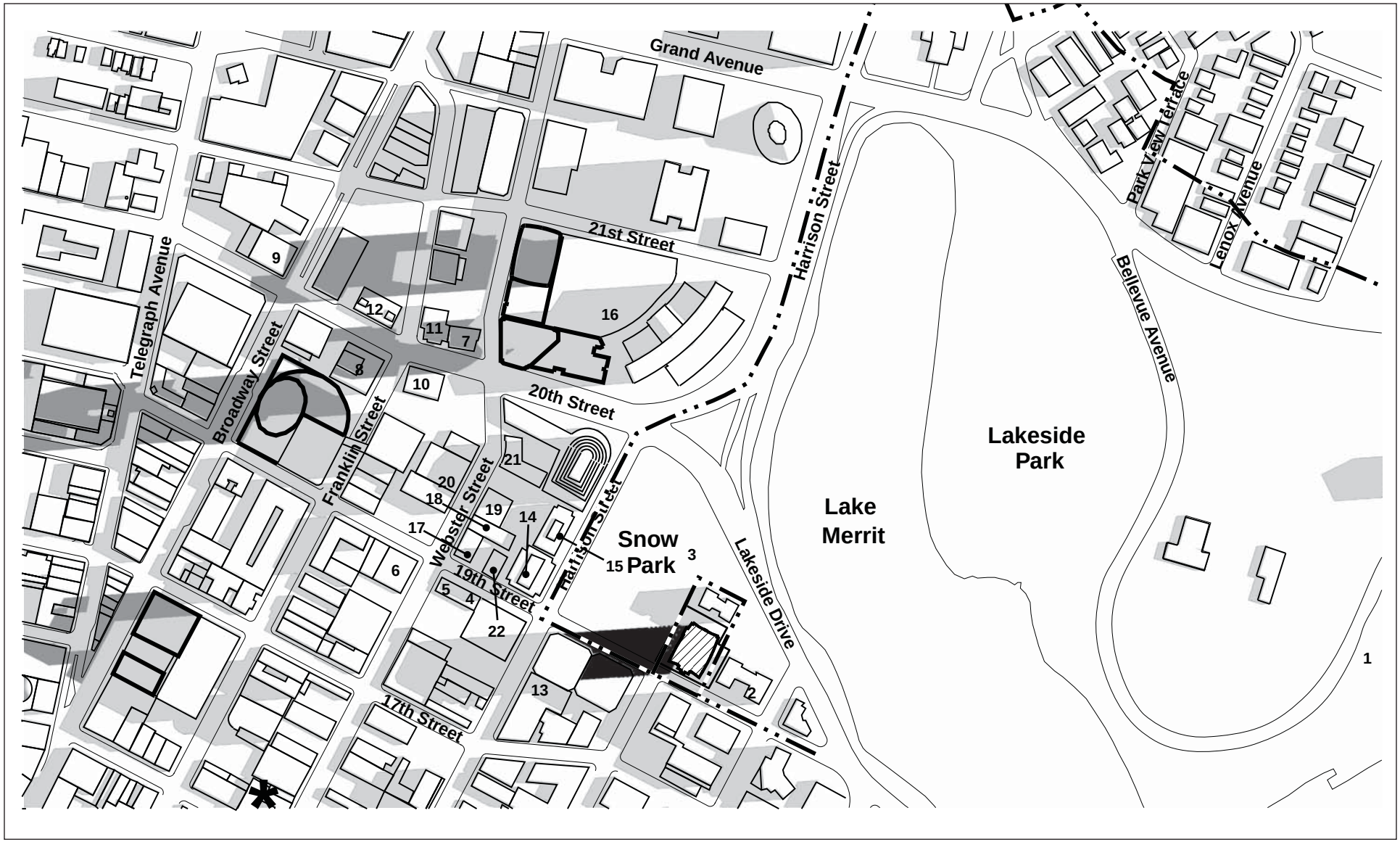
The proposed project, as well as other cumulative development projects, would be subject to the City's Design Review process. The purpose of the Design Review process is to consider the design treatment and relationship to the surrounding built environment and to ensure that no significant adverse aesthetic impacts would result. Based on the analysis provided in the aesthetics 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.

(2) Shade and Shadow. As previously described, the proposed project would not cast a shadow on existing solar collectors; impair the beneficial use of any public or quasi-public park, lawn, garden, or open space; or cast a shadow on a historic resource, thereby materially altering those physical characteristics that convey their historical significance and that justify their inclusion on or eligibility for listing in the National Register of Historic Places, or California Register of Historic Resources.

To determine if there would be a cumulative shade and shadow impact on parks, solar collectors, and historic resources, cumulative shadow patterns were developed to show the potential shadows associated with the proposed project, as well as future development projects considered under the cumulative scenario. Shadow simulations were prepared for June 21, September 21, December 21, and March 21, for 9:00 a.m. (morning), 12:00 p.m. (noon), and 3:00 p.m. (afternoon), and are shown in Figure IV.G-29 through Figure IV.G-40.

Open Space. As is shown in the cumulative shadow figures, none of the projects included in the cumulative analysis would cast shadows on Snow Park or Lake Merritt. As has been noted previously in this section, Snow Park is shadowed by buildings for much of the year, and the addition of a new shadow associated with the proposed project would not substantially change the way people use the park. With regards to Lake Merritt, shadows associated with the proposed project would only fall during limited times of the year, and would not substantially impair the beneficial use of the area.

Solar Collectors. As noted previously in this section, the proposed project would not cast shadows on identified solar collectors. While the development of these other projects would contribute to a cumulative impact, the proposed project does not block sunlight to solar collectors, and would not contribute to a cumulative impact.



LSA

FIGURE IV.G-29

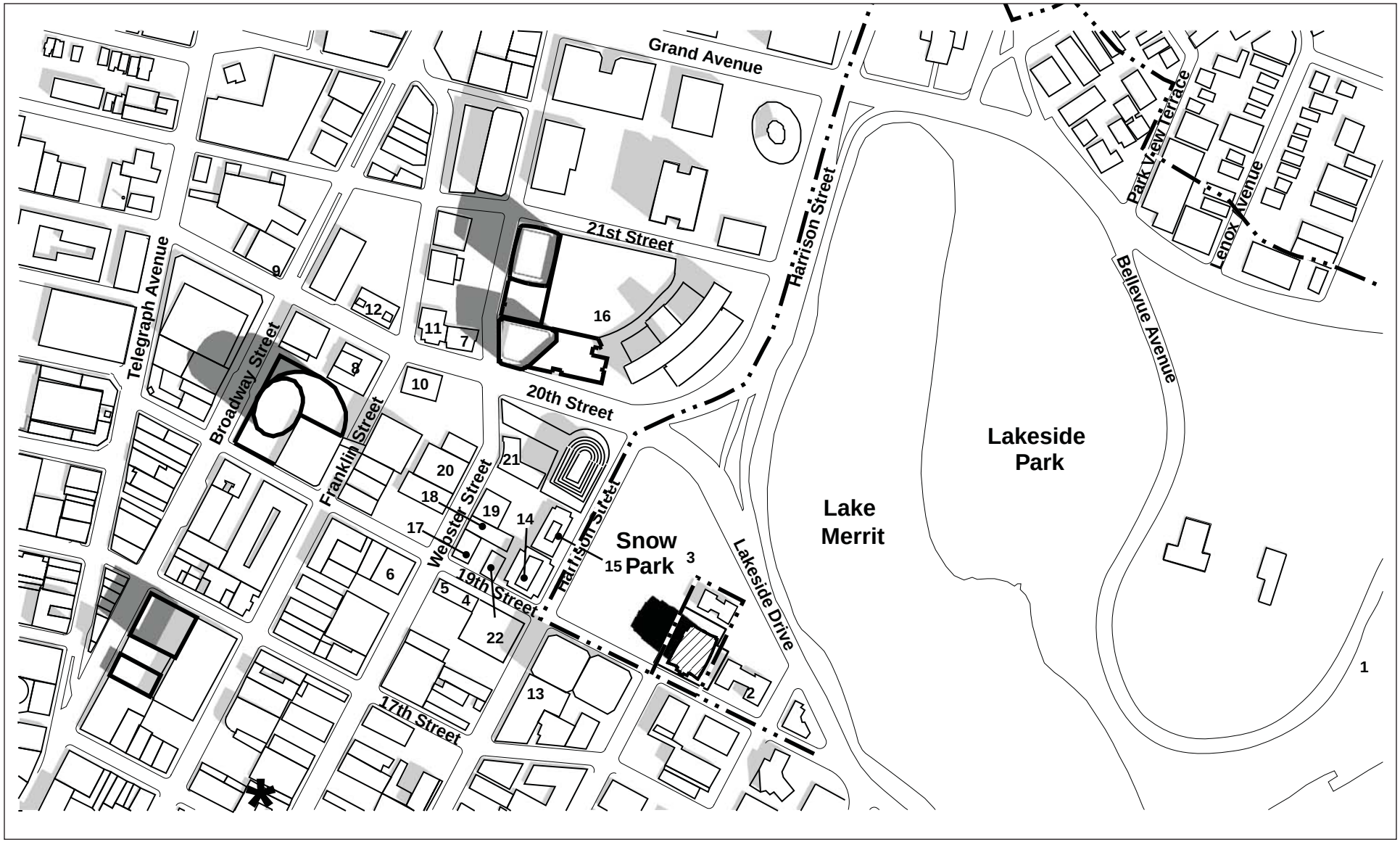
Emerald Views Residential Development EIR

Cumulative Project Shadow Patterns

June 21, 9:00 a.m. PDT

SOURCE: ENVIRONMENTAL VISION, 4/27/09; LSA ASSOCIATES, INC., 2009.

I:\SDZ0601 19th street\Figures\Fig_IVG29.ai (5/12/10)



LSA

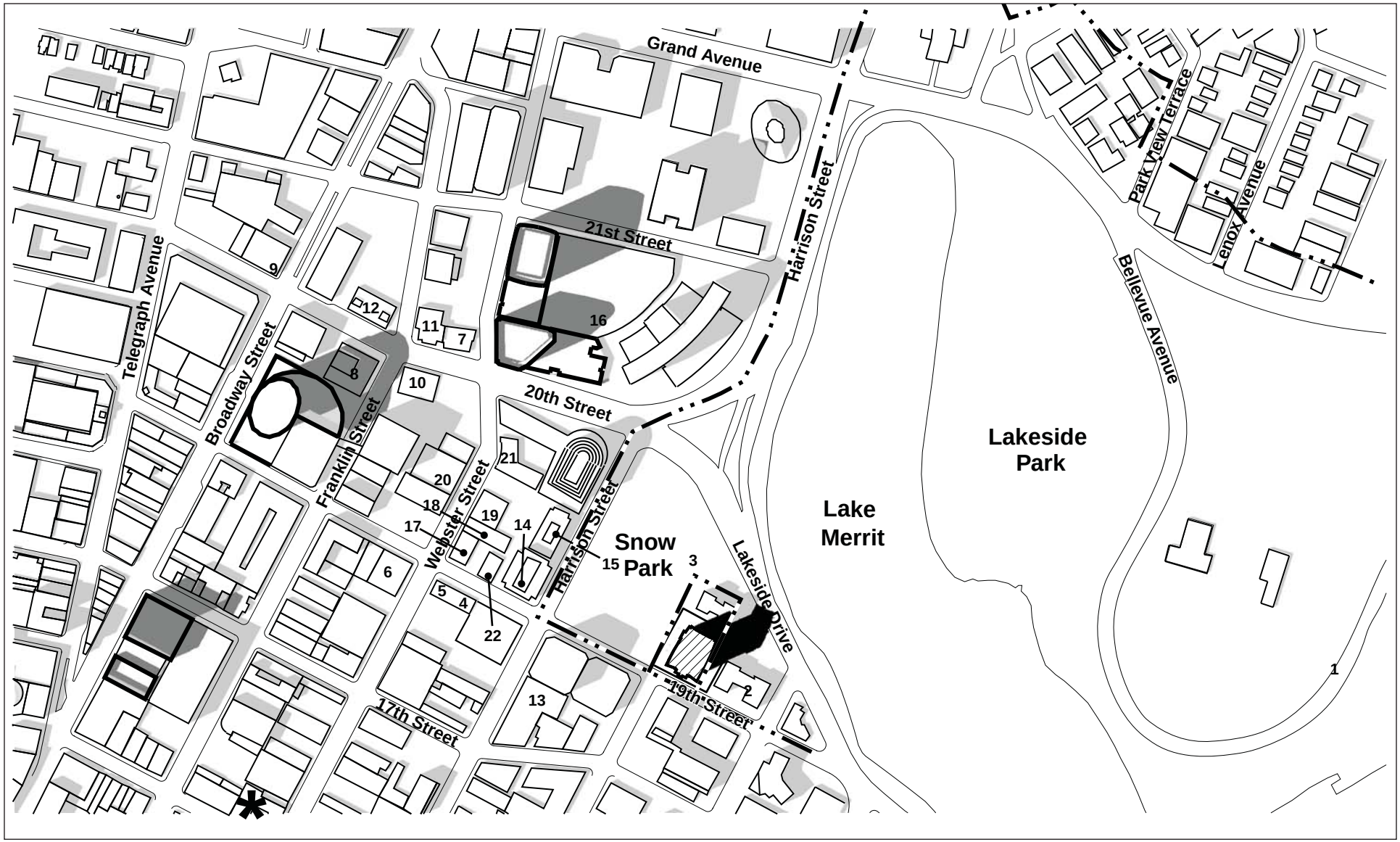
FIGURE IV.G-30

Project Site | Cumulative Project Sites | Existing Shadow | New Project Shadow | Cumulative Project Shadow | Solar Collector | Historic District (Area of Primary Importance, API) | Historic Resource

Emerald Views Residential Development EIR
Cumulative Project Shadow Patterns
June 21, 12:00 p.m. PDT

SOURCE: ENVIRONMENTAL VISION, 4/27/09; LSA ASSOCIATES, INC., 2009.

I:\SDZ0601 19th street\Figures\Fig_IVG30.ai (5/12/10)



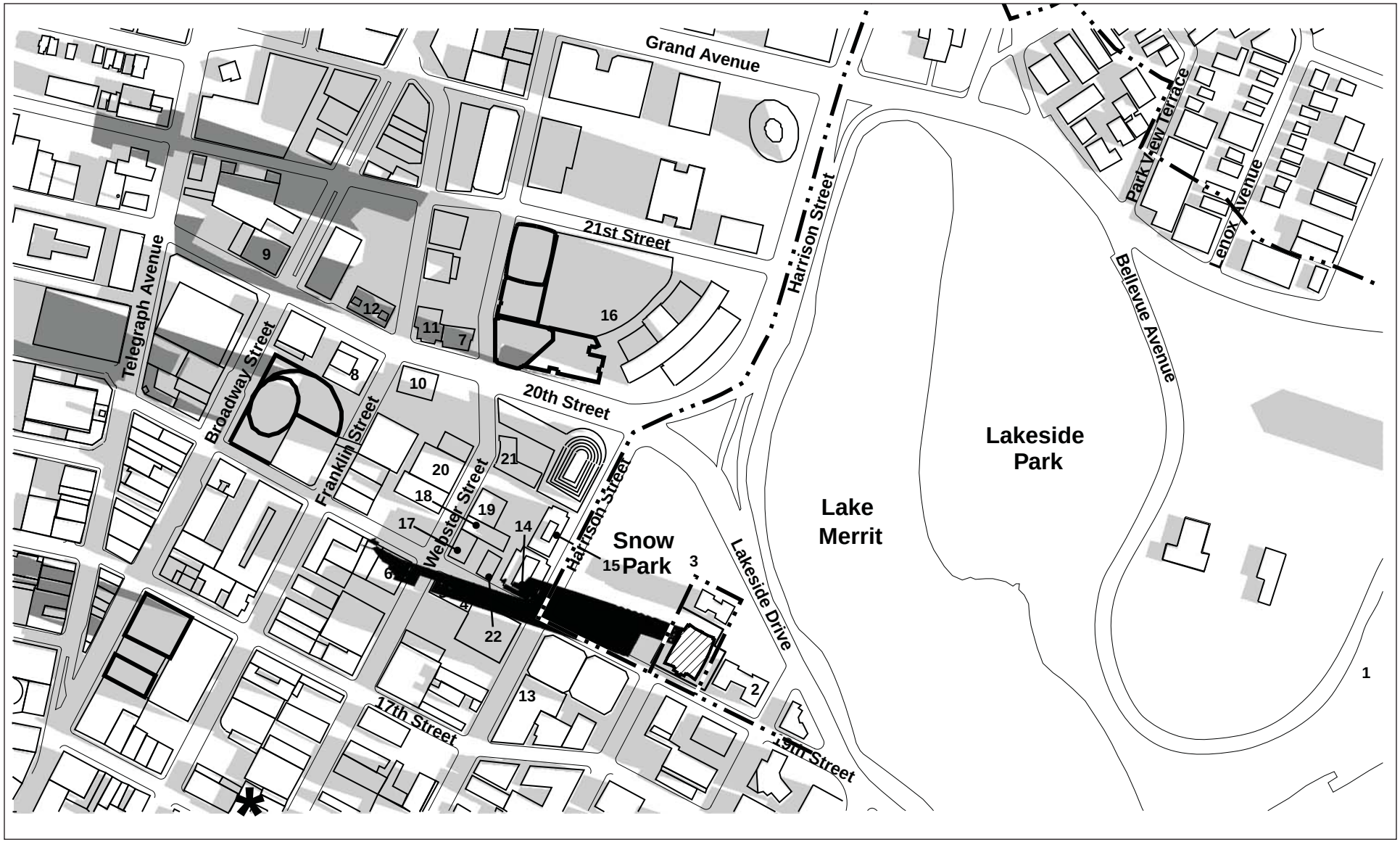
LSA

FIGURE IV.G-31

Emerald Views Residential Development EIR
Cumulative Project Shadow Patterns
June 21, 3:00 p.m. PDT

SOURCE: ENVIRONMENTAL VISION, 4/27/09; LSA ASSOCIATES, INC., 2009.

I:\SDZ0601 19th street\Figures\Fig_IVG31.ai (5/12/10)



LSA

FIGURE IV.G-32

N

0 150 300

Project Site

Cumulative Project Sites

Existing Shadow

New Project Shadow

Cumulative Project Shadow

* Solar Collector

Historic District (Area of Primary Importance, API)

1 Historic Resource

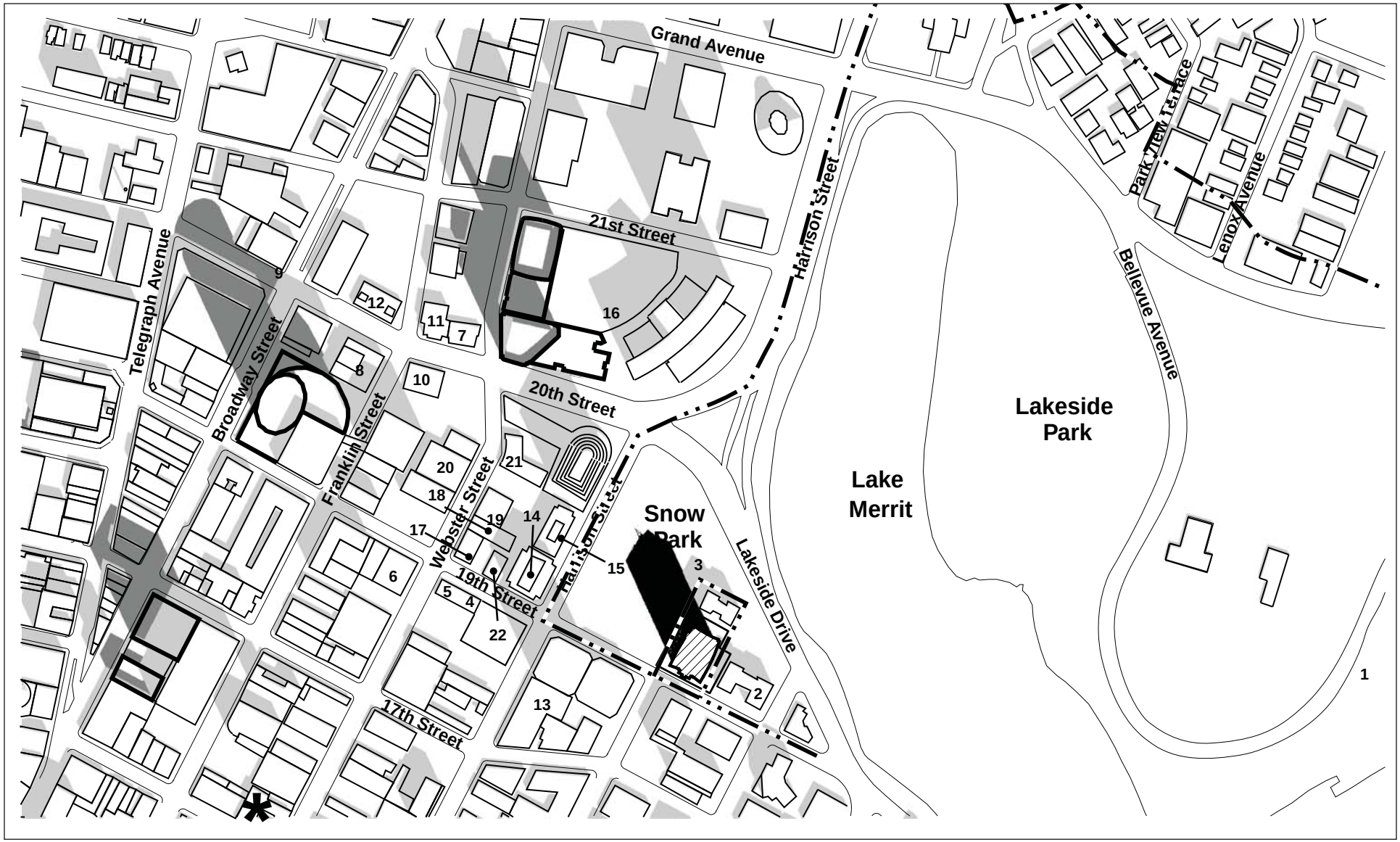
Emerald Views Residential Development EIR

Cumulative Project Shadow Patterns

September 21, 9:00 a.m. PDT

SOURCE: ENVIRONMENTAL VISION, 4/27/09; LSA ASSOCIATES, INC., 2009.

I:\SDZ0601 19th street\Figures\Fig_IVG32.ai (5/12/10)



LSA

FIGURE IV.G-33

N

0 150 300

Project Site

Cumulative Project Sites

Existing Shadow

New Project Shadow

Cumulative Project Shadow

* Solar Collector

Historic District (Area of Primary Importance, API)

1 Historic Resource

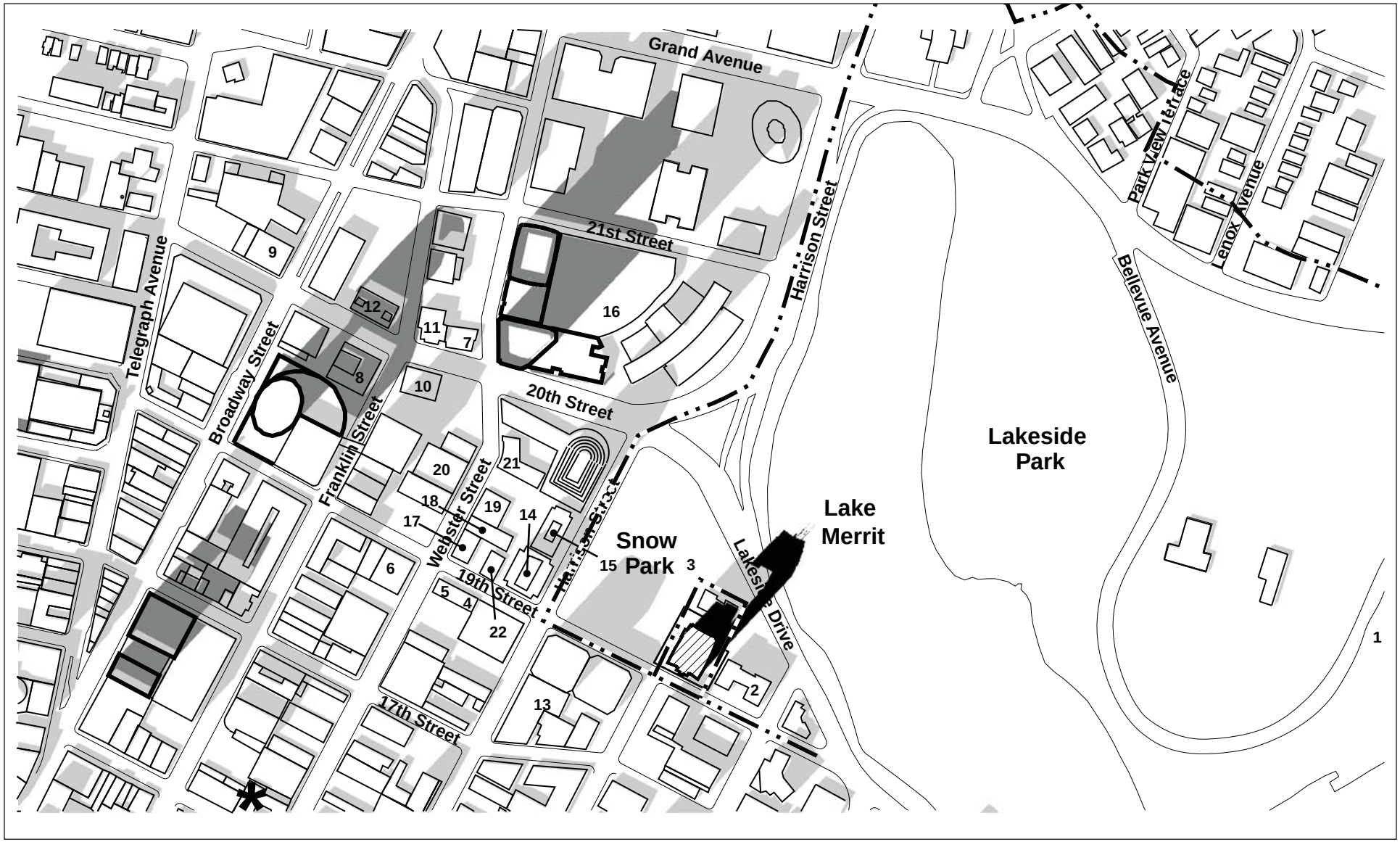
Emerald Views Residential Development EIR

Cumulative Project Shadow Patterns

September 21, 12:00 p.m. PDT

SOURCE: ENVIRONMENTAL VISION, 4/27/09; LSA ASSOCIATES, INC., 2009.

I:\SDZ0601 19th street\Figures\Fig_IVG33.ai (5/12/10)



LSA

FIGURE IV.G-34

N

0 150 300

Project Site

Cumulative Project Sites

Existing Shadow

New Project Shadow

Cumulative Project Shadow

* Solar Collector

Historic District (Area of Primary Importance, API)

1 Historic Resource

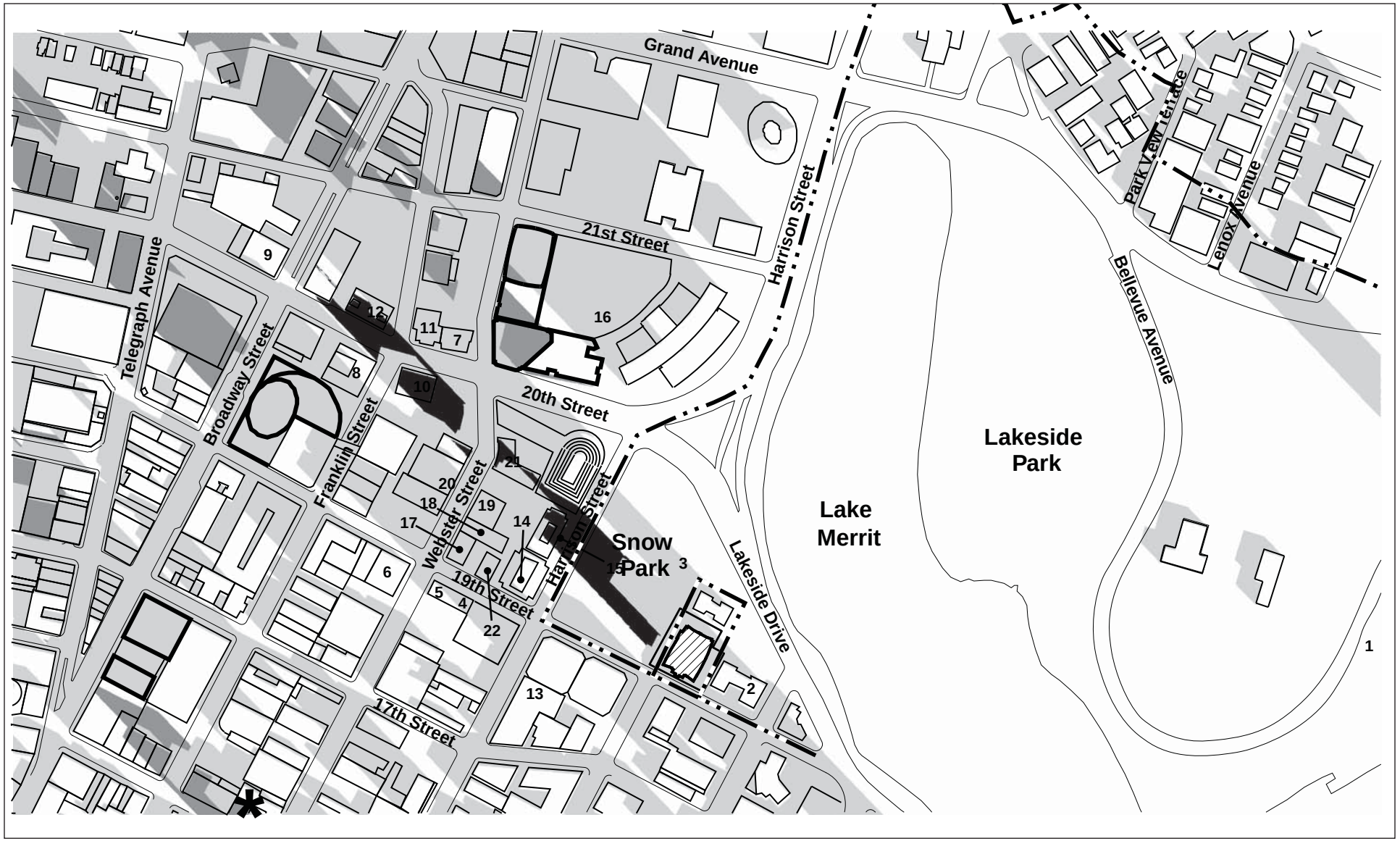
Emerald Views Residential Development EIR

Cumulative Project Shadow Patterns

September 21, 3:00 p.m. PDT

SOURCE: ENVIRONMENTAL VISION, 4/27/09; LSA ASSOCIATES, INC., 2009.

I:\SDZ0601 19th street\Figures\Fig_IVG34.ai (5/12/10)



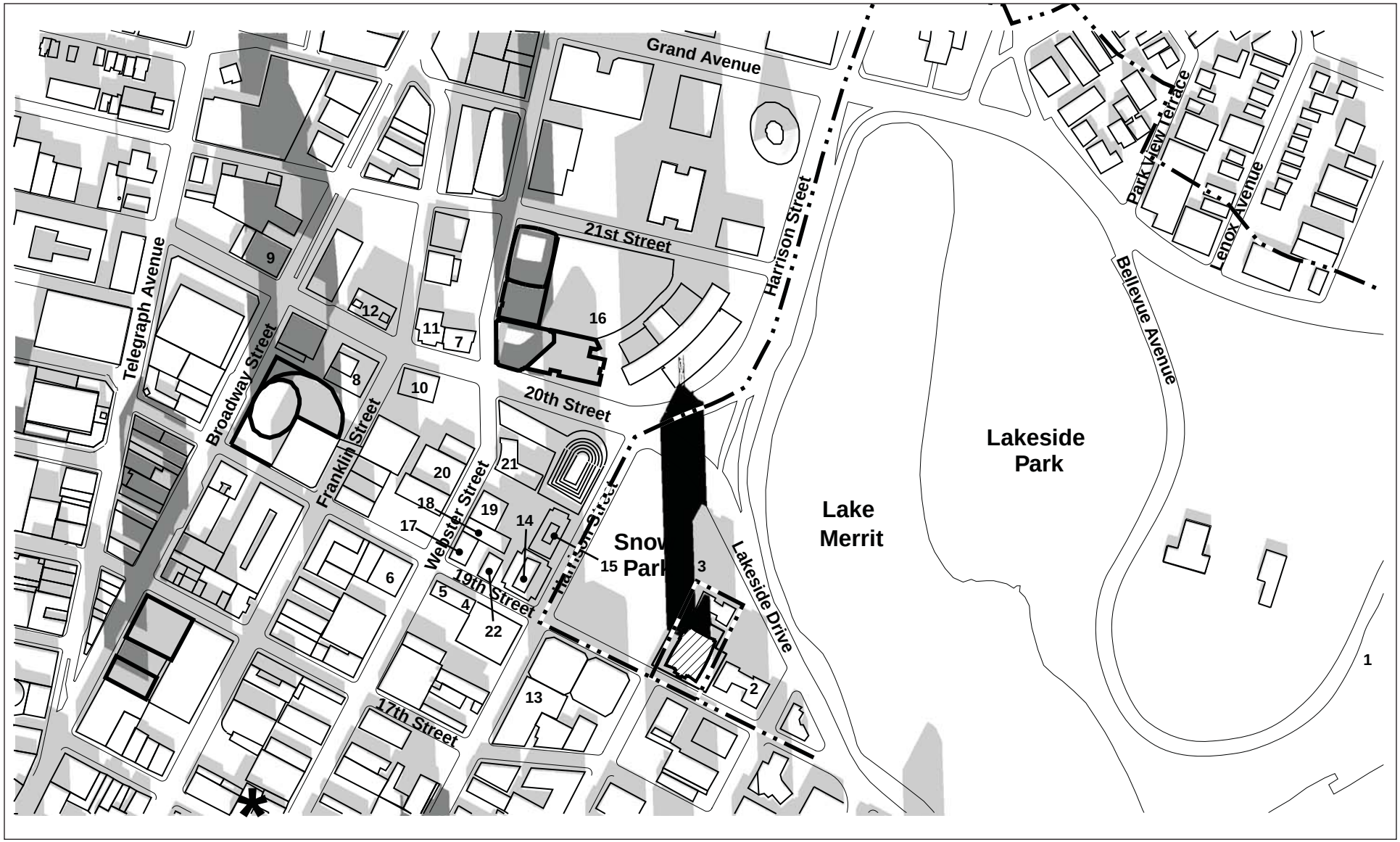
LSA

FIGURE IV.G-35

Emerald Views Residential Development EIR
Cumulative Project Shadow Patterns
December 21, 9:00 a.m. PST

SOURCE: ENVIRONMENTAL VISION, 4/27/09; LSA ASSOCIATES, INC., 2009.

I:\SDZ0601 19th street\Figures\Fig_IVG35.ai (5/12/10)



LSA

FIGURE IV.G-36

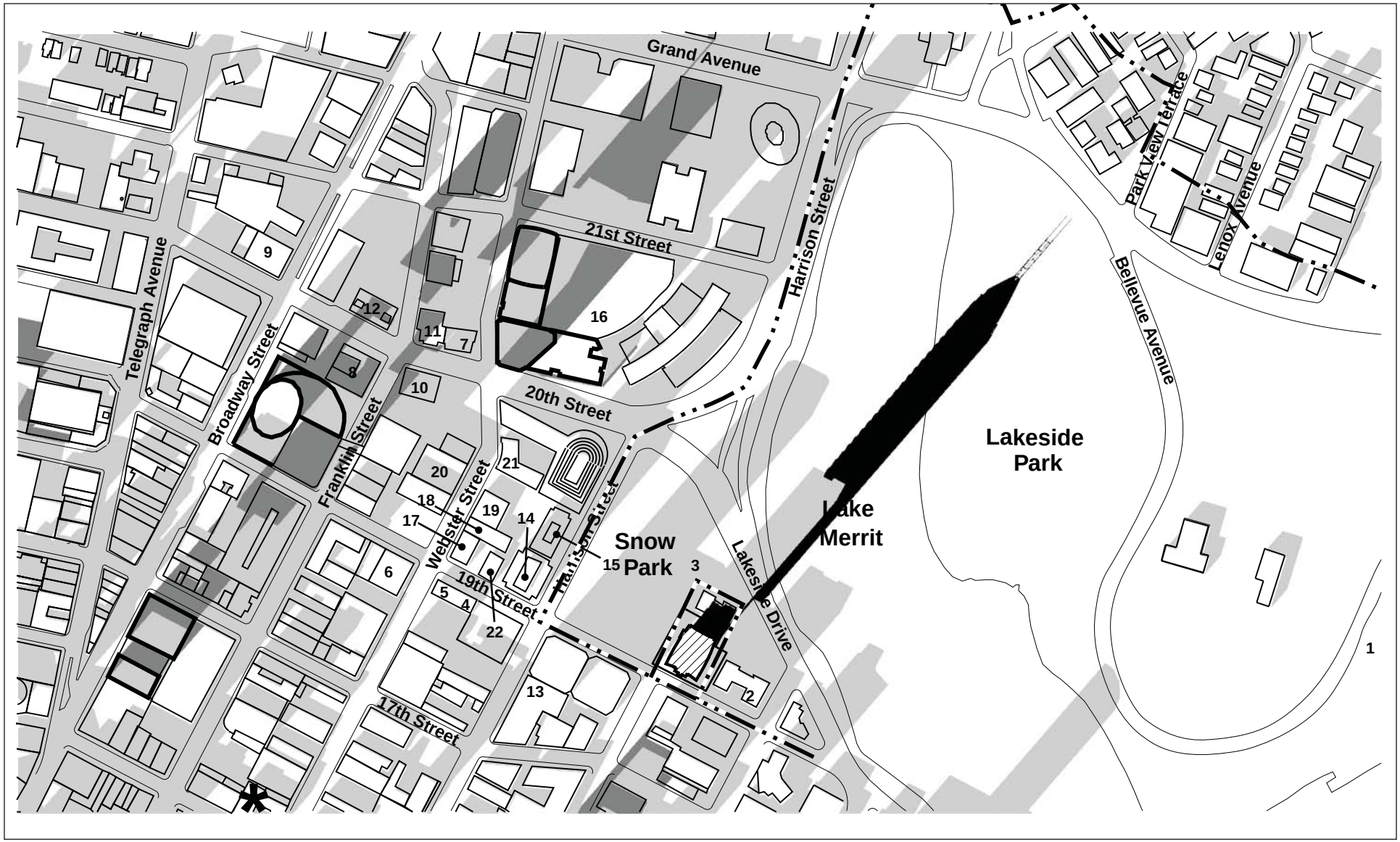
Emerald Views Residential Development EIR

Cumulative Project Shadow Patterns

December 21, 12:00 p.m. PST

SOURCE: ENVIRONMENTAL VISION, 4/27/09; LSA ASSOCIATES, INC., 2009.

I:\SDZ0601 19th street\Figures\Fig_IVG36.ai (5/12/20)



LSA

FIGURE IV.G-37

N

0 150 300

Project Site

Cumulative Project Sites

Existing Shadow

New Project Shadow

Cumulative Project Shadow

Solar Collector

Historic District (Area of Primary Importance, API)

1 Historic Resource

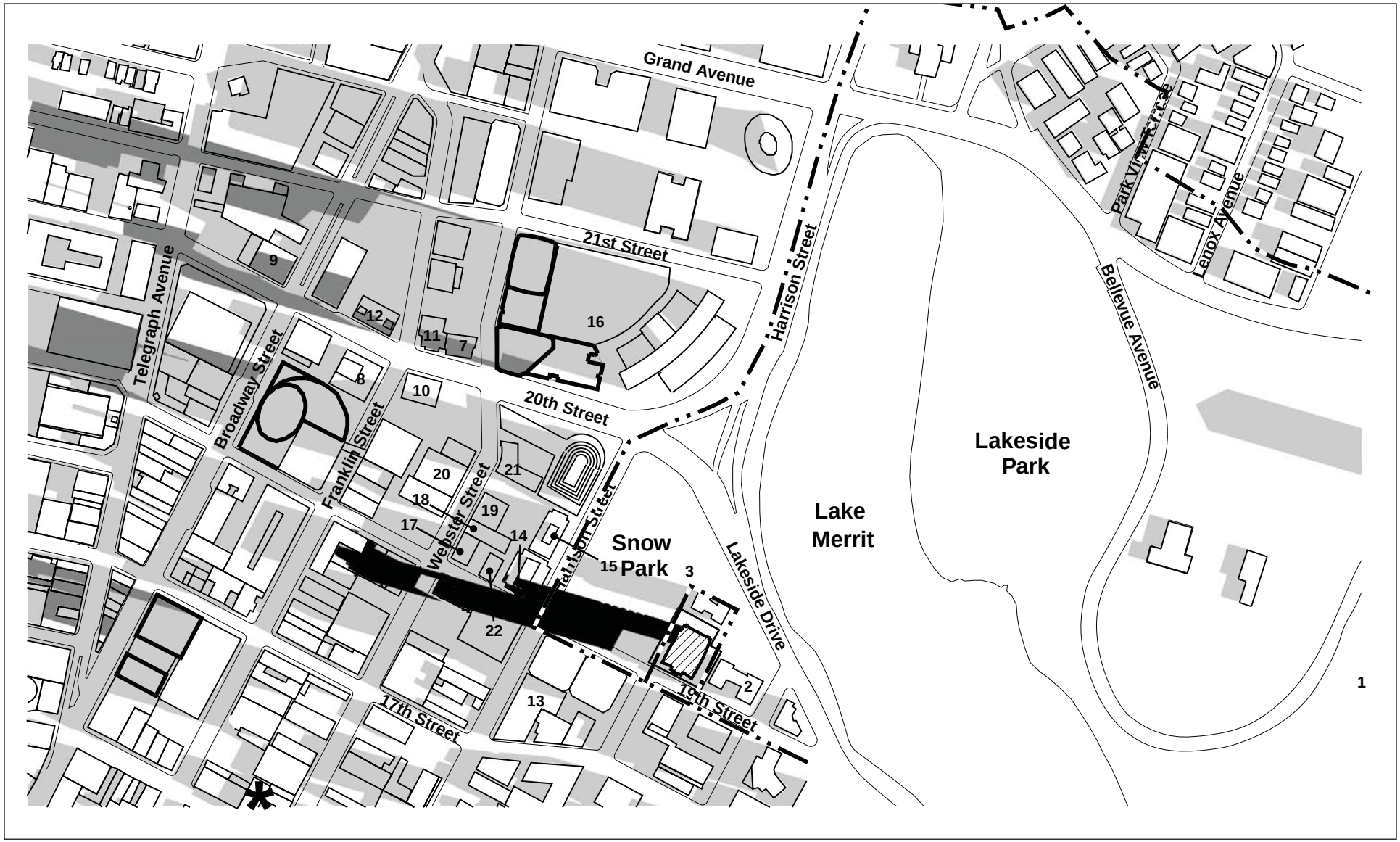
Emerald Views Residential Development EIR

Cumulative Project Shadow Patterns

December 21, 3:00 p.m. PST

SOURCE: ENVIRONMENTAL VISION, 4/27/09; LSA ASSOCIATES, INC., 2009.

I:\SDZ0601 19th street\Figures\Fig_IVG37.ai (5/12/10)



LSA

FIGURE IV.G-38

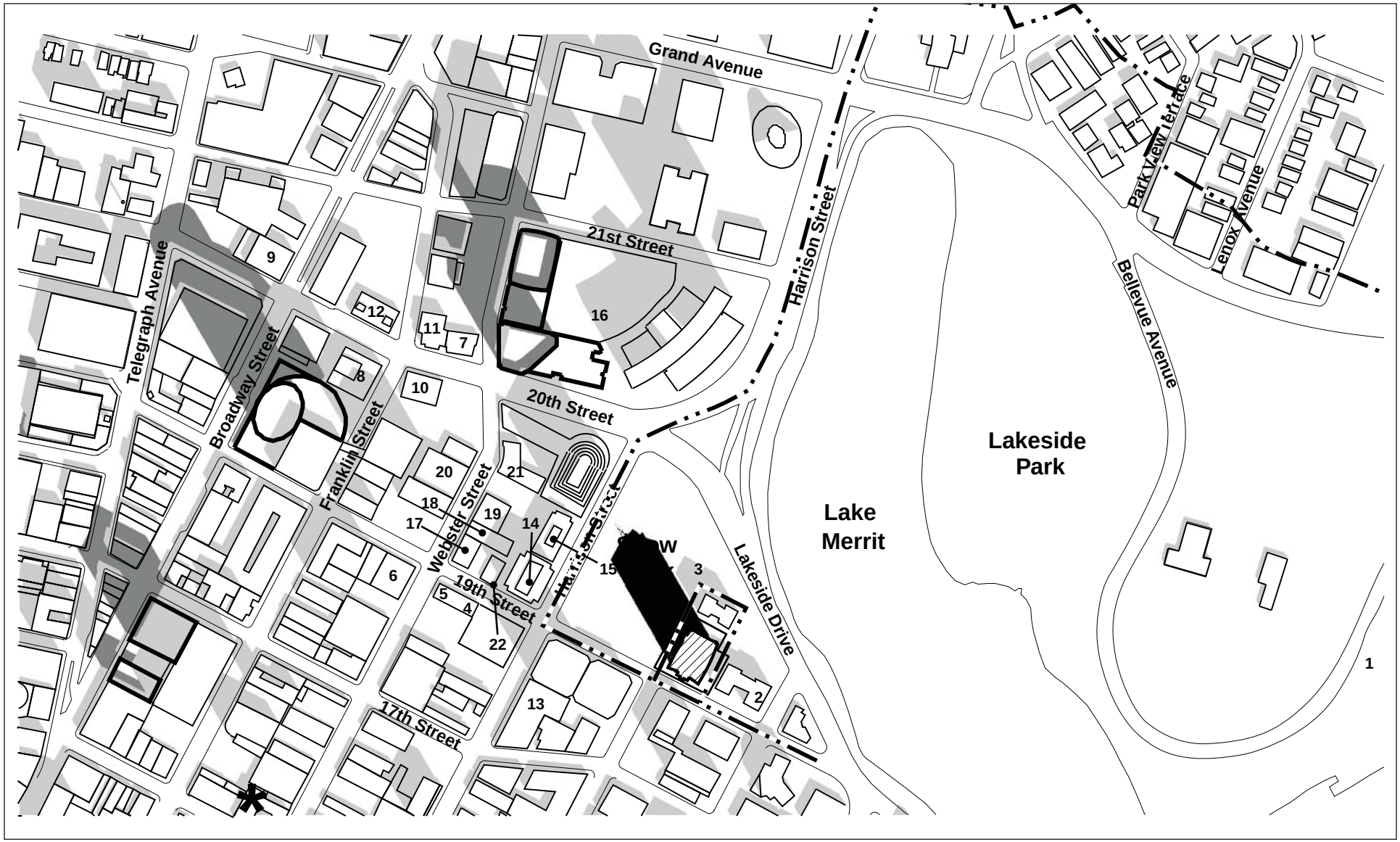
Project Site | Cumulative Project Sites | Existing Shadow | New Project Shadow | Cumulative Project Shadow | Solar Collector | Historic District (Area of Primary Importance, API) | Historic Resource

0 150 300

Emerald Views Residential Development EIR
Cumulative Project Shadow Patterns
March 21, 9:00 a.m. PDT

SOURCE: ENVIRONMENTAL VISION, 4/27/09; LSA ASSOCIATES, INC., 2009.

I:\SDZ0601 19th street\Figures\Fig_IVG38.ai (5/12/10)



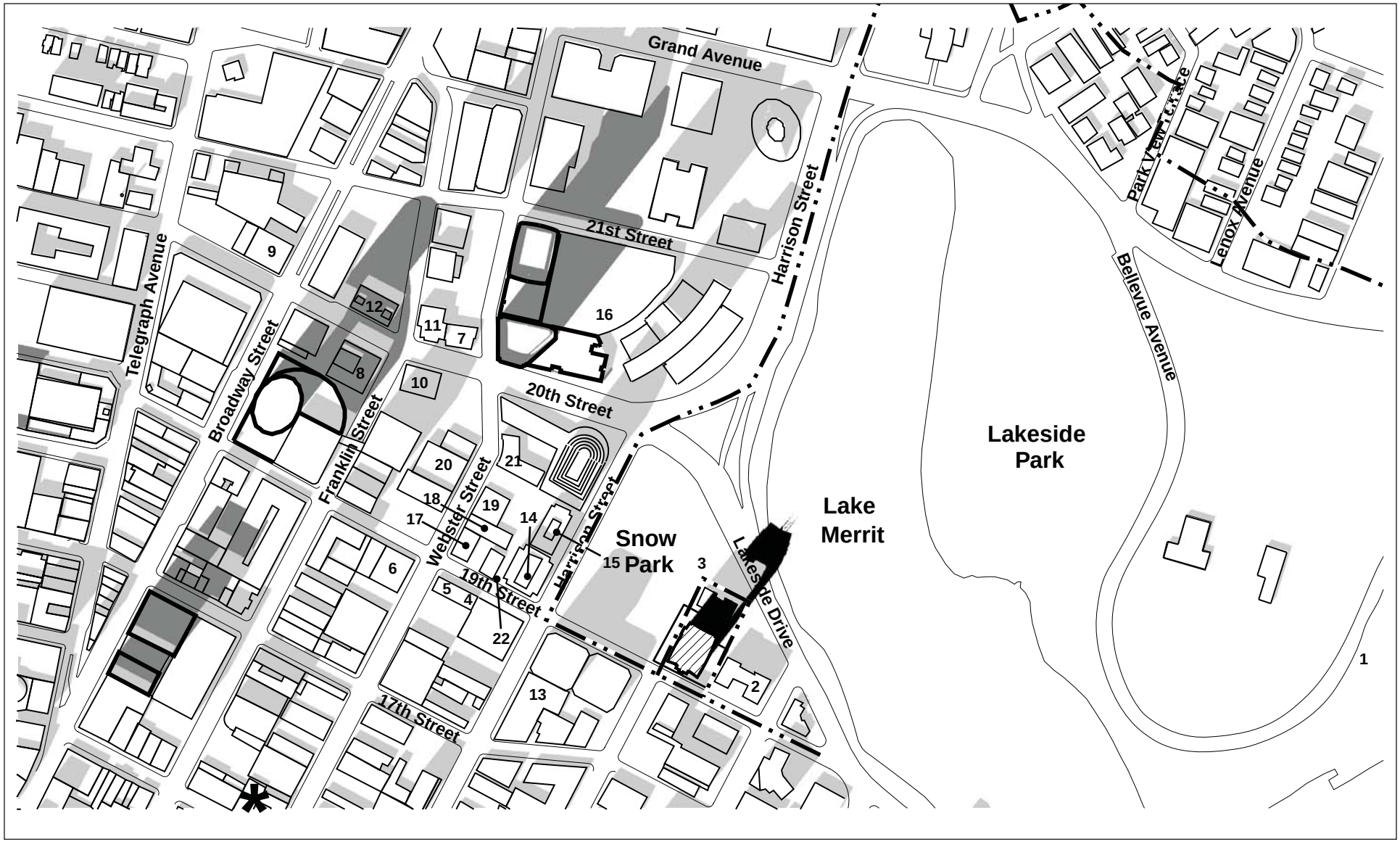
LSA

FIGURE IV.G-39

Emerald Views Residential Development EIR
Cumulative Project Shadow Patterns
March 21, 12:00 p.m. PDT

SOURCE: ENVIRONMENTAL VISION, 4/27/09; LSA ASSOCIATES, INC., 2009.

I:\SDZ0601 19th street\Figures\Fig_IVG39.ai (5/12/10)



LSA

FIGURE IV.G-40

Emerald Views Residential Development EIR
Cumulative Project Shadow Patterns
March 21, 3:00 p.m. PDT

SOURCE: ENVIRONMENTAL VISION, 4/27/09; LSA ASSOCIATES, INC., 2009.

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Historic Resources. Cumulative development, in combination with the proposed project, would continue to create new shadows in the project area. In a built urban environment like the project area, nearly all land uses create for others and, in turn, are subject to shade and shadows from neighboring structures.

As described previously in this section, the proposed project would cast shadows on four identified historic resources (Lake Merritt Wild Duck Refuge, Lake Merritt District, Lakeside Drive Building Complex, and the Blanquie Building at 377 19th Street). However, the other development included in the cumulative scenario would not cast shadows these historic resources. Additionally, the proposed project as well as cumulative development projects, is subject to the City's Design Review process. The Design Review process would consider height and massing to ensure that no significant adverse shade and shadow impacts would result. Based on the analysis provided in the shade and shadow section, and for the reasons summarized above, the project would not contribute to any significant adverse cumulative shade or shadow impacts when considered together with past, present, and reasonably foreseeable future development.

(3) Wind. A test of potential wind conditions under cumulative levels of development was conducted as part of the wind analysis. Under the cumulative conditions, the two exceedances of significance thresholds by the proposed project would still exist for an estimated duration of seven hours per year. As discussed under Impact WIND-1, the wind tunnel model used in the analysis did not include existing or proposed landscaping. According to the analysis, the area near the identified exceedance points would be affected by existing or relocated trees, as well as landscape elements such as the arbor. Existing and proposed landscaping and landscape elements on the project site, in conjunction with existing trees at Snow Park and in the vicinity of the project site, would likely eliminate the predicted exceedance of the wind criterion. While it is likely that ground wind levels would be reduced to less-than-significant levels, until the landscaping and design features are reviewed and finalized, it is not feasible to determine if wind speeds would actually be reduced below the City wind threshold. Therefore, impacts resulting from wind have been conservatively deemed significant and unavoidable. (SU)

In addition, all past, present, and reasonably foreseeable future development projects over 100 feet in height (and located adjacent to a substantial water body or in Downtown), would be required to undergo additional wind analysis and to recommend and implement mitigation measures to address any potential impacts.

Impact WIND-3: Cumulative ground level winds may exceed the City's wind criterion of winds above 36 miles per hour for more than 1 hour during daylight hours during the year. (S)

Mitigation Measure WIND 3: Implement Mitigation Measure WIND-1. (SU)

H. CULTURAL AND PALEONTOLOGICAL RESOURCES

The purpose of this section is to: (1) describe the baseline conditions for cultural, archeological, and paleontological resources of the project area; (2) describe the legal significance of identified historic architectural, archeological, and paleontological resources within the project area; and (3) identify potentially significant impacts to such resources that may result from project implementation, and recommend mitigation measures 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.

This section is based on a Historic Resources Technical Report[2] and an Archaeological and Paleontological Study[3] included in Appendix F and G, respectively.

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 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 Setting

The following describes the CEQA and City of Oakland General Plan regulatory and policy requirements that relate to cultural resources. This section also includes the City of Oakland's Standard Conditions of Approval related to cultural and paleontological resources.

[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.

[2] Carey & Co., 2009. *222 19th Street Residential Condominiums Project Oakland, California; Historic Resources Technical Report.* April 10.

[3] LSA Associates, Inc., 2006. *An Archaeological and Paleontological Resources Study for the 19th Street Residential Condominiums Project.* September.

(1) CEQA Requirements. In the City of Oakland, a "historical resource" under CEQA is a resource which meets any of the following criteria:

- 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 historic 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.

According to *CEQA Guidelines* Section 15064.5(a)(3), 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"

In accordance with *CEQA Guidelines* Section 15064.5(b), a substantial adverse change in the significance of a historical resource constitutes 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 historical resource is "material impaired" when a project demolishes or materially alters, in an adverse manner, those physical characteristics of the resource that conveys its historical significance and that justify its inclusion in, or eligibility for inclusion in, a historical resources 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 must be 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 must determine 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.[4] 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

[4] 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.

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 lands under the jurisdiction of State or local authorities.

(2) Oakland General Plan 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; such a listing would classify a building as a historical resource under CEQA. Based on a City-wide preliminary architectural inventory completed by the 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 their district status. The ranking system, which is summarized in Table IV.H-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.
- **History/Association**. Association of person or organization, the importance of any event association with patterns, and the age of the building.
- **Integrity and Reversibility**. Evaluation of the buildings condition, its exterior and interior alterations, and any structural removals.

Table IV.H-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 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 associated 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 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 while allowing for continued 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 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.

COA CULT-1: Archaeological Resources Ongoing throughout demolition, grading, and/or construction

a) Pursuant to *CEQA Guidelines* section 15064.5 (f), "provisions for historical or unique archaeological resources accidentally discovered during construction" should be instituted. Therefore, in the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and the project applicant and/or lead agency shall consult with a qualified archaeologist or paleontologist to assess the significance of the find. If any find is determined to be significant, representatives of the project proponent and/or lead agency and the qualified archaeologist would meet to determine the appropriate avoidance measures or other appropriate measure, with the ultimate determination to be made by the City of Oakland. All significant cultural materials

recovered shall be subject to scientific analysis, professional museum curation, and a report prepared by the qualified archaeologist according to current professional standards.

b) In considering any suggested measure proposed by the consulting archaeologist in order to mitigate impacts to historical resources or unique archaeological resources, the project applicant shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project site while measure for historical resources or unique archaeological resources is carried out.

c) Should an archaeological artifact or feature be discovered on-site during project construction, all activities within a 50-foot radius of the find would be halted until the findings can be fully investigated by a qualified archaeologist to evaluate the find and assess the significance of the find according to the CEQA definition of a historical or unique archaeological resource. If the deposit is determined to be significant, the project applicant and the qualified archaeologist shall meet to determine the appropriate avoidance measures or other appropriate measure, subject to approval by the City of Oakland, which shall assure implementation of appropriate measure measures recommended by the archaeologist. Should archaeologically-significant materials be recovered, the qualified archaeologist shall recommend appropriate analysis and treatment, and shall prepare a report on the findings for submittal to the Northwest Information Center.

The following additional COAs (COA CULT-1a through COA CULT-1d) are added to supplement and further implement COA CULT-1, Archaeological Resources, to decrease the potential for adverse damage of archaeological resources, paleontological resources and human remains during construction.

To implement the additional COAs, a project applicant may choose to either implement COA CULT-1a (Intensive Pre-Construction Study) or COA CULT-1d (Construction ALERT Sheet). If in either case a high potential presence of historic period archaeological resources on the project site is indicated, or a potential resource is discovered, the project applicant shall also implement:

- COA CULT-1b (Construction-Period Monitoring);
- COA CULT-1c (Avoidance and/or Find Recovery); and
- COA CULT-1d (to establish a Construction ALERT Sheet if the Intensive Pre-Construction Study was originally implemented per COA CULT-1a, or to update and provide more specificity to the initial Construction ALERT Sheet if a Construction Alert Sheet was originally implemented per COA CULT-1d).

If in either case a high potential presence of historic-period archaeological resources is not indicated, or a potential resource is not discovered, COA CULT-1 shall apply and be adequate to decrease the potential for adverse damage of archaeological resources, paleontological resources and human remains during construction.

COA CULT-1a through COA CULT-1d are detailed as follows:

COA CULT-1a: Intensive Pre-Construction Study. *Prior to demolition, grading and/or construction.* The project applicant, upon approval from the City Planning Department, may choose to complete a site-specific, intensive archaeological resources study prior to soil-disturbing activities occurring on the project site. The purpose of the site-specific, intensive archaeological resources study is to identify early the potential presence

of history-period archaeological resources on the project site. If that approach is selected, the study shall be conducted by a qualified archaeologist approved by the City Planning Department.

If prepared, at a minimum, the study shall include:

- An intensive cultural resources study of the project site, including subsurface presence/absence studies, of the project site. Field studies conducted by the approved archaeologist(s) may include, but are not limited to, auguring and other common methods used to identify the presence of archaeological resources;
- A report disseminating the results of this research;
- Recommendations for any additional measures that could be necessary to mitigate any adverse impacts to recorded and/or inadvertently discovered cultural resources.

If the results of the study indicate a high potential presence of historic-period archaeological resources on the project site, or a potential resource is discovered, the project applicant shall hire a qualified archaeologist to monitor any ground disturbing activities on the project site during construction (see CAO CULT-1b, Construction-Period Monitoring, below), implement avoidance and/or find recovery measures (see COA CULT-1c, Avoidance and/or Find Recovery, below), and prepare an ALERT Sheet that details what could potentially be found at the project site (see COA CULT-1d, Construction ALERT Sheet, below). If no potential resources is discovered during the preconstruction study, COA CULT-1, Archaeological Resources, shall apply and be adequate to reduce any potentially significant impact to less than significant.

COA CULT-1b: Construction-Period Monitoring. *Ongoing throughout demolition, grading and/or construction.* Archaeological monitoring would include briefing construction personnel about the type of artifacts that may be present (as referenced in the ALERT Sheet, require per COA CULT-1d, Construction ALERT Sheet, below) and the procedures to follow if any are encountered, field recording and sampling in accordance with the Secretary of Interior's *Standards and Guidelines for Archaeological Documentation*, notifying the appropriate officials if human remains or cultural resources are discovered, or preparing a report to document negative findings after construction is completed. If a significant archaeological resource is discovered during the monitoring activities, adherence to COA CULT-1c, Avoidance and/or Find Recovery, discussed below), would be required to reduce the impact to less than significant. The project applicant shall hire a qualified archaeologist to monitor all ground-disturbing activities on the project site throughout construction.

COA CULT-1c: Avoidance and/or Find Recovery. *Ongoing and throughout demolition, grading and/or construction.*

If a significant archaeological resource is present that could be adversely impacted by the proposed project, the project applicant of the specific project site shall either:

- Stop work and redesign the proposed project to avoid any adverse impacts on significant archaeological resource(s); or,
- If avoidance is determined infeasible by the City, design and implement an Archaeological Research Design and Treatment Plan (ARDTP). The project applicant shall hire a qualified archaeologist who shall prepare a draft ARDTP that shall be submitted to the City Planning Department for review and approval. The ARDTP is required to identify how the proposed data recovery program would preserve the significant information the archaeological resource is expected to contain. The ARDTP shall identify the scientific/ historic research questions applicable to the expected resource, the data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. The ARDTP shall include the analysis and specify the curation and storage methods. Data recovery, in general, shall be limited to the portions of the archaeological resource that could be impacted by the proposed project. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practical. The project applicant shall implement the ARDTP. Because the intent of

the ARDTP is to save as much of the archaeological resource as possible, including moving the resource, if feasible, preparation and implementation of the ARDTP would reduce the potential adverse impact to less than significant.

COA CULT-1d: Construction ALERT Sheet. *Prior to and during all subsurface construction activities for the Projec*t.

The project applicant, upon approval from the City Planning Department, may choose to prepare a construction ALERT sheet prior to soil-disturbing activities occurring on the project site, instead of conducting site-specific, intensive archaeological resources pursuant to COA CULT-1a, above. The project applicant shall submit for review and approval by the City prior to subsurface construction activity an "ALERT" sheet prepared by a qualified archaeologist with visuals that depict each type of artifact that could be encountered on the project site. Training by the qualified archaeologist shall be provided to the project's prime contractor; any project subcontractor firms (including demolition, excavation, grading, foundation, and pile driving); and/or utilities firm involved in soil-disturbing activities within the project site. The ALERT sheet shall state, in addition to the basic measures of COA CULT-1, that in the event of discovery of the following cultural materials, all work must be stopped in the area and the City's Environmental Review Officer contacted to evaluate the find: concentrations of shellfish remains; evidence of fire (ashes, charcoal, burnt earth, firecracked rocks); concentrations of bones; recognizable Native American artifacts (arrowheads, shell beads, stone mortars [bowls], humanly shaped rock); building foundation remains; trash pits, privies (outhouse holes); floor remains; wells; concentrations of bottles, broken dishes, shoes, buttons, cut animal bones, hardware, household items, barrels, etc.; thick layers of burned building debris (charcoal, nails, fused glass, burned plaster, burned dishes); wood structural remains (building, ship, wharf); clay roof/floor tiles; stone walls or footings; or gravestones.

Prior to any soil-disturbing activities, each contractor shall be responsible for ensuring that the ALERT sheet is circulated to all field personnel, including machine operators, field crew, pile drivers, and supervisory personnel. If the project applicant chooses to implement COA CULT-1d, Construction ALERT Sheet, and a potential resource is discovered on the project site during ground disturbing activities during construction, the project applicant shall hire a qualified archaeologist to monitor any ground disturbing activities on the project site during construction (see COA CULT-1b, Construction-Period Monitoring, above), implement avoidance and/or find recovery measures (see COA CULT-1c, Avoidance and/or Find Recovery, above), and prepare an updated ALERT Sheet that addresses the potential resource(s) and other possible resources based on the discovered find found on the project site. If no potential resource(s) are discovered during ground disturbing activities during construction pursuant to the construction ALERT sheet, COA CULT-1, Archaeological Resources, shall apply and be adequate to reduce any potentially significant impact to less than significant.

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 paleontolo-

gist (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 under the criteria set forth in Section 15064.5 of the CEQA Guidelines. 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.

COA CULT-4 (same as COA NOISE-7): Construction Adjacent to 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 adjacent structures, including the 244 Lakeside Drive apartment building, the Schilling Garage, and the Regillus apartments and garage, and design means and methods of construction that shall be utilized to not exceed the thresholds.

To further implement Standard Condition of Approval CULT-4:

a) The applicant shall retain an historic preservation architect (who meets the Secretary of the Interior's Standards and Guidelines for Historic Preservation Professional Qualifications) and a structural engineer (Monitoring Team), who shall undertake an Existing Conditions Study (Study) of the 244 Lakeside Drive building, the Schilling Garage, and the Regillus apartments and garage. The purpose of the Study is to establish the baseline condition of the building(s) prior to construction of the Project, including but not limited to the location and extent of any visible cracks or spalls on the building(s), and condition of the roof. The Study shall include written descriptions and photographs of the building(s) and include, without limitation, those physical characteristics that justify their inclusion on or eligibility for the Local Register. The Study shall be reviewed and approved by the City of Oakland's CEDA Deputy Director and Building Official.

b) Initial construction activities shall be monitored by the Monitoring Team and if vibrations are above threshold levels, appropriate measures shall be taken to reduce vibrations to below established levels. The Monitoring Team shall continue to regularly monitor the buildings during construction and report any changes to the existing conditions, including but not limited to, expansion of cracks, new spalls, or other exterior deterioration, including roof damage. If there are such changes, appropriate corrective measures shall be taken to reduce vibrations to below established levels, or other measures taken to prevent damage to the building(s).

c) Written monitoring reports shall be submitted to the City's CEDA Deputy Director and Building Official on a periodic basis as determined by the Monitoring Team. The structural engineer shall consult with the historic preservation architect, especially if any problems with character defining features of a historic resource are discovered. If in the opinion of the structural engineer, in consultation with the historic preservation architect, substantial adverse impacts to historic resources related to construction activities are found during construction, the Monitoring Team shall immediately inform, both orally and in writing, the project sponsor and/or the project sponsor's designated representative responsible for construction activities and the City Planning and Zoning Division. The project sponsor shall follow the Monitoring Team's recommendations for corrective measures, including halting construction activities in situations where further construction work would damage historic resources, or taking other measures to protect the building. The historic preservation officer shall establish the frequency of monitoring and reporting prior to the issuance of a demolition, grading, or building permit.

d) The project sponsor shall respond to any claims of damage by inspecting the affected property promptly, but in no case more than five working days after the claim was filed and received by the project sponsor's designated representative. Any new cracks or other changes in the structures,

including roof damage, shall be compared to pre-construction conditions and a determination shall be made as to whether the proposed project could have caused the damage. In the event that the project is demonstrated to have caused any damage, such damage shall be repaired to the pre-existing condition, provided the property owner approves of such.

e) The historic preservation architect shall establish a training program for construction workers involved in the project that emphasizes the importance of protecting historic resources. The program shall include information on recognizing historic materials and directions on how to exercise care when working around and operating equipment near historic structures, including storage of materials away from historic buildings. It shall also include information on means to reduce vibrations from demolition and construction, and preventing other damage, and monitoring and reporting any potential problems that could affect the historic resources in the area. A provision for establishing this training program shall be included in the construction contract, and the contract provisions shall be reviewed and approved by the City of Oakland.

COA CULT-5 (same as COA GEO-3): Geotechnical Report. Required as part of the submittal of a tentative Tract Map or tentative Parcel Map.

- A site-specific, design level, landslide or liquefaction geotechnical investigation for each construction site within the project area shall be required as part if this project and submitted for review and approval to the Building Services Division. 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.
  - 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.
  - 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.
- Tentative Tract or Parcel Map approvals shall require, but not be limited to approval of the Geotechnical Report.

To further implement this Standard Condition and as recommended by the Preliminary Geotechnical Report, the applicant shall:

- Install underground cutoff walls to minimize the draw down of the water table away from the site.
- Verify groundwater elevation and seasonal fluctuation of groundwater table.
- Evaluate liquefaction potential on the proposed building.
- Evaluate settlement of proposed building foundation.
- Design mat foundation to resist hydrostatic lift.
- Design basement walls with water stops at construction joints and designed to withstand earth and hydrostatic pressures. Basement walls should be drained above the groundwater table.
- Evaluate passive dewatering system before use.
- Evaluate shoring system during excavation.

Other standard conditions would also serve to reduce impacts to cultural resources, including:

COA UTIL-1: Required Landscape Plan for New Construction and Certain Additions to Residential Facilities.

b. Methods. Background research for this cultural resources analysis included an evaluation of historical resources in the project area prepared by Carey & Co, which is provided in Appendix F. The report was prepared by conducting a reconnaissance survey of the project site to evaluate existing conditions, historical features, and architectural significance of the site and surrounding buildings as well as a literature review. Background research for the Archaeological and Paleontological Study, included in Appendix G, included conducting: a records search; literature review; site visit; and a consultation with the Native American Heritage Commission and historical organizations in 2006. The research was conducted to identify cultural resources within or immediately adjacent to the project area and to prepare archeological, ethnographic, and historical setting of the project area.

(1) Records Searches. LSA conducted a records search (#05-1190) of the project area and a ¼ mile radius was conducted on June 7, 2006, at the Northwest Information Center (NWIC) of the California Historical Resources Information System, Sonoma State University, Rohnert Park, California. The NWIC, an affiliate of the State of California Office of Historic Preservation, is the official state repository of cultural and archaeological resource records and reports for Alameda County.

LSA reviewed the following cultural resource inventories:

- *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); and
- *Directory of Properties in the Historic Property Data File* (California Office of Historic Preservation, April 6, 2006). 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.

(2) Literature Review. Carey & Co. researched the history of the project area using the Oakland Cultural Heritage Survey (OCHS), Sanborn Fire Insurance Maps, Oakland City Directories, historical newspapers, photographs, and other primary sources available at libraries or through the internet. Carey & Co. also reviewed the Statement of Significance prepared by Finola Reid.[5] All documents reviewed and referenced by Carey & Co. are listed in the technical report found in Appendix F.

(3) Field Survey. Carey & Co. conducted a site visit on April 21, 2006. During this site visit, the existing conditions, historic features, and architectural significance of the site and surrounding buildings were evaluated. In particular Carey & Co. staff verified that the recognized historical resources in or near the project site have retained sufficient integrity to maintain their recognized status. On July 14, 2006, an LSA archaeologist conducted a pedestrian field survey of the project area. The survey covered the entire project area of approximately 0.75 acres of landscaped garden.

(4) Consultation. On July 13, 2006, LSA faxed a letter with maps depicting the project area to the Native American Heritage Commission (NAHC) in Sacramento requesting a review of their sacred lands file for any Native American cultural resources that might be affected by the proposed project. Ms. Debbie Pilas-Treadway, NAHC Environmental Specialist III, responded in a faxed letter dated July 17, 2006, that the sacred lands file showed no known Native American sites "in the immediate project area".

On July 13, 2006, LSA sent a letter and maps depicting the project area to the Alameda County Historical Society, asking if they had any information or concerns about the project area. Ed Clausen, historical society president, responded on July 14, 2006. He stated that he and the historical society were aware of the project plans and would like the gates with the initials A.S. (for August Schilling) to be maintained as part of the new building plan or be offered to an appropriate agency or museum. The Historical Society does not have a facility that could accept the gates. The Society also requested that the garden be maintained to whatever extent possible.

A descendant of the Schillings has contacted the project applicant and requested that they be allowed to take custody of the gate.[6]

c. Prehistory and Ethnography. California was probably settled by native Californians between 12,000 and 6,000 years ago. Penutian peoples migrated into central California around 4,500 year ago and were firmly settled around San Francisco Bay by 1,500 years ago. The descendants of the native groups who lived between the Carquinez Strait and the Monterey area prefer to be called Ohlone although they are often referred to by the name of their linguistic group, Costanoan. Oakland is located within the territory of the Huchiun who spoke Chochenyo, one of eight Costanoan languages.

[5] Statement of Significance Finola Reid Plants and Gardens. 2007.

[6] Birchall, Ian, 2009. Principal, AIA, RIBA, ian birchall + associates. Personal Correspondence with LSA Associates, Inc. November 27.

Huchiun territory extended from Wildcat and San Pablo Creeks in the city of Richmond south to Mission San Jose.

Intensive Hispanic exploration of the Bay Area began in the late eighteenth century. Ohlone culture was radically transformed when European settlers moved into northern California. These settlers established the mission system and exposed the Ohlone to diseases to which they had no immunity. Mission San Francisco de Asís (Mission Dolores) was founded in 1776. Situated directly across the Bay from what is today the city of Oakland, the Mission drew native people from the entire Bay area. Mission records indicate that the Huchiun moved to Mission Dolores from 1787 until 1805. Following the dissolving of the mission system in 1834, native people in the Bay Area moved to ranchos, where they worked as manual laborers. By 1852 Oakland was incorporated and was officially recognized by the State in 1854.

d. Historical Setting. In 1869, the 160-acre Lake Merritt, located immediately west of the project area, was recognized by the state as a waterfowl sanctuary. Lake Merritt, named after Samuel B. Merritt, was created after San Antonio Slough was dammed. Four major creeks flowed from the hills into the slough, and all waterways dumped the city's sewage in this central body of water. At first, the lake produced a rank odor, because the dam reduced the strength of the tide and the City's sewage could no longer flow from the slough in to the estuary and beyond. Once the City solved the sewage problem, Lake Merritt became a prime site for real estate and recreation. Tensions between public and private interests in the lake soon arose, leading to contentious and decades-long debates about public access versus private property rights. Mansions sprang up along the shores of Lake Merritt, resulting in one of the most exclusive residential enclaves in the San Francisco Bay Area. City residents could rent skiffs, and dinghies from lakeside homeowners. Only during the administration of Mayor Frank Mott, between 1905 and 1915, did ideas about creating a public park at the lake become reality. Up until then, Oakland residents depended on the generosity of private homeowners to gain access to their prized lake and its surrounding shoreline. By the early twentieth century, August Schilling's grounds had come to be the most famous and popular of the lakeside gardens.

According to the OCHS, the project site and surrounding properties are part of two Areas of Primary Importance (API). The 244 Lakeside Drive Building Group API includes the 244 Lakeside Drive Apartments, the Schilling garage, and the Schilling Garden. The Lake Merritt API includes Lake Merritt, Lakeside Park, and all parcels immediately adjacent thereto. These APIs are further described below.

Lake Merritt API. According to the OCHS, the Lake Merritt API includes "Lake Merritt itself, the parklands on its shores, the buildings within those parks, and all buildings fronting on the lake which were constructed over 50 years ago and are now reasonably intact. Some newer structures, compatible with the older ones, are also within district boundaries." As of 1986, when the API was established, the API included approximately 85 buildings, structures, objects, and cultural landscapes. Additional structures have since surpassed 50 years of age and/or may have gained historical significance in their own right and may now also be considered contributors.[7]

[7] Oakland Cultural Heritage Resources Survey, 1986. "Lake Merritt District (Portion within Adams Point Neighborhood), Historic Resource Inventory, DPR 523, June 30.

244 Lakeside Drive Building Group API. The 244 Lakeside Drive Building Group API was defined in 1984 as part of the OCHS, and includes three contributors: the 244 Lakeside Drive Apartments, the Schilling Garage and the Schilling Garden. The 244 Lakeside Drive Building Group API lies entirely within the larger Lake Merritt API, and its contributors are also contributors to the Lake Merritt API.

The following describes the history of some of the historically important features in and around the project site.

(1) Schilling Garden. In 1889, a two-story house was built within the project area and replaced shortly thereafter by August Schilling (of Schilling spices fame). According to the OCHS, the August Schilling estate was "one of the grand nineteenth century residences that characterized the Lakeside neighborhood prior to it twentieth-century development as an apartment district." The Schilling house stood on the east end of the estate facing Jackson Street, on the site currently occupied by the Regillus apartment building. Lakeside Drive had not yet been constructed, and the north side of the Schilling property directly bordered Lake Merritt. Sanborn maps indicate that Schilling modified the house over the years, but he spent more energy on the vast garden surrounding the home. Schilling loved plants, particularly exotic ones, and was known to have designed gardens associated with his properties in San Francisco.[8] In all likelihood, Schilling designed the garden that still occupies the project site. The garden seems to have reached a new level of local acclaim after 1900 when Schilling bought several acres of land immediately to the west and expanded the garden. The current garden is approximately 188 feet by 185 feet, roughly one-third the size of the original garden. No records enumerate the planting, or describe exactly the plan of the site, but historic photographs and postcards show an abundance of palm trees, ferns, and (then) exotic plants, including willow trees, rose bushes, eucalyptus trees, ferns, and redwoods. The garden also included an artificial cave, fountains, benches, a playhouse, and other lawn furniture.

The most distinctive feature of the post-1900 expansion was the construction of a concrete arbor, called the "hanging garden," which was designed to imitate bare trees. While vines soon covered the exterior and created a canopy overhead, the interior of the arbor housed electrical wiring for outdoor lighting. Rustic arbors, built of natural or artificial tree trunks and branches, and similar types of romantically primitive or picturesque structures, were highly characteristic of late nineteenth-century landscaped design, reflecting the influence of Alexander Jackson Downing and others.

Schilling altered the arbor to accommodate other changes in the garden. Originally, the arbor formed a u-shape; it ran from the center of the property, next to the servant's house, southwest to 19th Street, and then ran northwest, parallel to 19th Street, before turning northeast for a short distance, not far from the northwest property line. By 1910, only the portion running parallel to 19th Street (the portion that survives today) remained standing. That year, Schilling hired Bluxome and Co. to construct a $10,000 Italianate, reinforced concrete garage that required access from 19th Street. The driveway to the garage thus replaced the long northeast-to-southeast portion of the arbor.

The Schilling estate became an Oakland institution. Influential residents of San Francisco and the East Bay congregated there, and society pages frequently detailed parties that the Schillings hosted

[8] The only known Shilling Garden to have existed in San Francisco was located in the courtyard of the Schilling factory at Second and Folsom Streets. This building and its garden have been demolished.

for up to 500 people at their home and garden. Reporters consistently described the garden as "fascinating" and "among the most picturesque on this side of the bay." Like other private residences along Lake Merritt, the Schilling estate appears to have served the public as well. Two boat houses provided moorings for recreational sailors. The garden also garnered international attention; a celebrated Dutch artist of the period, Mynheer Antoon Molkenboer, traveled to San Francisco to document in oils the grim aftermath of the earthquake and fires on 1906. He made a special trip to Oakland to create a painting of the Schilling Garden, which, along with the San Francisco painting, was exhibited at a New York gallery on Fifth Avenue. People who did not visit the grounds directly could purchase any of several postcards that depicted the Schilling Garden, or "Schilling Park," rendering the garden a cheap and popular form of public recreation.

August Schilling sold his Lake Merritt estate around 1921. Over the next five years, two luxury apartment buildings, the Regillus (1922) and 244 Lakeside Drive (1924 to 1925), replaced the Victorian mansion. Developers incorporated the remaining garden into the building designs and referred to them as key selling points.

(2) Regillus Apartment Building. Architect Willis Lowe (1882-1969) designed the Regillus apartment building for contractor and real estate developer Percival A. Palmer (1885-1970) in 1921. Lowe was a graduate of the University of California Berkeley and developed a reputation as "one of the foremost San Francisco architects" in the twenty-five years leading up to plans for the Regillus. According to the OCHS, the Regillus "is a good example of its style but is most distinguished by its siting, landscaping, and prominence on Lake Merritt…Like its neighbor, 244 Lakeside Drive, the Regillus exemplifies the great era of apartment buildings for the rich of the 1920s and was probably the first of these structures to have been built in Oakland, particularly on the shores of Lake Merritt." Referred to a "the finest in the West" and considered by some to be the best address in Oakland, the Regillus is the residential counterpart of some of the City's most prominent skyscrapers of the same era in its clientele and its impact on the image and character of the City.

Initial reports about the Regillus noted specifically that "the gardens around the home will be maintained." The *Oakland Post* later published a three-quarter-page spread on the Regillus in 1922, just before it opened. In addition to touting the apartment building as a tribute to Oakland's growth, the article emphasized the structure and site's link to the Schilling family and estate. Designed to house wealthy and prominent business and political leaders, the Regillus would carry on the tradition of the Schilling estate as "the gathering place for the leading men and women of the bay district" and "the social center of the city." Tenants would further enjoy the "enchant[ing]" Schilling's Garden, with its palms, grottoes, plants, and flowers. A new iron fence enclosed the garden and provided privacy for the residents, underscoring indirectly the semi-public access to the garden in previous decades.

(3) 244 Lakeside Drive Apartment Building. Two years after the Regillus opened, plans commenced to build a $500,000, 12-story, 20-unit luxury apartment building on the northern quarter of the former Schilling estate. In 1925, Maury Diggs (1880-1953) designed and served as structural engineer for the 244 Lakeside Drive apartment building. Like the Regillus, newspaper reports and promotional literature touted 244 Lakeside Drive as a tribute to Oakland's progress. And again, this literature emphasized the Schilling Garden as a unique selling point. According to the OCHS, the Schilling estate sold the southwestern third of the garden to the Lakeside apartment owners as a separate parcel with the condition that the "hanging gardens" remain intact. One writer wrote, "The

beautiful Schilling grounds in the rear have been purchased and remain intact…and the acquisition of these grounds excludes any possibility of future construction which could cut off any part of the view." Three years later, reporters continued to note that the lawns, gardens, and City-owned open space property that surrounded the building lent it both physical beauty and good investment value.

One of the original residents of 244 Lakeside Drive was the Warren A. Bechtel family. William A. Bechtel founded Bechtel Company (later Bechtel Corporation and Bechtel Group) in 1925 and soon developed one of the best known contracting and engineering firms in the west for building irrigation ditches, rail lines, and natural gas and oil pipelines. Stephen D. Bechtel (1900-1989) led the Bechtel Group from 1935 to 1960. Stephen D. Bechtel's wife, Laura Peart Bechtel, and children lived at 244 Lakeside Drive. They became so identified with the building that locals referred to it as the Bechtel building. By the 1950s, the Bechtel name has also become associated with the former Schilling Garden. The reputation of the Bechtel garden continued for decades. In 1975, when the neighboring Regillus apartment building was undergoing renovations, a reporter for the *Oakland Tribune* noted as a selling point that the "apartments on the west side look out upon Stephen Bechtel's famed gardens."

(4) Snow Park. In 1903, Francis Cutting, a cannery mogul, built a large Richardsonian bungalow on the parcel located to the northeast of the Schilling estate, between 19th Street and Lake Merritt. Three other structures stood on the northeast of Cutting's estate and abutted Harrison Street; two of them likely dated to the 1880s, while Cutting probably built the third for his son at the same time that he built his own house. With the eastern border abutting Lake Merritt, Cutting's house stood in a large, park-like setting. Cutting died in 1913 and subsequent ownership of the site remains unclear until 1922.

In 1922, big game hunter Henry Snow donated his collection of taxidermy animals to the City of Oakland. The City intended to build a permanent structure to house the animals and decided to use the former Cutting residence as a temporary site for them. The permanent museum never materialized, and as a result, the Cutting residence became the official site of the Snow Museum. Elephants, bears, leopards, lions, birds, and snakes filled the rooms of the former house. A small zoo also occupied the grounds for a time as well. Of the three houses on Harrison Street, only the one built for Francis Cutting remained standing in 1951, at which time the Board of Education occupied it, and virtually all of the outbuildings on the Cutting estate had disappeared. While the park-like setting of the site grew in size, the remaining Schilling Garden to the south of 244 Lakeside Drive remained relatively unchanged.
Development interests became attracted to the Snow Museum site during the 1950s. Sheraton Hotels were nearly successful in leasing the land and obtaining permission to build a towering hotel in 1959. Residents protested this idea and the project ultimately failed. Instead, the City designated the area for permanent public use. Snow Museum closed in 1967 and the City demolished the structure in 1970. Since then, Snow Park has provided open green space for Oakland residents across the western shores of Lake Merritt.

(5) Lake Merritt. The marshy shores of San Antonio Slough and future Lake Merritt attracted large numbers of migratory water fowl for whom the area served as a vital winter habitat. In an effort to protect the birds from the frequent gunfire of local hunters, Oakland's mayor, Dr. Samuel Merritt, proposed to turn the new lake into a wildlife refuge. In 1870 the local legislature passed the Lake Merritt Wild Duck Refuge, making it the first legal wildlife refuge in the United States. This new status rendered hunting birds for game illegal and limited fishing to a hook-and-line recreational

activity. The Lake Merritt Wild Duck Refuge, which comprises the entire lake, was designated a National Historic Landmark (NHL) in 1963 and was added to the National Register of Historic Places in 1966.[9]

e. Existing Conditions. The existing cultural resources conditions for this project are described below.

(1) Records Search Results. Table IV.H-2 shows the historic resources on or immediately adjacent to the project site that are listed in the City of Oakland's Local Register of Historic Resources (OCHS) and the California Office of Historic Preservation's (OHP) *Directory of Properties in the Historic Property Data File for Alameda County*. Six of the seven resources are on or appear to be eligible for the California Register of Historic Resources (Historic Register). According to the OCHS, several of these resources are part of two Areas of Primary Importance (API). The 244 Lakeside Drive Building Group API includes the 244 Lakeside Drive Apartments, the Schilling garage, and the Schilling Garden. The Lake Merritt API includes Lake Merritt, Lakeside Park, and all parcels immediately adjacent thereto.

Table IV.H-2: Historic Resources

Resource	Address	OHP* Rating	OCHS Rating	CEQA Historical Resource?
Schilling Garden	244 Lakeside Drive	3D	A1+	Yes
Schilling House Garage	244 Lakeside Drive	3D	B1+	Yes
Regillus Apartments	200 Lakeside Drive	3B	A1+	Yes
Lakeside Drive Apartments	244 Lakeside Drive	3B	A1+	Yes
Snow Park	19th Street/Harrison Street/20th Street	N/A	C1+	Yes
Lake Merritt API**	Lake Merritt	3S	API	Yes
244 Lakeside Drive Building Group	244 Lakeside Drive	3S	API	Yes

Notes: * 3 = Appears Eligible
** The Lake itself is a National Historic Landmark (Lake Merritt Wild Duck Refuge), is listed on the National Register of Historic Places, and is a City of Oakland Design Landmark.
Source: Carey & Co., 2009, City of Oakland, 2011.

The Regillus and Lakeside Drive apartment buildings are resources rated "3B" by OHP. These 3B resources appear eligible for the National Register both individually and as a contributor to a National Register-eligible district through survey evaluation. The Schilling Garden and Schilling house garage are rated "3D" by the OHP. These resources appear to be eligible for the National Register as a contributor to a National Register-eligible district through survey evaluation. As described in greater detail below, these resources are thus each historical resources for purposes of CEQA. The OCHS rates the Schilling Garden as an "A1+" resource. A resource given an "A" rating is of "highest importance," representing "an outstanding architectural example or extreme historical importance." Oakland has a total of about 150 such properties. A resource given a "1" rating is an API or National Register-quality district, while the "+" indicates that the building is a contributor to the API in which it is located. In this case, the API is the 244 Lakeside Drive Building Group. Thus, the Schilling

[9] McKithan, Cecil, 2010. "Lake Merritt Wild Duck Refuge NRHP Inventory – Nomination Form" October 18. 1977. Website: tps.cr.nps.gov/nhl/detail.cfm?ResourceId=112&ResourceType=Site, accessed January 5.

Garden's A1+ rating indicates that it is a resource of highest importance that is also a contributing resource to an area of primary importance.

Based on OCHS evaluation sheets, the Regillus apartments and garage (which were evaluated together) and the Lakeside Drive apartments were also given OCHS rating of A1+. A resource given a "B" rating is of "major importance," representing an "especially fine architectural example [and/or] major historical importance." Thus the Schilling Garage's B1+ rating indicates that it is a resource of major importance that is also a contributing resource to an area of primary importance. The Regillus apartments and garage are contributors to the Lake Merritt API, while the Schilling Garage, Schilling Garden, and Lakeside Drive Apartments are contributors to the Lake Merritt API and the 244 Lakeside Drive Building Group API.

The fifth historical resource in the vicinity of the project site, Snow Park, was evaluated in the 1980s as part of the Oakland Cultural Heritage Survey. It was given a rating of C1+ based on the park's visual character, the presence of several old trees, and the park's historic association with the former house/museum. A resource given a "C" rating is of "secondary importance," representing a "superior or visually important example." C-rated resources, of which there are approximately ten thousand in Oakland, "warrant limited recognition."[10] Snow Park's C1+ rating indicates that it is a resource of secondary importance that is a contributing resource to an area of primary importance, in this case the Lake Merritt API. Thus, while it has not been deemed eligible for the National or California Registers, it is listed in Oakland's Local Register of Historical Resources, and must be considered a historic resource for purposes of CEQA due to its identification in the Lake Merritt API and its listing in Oakland's Local Register of Historical Resources.

(2) Historical Architectural Resources. The project area includes four resources that are considered historical resources for the purposes of CEQA. This subsection describes current conditions of these resources, along with a description of the significance of Snow Park, and provides a statement of significance. The descriptions below of the layout of historical significance of the Schilling Garden and its surroundings are drawn from the State Department of Parks and Recreation (DPR) forms completed as part of the OCHS, and updated by Carey & Co. as needed.

Schilling Garden. Several elements of the original garden survive, including the concrete arbor, a large holly tree, one of the now several redwood trees, a camperdown elm, tree ferns, and paired wrought iron gates with the initials "A.S." at the west end of the 19th Street frontage. The gates are now mostly covered with chain link and wood slates. According to the OCHS, the high ivy-covered rubble stone embankment along the 19th Street frontage east of the gates is also probably part of the original Schilling Garden. As summarized in the OCHS, the surviving elements of the Schilling Garden are significant as the last reminder of one of nineteenth century Oakland's best-known showplaces. It is also illustrative of some of the social attitudes particular to its era, and is a type of garden with few surviving local examples.

The rustic style arbor section is especially significant as an unusual turn-of-the-century garden element constructed in concrete. The historic record for the Schilling Garden, consisting of Sanborn

[10] Community and Economic Development Agency (CEDA), "Summary of Historical and Architectural Rating System," Oakland, California. Website: www.oaklandnet.com/government/ceda/revised/planningzoning/HistoricPreservation/ HP-overviewH.html, accessed April 3, 2008.

Maps, photographs, and postcards, indicates that the extant arbor existed by 1903 and that it survived major changes that August Schilling commissioned in or around 1910. Construction of the two-story garage accessed from 19th Street and an artificial cave at the northwest corner of the garden required partial demolition of the arbor. Character-defining features of the garden include the concrete arbor with electrical light fitting and overhead ironwork and wisteria, the wrought iron gate with the Schilling "A.S.," the historical retaining wall, redwood trees, and variegated flora.

Schilling Garage. On the east side of 244 Lakeside Drive is a two-story, reinforced concrete garage with stucco cladding and Beaux Arts styling. The garage, which dates to 1910, was originally part of the Schilling estate. The garage is an approximately rectangular building with a slightly curved west side. Entrance to the lower level is on the main north elevation from a driveway along the main building's east side. Because of the sloped terrain, the upper level can be entered directly from the south side.

According to the OCHS, the upper level was originally used for carriages and had a revolving floor for turning the carriages around and rehitching the horses. The main north elevation is designed as an enframed pavilion in a two-part vertical composition dominated in the upper level by a large pair of slightly recessed French doors framed by Ionic columns. An entablature extends around the top below a classical balustrade. A belt cornice divides the two levels. The lower level has paired sliding wood doors, each with a large diagonally braced lower panel and two small glazed upper panels. Wall surfaces are scored to imitate a common wall with the adjacent Regillus apartments garage.

The garage is significant for its associations with the Schilling complex, as an early example of reinforced concrete construction, and in its Beaux Arts influenced styling.

Regillus Apartment Building. The Regillus is a freestanding, eight-story (plus basement), reinforced concrete apartment building situated on a sloped, landscaped site. The basement elevations are exposed on the Jackson Street and Lakeside Drive sides. The building is visible from a wide area across Lake Merritt. The building has cast cement ornamental details, a stucco finish, and a sloped tiled roof. The entrance marquee and sconces are in iron and glass. The four elevations are fully treated in a three-part vertical composition with restricted vase and ornamental top floor level set off by encircling bracketed balconies. Smaller balconies within the shaft of one or two bay's breadth enliven and balance the facades. Ornamentation is broadly Renaissance/Baroque in derivation. Notable features include the one-story pavilion entry with its iron and glass marquee (reminiscent of turn-of-the-century French apartment houses) below the apartment's name and decorative detail. The Lakeside elevation has advancing end sections corresponding with the U-plan wings and a first floor terrace with Classical balustrade extending across the center section over the exposed basement level. A handsome branching stairway extending from the center of the terrace leads down to a carefully maintained rear garden, dominated by several large conifers.

On the west side of the garden, at the northwest corner of the property, is a two-story stucco reinforced concrete garage with an entrance on the second level from 19th Street. Surfaces are gray tinted stucco, scored to imitate stone ashlar. The facades are divided into undifferentiated bays consisting of triple windows with small upper lights set within slightly recessed wall sections. A simple entablature and plain parapet extend along the top. The garage is bordered on the Lakeside Drive side by a row of mature Lombardy poplars and has a common wall with the former Schilling Garage that is now part of the 244 Lakeside Drive property.

The building continues to operate as one of Oakland's finest, large, multiple-unit residences and retains much of its original opulence. According to the OCHS, the Regillus' "large-scale, distinctive monumental design and prominent Lake Merritt location make it an especially familiar, visual landmark in Oakland, closely identified with the image of Lake Merritt." As previously noted, previous surveys have considered that the Regillus apartment building is eligible for the National Register both as an individual structure and as an element of a district.

244 Lakeside Drive Apartment Building. The 244 Lakeside Drive apartment building is a reinforced concrete structure of H-shaped plan open to the north and south. The design is in a somewhat unusual two part vertical composition with the shaft rising directly from the understated ground floor, which is treated as a high basement. A highly decorated twelfth-floor level crowns the high shaft. An additional thirteenth floor extends along the stem of the "H," topped with a center elevator tower. The main entrance is set in a slightly advancing second-floor pavilion filling the base of the north lightcourt, approached by a double staircase leading to a tile-floored terrace. Front landscaping includes a semi-circular fountain against the stairwalls. The stucco walls are painted a uniform cream color and are embellished with cast cement ornament concentrated around the first floor entrance pavilion and at the twelfth and thirteenth floors. Entry area railings, balustrades, light poles, marquee, door frame, and window grills are of wrought iron. The ornamentation is Spanish Renaissance/Baroque in style and includes twisted column orders with highly decorative friezes, decorative panels, cartouches, human figures, and animal heads.

The 244 Lakeside Drive apartment building exemplifies both the great era of luxury apartment buildings of the 1920s and the prominent garden siting of nineteenth-century upper class homes. Its large scale, distinctive design and prominent Lake Merritt location make the building an especially familiar visual landmark in Oakland. As described in the State Department of Parks and Recreation form for 244 Lakeside Drive that was completed as part of OCHS, the historic setting of the 244 Lakeside and Regillus apartment buildings is a key part of its significance:

> Together with its neighbor, the Regillus, it dominates the middle portion of Lake Merritt's west shore, and is closely identified with the image of the Lake itself. The 19th Street garden frontage and rear elevation terminate the view along Alice Street from the south and, with the tall trees, provide an attractive focal point for viewing the handsome group of early twentieth-century apartment buildings along Alice Street between 14th and 17th Streets. The landscaping also provides a visual addition to Snow Park to the west.

According to the OCHS, the 244 Lakeside Drive apartment building is "one of Oakland's best examples of an early twentieth-century high-rise apartment building in its use of materials and quality of detail." It is also significant as the work of an important early twentieth-century architect, and as a residence during the 1920s of some of Oakland's most distinguished citizens, including *Oakland Tribune* publisher and political magnate Joseph R. Knowland, and William A. and Stephen D. Bechtel. In assessing the building's significance, the OCHS concludes that "most important, however, are its siting, landscaping and city wide familiarity by virtue of its prominent Lake Merritt location. As previously noted, previous surveys have determined that the 244 Lakeside apartment building is eligible for the National Register both as an individual structure and an element of a district.

Snow Park. Snow Park was evaluated in the 1980s as part of the OCHS, and received a rating of "C1+" based on the park's visual character, the presence of several old trees, and the park's

historic association with the former house/museum. A resource given a "C" rating is of "secondary importance," representing a "superior or visually important example, or very early (pre-1906)." C-rated resources "warrant limited recognition." While given a "C" rating, Snow Park was found to be a contributor to the Lake Merritt API. As a result, it is a resource on the City of Oakland's Local Register of Historical Resources and thus should also be considered a historical resource for purposes of environmental review under CEQA, based on Carey & Co.'s site reconnaissance and archival research.

Unlike the Schilling Garden, Snow Park was never an elaborately landscaped public space. Instead, the park was a fairly simple and open grassy area surrounding the Cutting Residence/Snow Museum, and was never a destination or otherwise significant in its own right. Snow Park has only existed in its current manifestation as a public park since the Museum was torn down in 1970. In further contrast to the Schilling Garden, traces of Snow Park's association with historic events or figures are long gone. As a result, Snow Park does not appear to be individually eligible for consideration as a historic resource at the State or federal level. However, as a contributor to the Lake Merritt API, it appears eligible for the State and National Registers. It is also considered a historic resource at the local level due to its identification in the Lake Merritt API and its listing in Oakland's Local Register of Historical Resources.

(3) Prehistoric and Historical Archaeological Resources and Sensitivity. A review of databases did not indicate the presence of recorded prehistoric or historical archaeological deposits or ethnographic sites in or immediately adjacent to the project area. While no archaeological resources were identified in the project area, research does, however, indicate that the project area is sensitive for prehistoric and historic archaeological resources, as indicated by the distribution of prehistoric sites near estuarine environments, which would have provided abundant marine and terrestrial animal and plant resources for Oakland's native inhabitants. Prehistoric archaeological resources are recorded near the periphery of Lake Merritt (e.g., CA-ALA-5 and CA-ALA-22) and the general area is considered to be one of "extreme" archaeological sensitivity. Historical features, consisting of a two-story dwelling and "artificial cave", are depicted on Sanborn (1889, 1911, 1950) maps. The two-story dwelling was razed in the 1890s for August Schilling's garden, and an artificial cave was in the project area from at least 1911 until the early 1950s. While neither of these features is currently present in the project area, associated subsurface archaeological deposits may be present. Such deposits may include building foundations; hollow filled features (e.g., privies and artificial caves); and trash deposits.

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. Background research consisted of a fossil locality search and a literature review. This research was done to identify geologic units, paleontological studies, fossil localities (i.e., a location at which paleontological resources have been documented), and the types of fossils that may be within or adjacent to the project area.

(1) Fossil Locality Search. A fossil locality search was conducted online on June 6th, 2006, using the Berkeley Natural History Museums (BNHM) online database, specifically the data from the University of California Museum of Paleontology (UCMP), Berkeley.

The locality search identified 14 fossil localities within five miles of the project area. No fossils were identified within or adjacent to the project area. The fossil localities produced 60 significant vertebrate fossils from Pleistocene alluvium and the Merritt Sands Formation which are the same geological formations that underlie the project area.

(2) Literature Review. Relevant paleontological and geological literature to the project area and its vicinity was reviewed. This review identified the Pleistocene alluvium and the Pleistocene Merritt Sands within and adjacent to the project area, which are known to contain paleontological resources. The paleontological and geological literature reviewed is listed in the Archeological and Paleontological Study included in Appendix G.

b. Paleontological Setting. The project area is situated on Holocene-aged (present to 10,000 years old) alluvial deposits. This alluvium is not sensitive for paleontological resources. Underlying the Holocene alluvium, but 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 lies on coastal plains near the eastern shore of San Francisco Bay. The sediments that underlie the project area are Quaternary (recent-2 million years ago) alluvial deposits. The Hayward Fault runs northwest to southeast a few miles east of the project area. East of this fault, Mesozoic rocks of the Franciscan Complex rise up to form the Oakland Hills. Quaternary alluvium eroded from these hills formed the coastal plains along eastern San Francisco Bay. From the base of the Oakland Hills, sediments are progressively younger towards the bay, and much of the earth above sea level along the bay margin consists of recent artificial fill. Deposits within the project area consist of the following geological units, described in stratigraphic sequence from youngest to oldest:

Artificial Fill. The project area lies on Artificial Fill, which in turn overlie the Pleistocene alluvium and Merritt Sands in the East Bay. Large amounts of artificial fill have been brought to the East Bay margins to expand the amount of developable land above sea level. This fill, which is mostly unconsolidated earth, is highly unlikely to contain significant fossil resources. The thickness of this fill is undetermined at the project area but consists most likely of a thin layer easily penetrated by project ground disturbing construction.

Younger Quaternary Alluvium. This unit has not been mapped within the project area but often overlies the Merritt sands and Older Quaternary alluvium in the East Bay. Helley and Graymer (1997) described the alluvium of this age closest to the project area as silty clay to clay basin deposits. Older portions of this alluvium may also be bedded medium-to-fine-grained sand. Though generally not considered paleontologically significant, these alluvial deposits contain vertebrate and invertebrate fossils of extant, modern taxa. These deposits are generally between 0 and 10 feet thick and it is possible that older Pleistocene alluvium and Merritt sands, both of which contain significant fossil resources, may lie directly under local soils, artificial fill, or at the ground surface.

Merritt Sands. These Late Pleistocene aged (10,000-40,000 years ago) eolian, or wind deposited, sands underlie most of downtown Oakland and underlie portions of the project area. The deposits are generally loose, well-sorted sands that measure roughly 50 feet thick and display dune morphology. Pleistocene sediments in this region contain the same significant paleontological resources contained in Older Quaternary Alluvium (discussed below).

Older Quaternary Alluvium. Underlying the Merritt Sands and younger Quaternary alluvium in the project area are Late Pleistocene (between 10,000 and 70,000 years ago) alluvial sedimentary deposits. Locally, these sediments contain invertebrate and extinct vertebrate fossils, many of which are representative of the Rancholabrean land mammal age. Fossils found in alluvium of this age include, but are not limited to bison, mammoth, ground sloths, saber-toothed cats, dire wolves, cave bears, rodents, birds, reptiles and amphibians.

3. Impacts and Mitigation Measures

This section discusses potential impacts to cultural resources that could result from implementation of the proposed project. The section begins with the significance criteria, which establish the thresholds used to determine whether an impact is significant.[11] The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as appropriate.

Project activities that have the potential to significantly impact cultural and paleontological resources include: (1) soil excavation, dewatering and grading for a below-grade parking facility and building utilities; (2) removal of the existing historic garden; (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/or paleontological resources if it would:

- Cause a substantial adverse change in the significance of a historical resource as defined in *CEQA Guidelines* §15064.5. Specifically, a substantial adverse change includes physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be "materially impaired." The significance of an historical resource is "materially impaired" when a project demolishes or materially alters, in an adverse manner, those physical characteristics of the resource that convey its historical significance **and** that justify its inclusion on, or eligibility for inclusion on an historical resource list (including the California Register of Historical Resources, the National Register of Historical Resources, Local Register, or historical resources survey form (DPR Form 523) with a rating of 1-5);
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to *CEQA Guidelines* §15064.5;

[11] Oakland, City of, 2008. CEQA Thresholds/Criteria of Significance Guidelines, p. 5. May 13.

- 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.

b. Less-Than-Significant Impacts. The following describes the cultural and paleontological less-than-significant impacts.

(1) Archeological Resources. No archeological resources were identified in the project area. However, research indicates that the project is sensitive for prehistoric and historic archeological resources, as indicated by the distribution of prehistoric sites near estuarine environments, since the project site was on the historic Lake Merritt waterfront. These environments would have had abundant marine and terrestrial animal and plant resources for Oakland's native inhabitants. Furthermore, the historic analysis indicates that a grotto previously existed on the project site and it is likely that additional archeological or historic artifacts could be discovered upon excavation of the project site for the parking garage. Implementation of the City's Archeological Resources Standard Condition of Approval (COA CULT-1, and CULT-1a through CULT-1d) for further review, monitoring, and treatment of archeological deposits would reduce the project impacts to a less-than-significant level.

(2) Paleontological Resources. The Merritt Sands and Older Quaternary Alluvium that underlies the project area are sensitive for the occurrence of significant paleontological resources. There is a high possibility that ground disturbing construction in the geological units that underlie the project area could inadvertently damage such resources and result in a significant impact. The City's Standard Paleontological Resources Condition of Approval (COA CULT-3) would ensure that no significant paleontological impacts would result form the proposed project.

(3) 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 (COA CULT-2) for the treatment of human remains would reduce project impacts to a less-than-significant level.

(4) Snow Park. The proposed project would not have an impact on the historic significance of Snow Park, a historic resource at the local level due to its identification in the Lake Merritt API and its listing in Oakland's Local Register of Historical Resources. The proposed project would not alter the park's integrity of setting, given that the park has long been surrounded by large-scale development, including the Kaiser Center at 300 Lakeside Drive and the office building at 1999 Harrison Street.

(5) Impacts on Adjacent Structures from Project Excavation and Dewatering. The proposed project would entail significant excavation and dewatering immediately adjacent to the foundations of the 244 Lakeside Drive Apartments, the Schilling Garage, and the Regillus Apartments and Garage. This excavation has the potential to destabilize the foundations of the adjacent historical resources. As described in Section IV.J. Soils, Geology and Seismicity, the preliminary

geotechnical report[12] concludes that the presence of adjacent buildings and improvements and the effects of dewatering and shoring at the project site on the adjacent existing buildings are geotechnical issues that will influence design and construction of the proposed project. Structural integrity of the soils and subsurface layers supporting the adjacent structures could be affected by the proposed construction activities. A structural failure resulting in collapse of the excavation walls during construction could result in loss of life or injury to construction personnel. Engineering methods to ensure the stability of the subsurface layers supporting the adjacent structures are recommended in the revised preliminary geotechnical report. These conditions and recommended geotechnical precautionary measures of the design-level geotechnical investigation would be incorporated into the project engineering in accordance with the requirements of the City's Geotechnical Report Standard Conditions of Approval,COA CULT-5 (same as GEO-3). Potential impacts from excavation and dewatering would be less than significant.

(6) Lakeside Apartment Historic District. The proposed project is located a block north of this recognized historic district, which is composed of 27 contributing properties including "23 apartments and rooming houses, two large institutional structures, a five level parking garage and a two-story auto service garage with commercial uses, all built between 1907 and 1927-28".[13] Due to its proposed height (over 450 feet), the proposed project would be visible from within the historic district. Although the proposed building would be an imposing structure, this visual impact would not cause the historic district to be materially altered such that it would lose its integrity and its significance as a historic district.

(7) Lake Merritt Wildlife (Wild Duck) Refuge and Park. The Lake Merritt Wildlife Refuge and Park includes Lake Merritt, the nesting islands and the peripheral parklands up to the streets surrounding the lake. Lake Merritt became America's first wildlife refuge in 1870. The Lake Merritt Wildlife Refuge and Park was designated a National Historic Landmark by the Secretary of the Interior on May 23, 1963. The proposed project would be located approximately 180 feet from the Lake Merritt Wildlife Refuge and Park. However, the proposed project would be visible from within the Wildlife Refuge and Park due the height of the building (over 450 feet). Although the proposed building would be an imposing structure, this visual impact would not cause the Lake Merritt Wildlife Refuge and Park to be materially altered as the project is not located in or adjacent to the Wildlife Refuge and Park. The Lake Merritt Wildlife Refuge and Park would not lose it integrity or its significance as a National Historic Landmark.

(8) Lake Merritt City Landmark. The Lake Merritt City Landmark includes the lake itself, the nesting islands, the peripheral parklands up to the streets surrounding the lake, and certain structures such as the McElroy Memorial Fountain, Embarcadero Pergola and Walkway, Edoff Memorial Bandstand, Park and Recreation Offices, Lawn Bowling Clubhouse, Lake Merritt Sailboat House, Rotary Natural Science Center, Lakeside Park Garden Center, Children's Fairyland and the Cameron-Stanford House. These areas became an official City Landmark in July of 1980 (Case File LM79-514). As noted above, the proposed project would be located approximately 180 feet from Lake

[12] Treadwell & Rollo, 2006. Revised Preliminary Geotechnical Recommendations, 244 Lakeside Drive, Oakland, California (Parcel 2), Project Number 4327.01, February 3.

[13] Historic Resources Inventory, 1983. Lakeside Apartment District, City of Oakland Cultural Heritage Survey.

Merritt and while it would be a tall building and noticible from within the Landmark, the project itself would not cause the City Landmark to lose it integrity or its historic significance.

(9) Lake Merritt API. The proposed project is located within the Lake Merritt API, which includes Lake Merritt itself, the parklands on its shores, the buildings within those parks, and all buildings fronting on the lake which were constructed over 50 years ago and are now reasonably intact. Some newer structures, compatible with the older ones, are also within district boundaries. As of 1986, when the API was established, the API included approximately 85 buildings, structures, objects, and cultural landscapes. Due to its proposed height, the proposed project would be visible from within the Lake Merritt API. Although the proposed building would be an imposing structure, this visual impact would not cause the Lake Merritt API to be materially altered such that it would lose its integrity and its significance as an Oakland Area of Primary Importance.or its list on the national Register of Historic Places.

(10) Vibration Impacts. The proposed project would involve construction activities, including excavation for a five-level below-grade parking structure. Construction-related vibration impacts have the potential to cause a substantial adverse change in the significance of the 244 Lakeside Drive Apartments, the Schilling Garage, and the Regillus Apartments and Garage. Each of these recognized historical resources is within 50 feet of the project site, and thus may be susceptible to significant ground vibration and other impacts generated by excavation and construction associated with the proposed project. Implementation of COA CULT-4 would ensure that vibration levels from project construction activities in proximity to adjacent historic resources would be less than significant.

c. Significant Impacts. The following discussion describes the significant impacts to cultural and paleontological resources that would result from implementation of the proposed project.

Impact CULT-1: The proposed project would remove the Schilling Garden, which is considered to be an individual historical resource. (S)

The proposed project would remove the Schilling Garden, but approximately 13,000 square feet of the street level of the parcel would be developed as open space with landscaping. As shown in Figure III-4, Landscape Plan and Schematic Planting Plan, many of the existing plants would be transplanted as part of the Planting Plan, including Japanese Maple trees, Magnolia trees, Tree Ferns, Sweet Gum trees, an Olive tree, Abutilon, Acorus, Azalea, Boxwoods, Camelia, Ceanothus, Flowering Quince, Choisya, Daphney, Iris, Loropetalum, Rhododendron, Rose, and Princes Flower. In addition to the transplanting of these trees and shrubs, new trees and shrubs would be planted, recreating areas of the existing garden. COA UTIL-1 requires the submittal and approval of a landscape plan for the entire site prior to issuance of a building permit.

If feasible, the project applicant would also preserve the arbor for re-use and incorporation in the new landscape design for the site. The arbor is constructed of steel and iron with precast and cast-in-place concrete elements that simulate tree trunks and branches. It is approximately 100 feet long, 20 feet wide and 8 feet high. It is covered in wisteria and roses. The architect for the proposed project has analyzed the potential for moving the existing arbor approximately 150 and has the following observation:

> Relocating the arbor anywhere on the site would require the removal of the all plantings, disassembly of the concrete cladding and steel and iron framework that supports the concrete cladding. Contractors experienced in such work have advised that attempts to remove the plantings and disassemble the arbor could potentially result in extensive damage to the concrete elements, as well as the connections of the steel supporting framework. Such damage, which we have been advised to expect, would require patching of old materials with new – not impossible, but very difficult to do and make the arbor look "whole". The steel and iron sub-frame is anchored to or cast into concrete foundations and, given the visual evidence of rusting, in all likelihood is corroding in many areas not currently visible. Breaking the frame free of the footings and undoing "frozen" connections cannot be pre-determined as being possible. We have also been advised by contractors experienced in such work that the salvaged portions of the arbor would also require climate-controlled storage during the construction of the residential building.[14]

The project applicant shall preserve all of the stones from the existing garden if feasible for re-use and incorporation in the new landscape design for the site.

The project applicant/property owner has committed to provide the gates with the initials A.S. to a descendent of the Schilling family.

Implementation of the following mitigation measure would reduce the significance of the removal of the Schilling Garden, but not to a less-than-significant level. Therefore, even after mitigation, the impact would remain significant and unavoidable.

> Mitigation Measure CULT-1a: Documentation of the Schilling Garden shall be prepared in accordance with the guidelines established for the Historic American Landscapes Survey (HALS). This documentation shall include three components, as well as items in CULT-1b, CULT-1c, and CULT-1d:
>
> 1. Photographs: An architectural photographer with HALS experience shall photograph the Schilling Garden in accordance with HALS' "Guidelines of Photography" (http://www.nps.gov/history/hdp/standards/HALS/HALSPhotographyGuidelines.pdf). If large-format photography is not possible, 35mm photography is acceptable, if the negatives are processed according to HALS standards. Photographs should include documentation of all structures and each of the individual garden areas.
>
> 2. Drawings: A landscape architect shall prepare drawings of the Schilling Garden in accordance with HALS' "Guidelines for Drawings" (http://www.nps.gov/history/hdp/standards/HALS/HALSDrawingsGuidelines.pdf). These drawings shall include a site plan that identifies all landscape features, including identification of all plant materials.
>
> 3. Historical Overview: Using the above site history as a stating point, a historical overview of the Schilling Garden shall be prepared in accordance with HALS'

[14] Birchall, Ian, ian birchall + associates. 2009. Personal Correspondence with LSA Associates, Inc. November 27.

"Guidelines for Historical Reports" (http://www.nps.gov/history/hdp/standards/HALS/HALSHistoryGuidelines.pdf). This overview shall include discussion of the garden's relationship to the 244 Lakeside Drive Apartments, the Schilling garage, and the Regillus apartments and garage.

This documentation shall be prepared by a historic landscape architect prior to initiation of a demolition or grading permit. The documentation shall be reviewed and approved by the OCHS and afterward filed with the Oakland Historical Society, the Oakland History Room of the Main Library in Oakland, and the Bancroft Library at the University of California, Berkeley.

Mitigation Measure CULT-1b**:** The HALS documentation in CULT-1a shall also include a salvage plan that identifies the structural and garden elements, including but not limited to, stones (garden and wall) and plant material that can be salvaged and reused on-site and those elements and materials that can be salvaged but not used on-site. The salvage plan shall include a step-by-step relocation process plan for the arbor prepared by a historic landscape architect. The plan shall be submitted prior to clearance of the garden for review and approval of the Landmarks Preservation Advisory Board.

Furthermore, clearance of the garden shall not commence until all significant historic features or materials have been identified, properly removed, and relocated for temporary storage under the supervision of a historic landscape architect. The project applicant shall implement the approved salvage plan.

Mitigation Measure CULT-1c: The project applicant shall retain a qualified historic preservation architect, or a qualified contractor, with historic preservation experience to investigate the possibility of relocating the arbor. This historic landscape architect consultant shall prepare an assessment report with recommendations for review and approval by the LPAB if the report concludes that the arbor cannot be relocated. The project applicant shall include a reconstruction of the historic arbor in the proposed project's open space design. The arbor's reconstruction would comply with the Secretary of the Interior's Standards for the Treatment of Historic Properties, Standards for Reconstruction. There are six standards for reconstruction:

1. Reconstruction will be used to depict vanished or non-surviving portions of a property when documentary and physical evidence is available to permit accurate reconstruction with minimal conjecture, and such reconstruction is essential to the public understanding of the property.

2. Reconstruction of a landscape, building, structure, or object in its historic location will be preceded by a thorough archeological investigation to identify and evaluate those features and artifacts which are essential to an accurate reconstruction. If such resources must be disturbed, mitigation measures will be undertaken.

3. Reconstruction will include measures to preserve any remaining historic materials, features, and spatial relationships.

4. Reconstruction will be based on the accurate duplication of historic features and elements substantiated by documentary or physical evidence rather than on conjectural

designs or the availability of different features from other historic properties. A reconstructed property will re-create the appearance of the non-surviving historic property in materials, design, color, and texture.

5. Reconstruction will be clearly identified as a contemporary re-creation.

6. Designs that were never executed historically will not be constructed.

The following steps shall be taken by the project applicant to ensure compliance with the Secretary of the Interior's Standards for the Treatment of Historic Properties, Standards for Reconstruction:

1. An assessment report shall be prepared by a historic landscape architect to assess the potential for the reuse and integration of any existing features of the arbor in the reconstruction. An assessment report shall be submitted to the Oakland Landmarks Preservation Advisory Board for review and approval concurrently with Mitigation Measure CULT-1b.

2. The project applicant shall submit reconstruction plans to the Oakland Landmarks Preservation Advisory Board for review and approval.

3. As documentary and physical evidence would exist within the HALS documentation (CULT-1a and 1b) to permit accurate reconstruction, the project applicant shall use such techniques as taking castings of the concrete trunks and branches for use in duplicating the existing features under the supervision and direction of a historic landscape architect or preservation architect.

4. The project applicant shall place a permanent interpretive exhibit at a location available to the public informing the public of the history and importance of August Schilling, the Schilling Garden, the arbor and adjacent apartment buildings. Use of historic photographs, video, text, brochures, and other graphical methods is encouraged. The exhibit shall be prepared by a qualified historic consultant based on a scope of work and reviewed and approved by the Planning and Zoning Division. The proposed plans will be approved by the Landmarks Preservation Advisory Board and installed prior to certification of occupancy.

Mitigation Measure CULT-1d: A retaining wall at the arbor adjacent to a driveway for the Regillus apartment is a historic feature of the Schilling Garden and would be removed by the proposed project. The retaining wall stones shall be included in the salvage plan and the project applicant shall implement the plan in the project's open space design. The existing retaining wall shall be dismantled keeping as many of the stones intact as possible. The stones shall be stored and reused in a wall-type structure, the design of which would be reviewed and approved by the Oakland Landmarks Preservation Advisory Board as part of CULT-1b.

Mitigation Measure CULT-1e. To reduce the significant and unavoidable impact of the loss of the Schilling Garden and the substantial adverse change in the historic significance of 244 Lakeside Drive and the Regillus apartments (described below), the project applicant shall, prior

to issuance of a Certificate of Occupancy, make a monetary contribution to the City which shall exclusively be used for (a) development of an Historic Interpretive and Improvement Program, and (b) an historic resource related program such as the Façade Improvement Program or the Property Relocation Assistance Program, as detailed below.

a. The Historic Interpretive and Improvement Program shall include interpretive materials such as information plaques depicting the history of the 244 Lakeside Drive Building Group API, district identification features and a printed guide to the 244 Lakeside Drive Building Group with educational features. The Program shall be high quality and provide high public visibility. The Program shall be developed by a qualified historic consultant in consultation with the LPAB and historic preservation staff, based on a City-approved scope of work and submitted to the City for review and approval. The proposed Program shall be approved by the Landmarks Preservation Advisory Board and installed prior to issuance of a Certificate of Occupancy.

b. Any remaining funds after implementing the Historic Interpretive and Improvement Program shall be applied towards a historic resource related program include, without limitation, historic landscape preservation projects, rehabilitation within the Lake Merritt API, Façade Improvement Program or the Property Relocation Assistance Program.

Impact CULT-2: Construction of the residential tower would cause a substantial adverse change in the historical significance of adjacent historic structures and the Lakeside Drive Building Group API. (S)

The proposed project would cause a substantial adverse change in the historical significance of the 244 Lakeside Drive Apartments and the Regillus apartments, two recognized historical resources. Specifically, the project would compromise these historical resources' integrity of setting. The proposed project would also cause a substantial adverse change to the 244 Lakeside Drive Building Group API.

At 42 stories and over 450 feet in height, the proposed project would be markedly out of scale with the 244 Lakeside Drive building (12 stories) and the Regillus apartment building (8 stories). The proposed tower, which would be approximately 50 feet from the 244 Lakeside Drive building and 55 feet from the Regillus, would visually overwhelm both of these buildings, compromising their historic status as dominant lakeside landmarks. In addition, by partially standing between the buildings, the proposed tower intervenes in a continuous sequence of historical resources, and disrupts their continuity.

Aspects of the apartment buildings described as significant by the State Department of Parks and Recreation and the OCHS would be compromised by the addition of the proposed tower. More specifically, both the Regillus and 244 Lakeside Drive apartment buildings were built to take advantage of the Schilling Garden. The addition of a large tower and removal of the garden would significantly reduce the integrity of setting for these grand, early twentieth century apartment buildings.

Implementation of the following mitigation measure would reduce the significance of the impact, but not to a less-than-significant level. Therefore, even after mitigation, the impact would remain significant and unavoidable. (SU)

> Mitigation Measure CULT-2: Prior to issuance of a building permit, the permit applicant shall redesign the first 12 floors' façade articulation to be compatible, but differentiated, from the historic resources in the API. Methods that could be utilized to obtain this relationship include, but are not limited to:
>
> - Relating the proportions of divisions of the glass curtain wall frame to the fenestration patterns of the existing historic API buildings;
> - Designing the depth of the glass curtain wall frame elements and their hierarchy (with respect to varying depth of elements) to articulate the curtain wall in a manner that relates to the dominant, secondary and tertiary patterns of the existing historic API building fenestration patterns;
> - Using glass tints, colors, etc., in the curtain wall frame divisions to further reinforce the relationship of hierarchy of patterns of the historic API.
>
> The proposed façade shall be submitted for review and approval by the LPAB. The new façade shall be integral and compatible with the overall building façade design and articulation.
>
> Implementation of Mitigation Measure CULT-1e would also reduce the substantial adverse change in the historic significance of 244 Lakeside Drive and the Regillus apartments; however, this impact would remain significant and unavoidable. (SU)

Impact CULT-3: The proposed project would entail construction activities in close proximity to adjacent historical resources, including the 244 Lakeside Drive Apartments, the Schilling Garage, and the Regillus Apartments and Garage, which could result in impacts to these structures as well as Snow Park. (S)

Excavation for the five levels of below-ground parking and building foundations would extend approximately 60 feet below the existing ground surface and would extend to the south property line and portions of the east and west property lines. The proposed building would be approximately 50 and 25 feet of the 244 Lakeside Drive Apartments and Garage, respectively, and would be 55 feet from the Regillus Apartments. The project applicant has indicated that access to the site from 244 Lakeside Drive has been secured and as much as is possible, construction material delivery and off-haul would be from Lakeside Drive, between Snow Park and the 244 Lakeside Drive Apartments. The area between the garage and apartment building would be used for limited personnel access to and from the site but not for the delivery of construction materials. There would still be a need to have 19th Street available for deliveries of materials and off-haul of excavation.

As noted in the Biological Resource section, delivery of materials from Lakeside Drive, between Snow Park and the 244 Lakeside Drive Apartments would likely require the removal of 14 trees on the 244 Lakeside Drive property.

The crane for project construction would be positioned in the side yard between the proposed building and the Regillus. The crane would not carry materials above either the Lakeside Drive Apartments or the Regillus. As per standard construction procedures, the arm of the crane would have pre-set limiters that would prohibit it from extending materials above adjacent residential structures.

Construction debris and construction materials could fall on the roofs of the adjacent historic structures. The Regillus and 244 Lakeside Drive are set back approximately 56 and 50 feet, respectively, from the proposed tower, so the potential is greatly reduced.

Along with COA CULT-4, implementation of Mitigation Measures CULT-3a and -3b would ensure that construction activities in proximity to adjacent historic resources would be less than significant.

> Mitigation Measure CULT-3a: An 8-foot construction fence (chain-link with slats or plywood) shall be constructed between the 244 Lakeside Drive Apartment building and the path that would be used to move construction materials from staging areas on 244 Lakeside Drive to the project site to provide additional protection to this structure.[15] This path shall be landscaped prior to certification of occupancy per the plan approved by the Planning and Zoning Division.
>
> Mitigation Measure CULT-3b: Periodic inspection of both roofs and the two elevations facing the project shall be conducted by a preservation architect and/or structural engineer so as to observe and, if necessary, interrupt and remedy the deposition of construction materials on the roofs or the marring of the elevation's surfaces by falling debris. (LTS)

d. Cumulative Impacts. Implementation of the Emerald Views project would result in significant unavoidable impacts to the Shilling Garden, the 244 Lakeside Drive building and the Regillus apartment building. In addition to the proposed project, there are several reasonably foreseeable projects within the project area (generally defined to be a five block radius from the project site), some of which could combine with the impacts of the Emerald Views project and result in significant cumulative impacts to historic resources.

(1) Cumulative Impacts to Historic Resources in the Immediate Project Vicinity. Taken collectively, the reasonably foreseeable projects, such as the Kaiser Center and those along Broadway and Alice Streets, contribute to the on-going demolition or alteration of historic resources within the project vicinity. These projects, including the Emerald Views project, could affect individual historic resources through their demolition or alteration of historical setting; however, these projects' affected resources include a broad range of building types and would, therefore, not have a clear, cumulatively considerable impact on an individual type of historic building.

The proposed project would have a significant impact on the Schilling Garden. Future projects in the project vicinity that could impact gardens or open space include the redevelopment of the Kaiser Center and the Measure DD Implementation Project. The Kaiser Center project includes demolition of approximately 280,000 square feet of existing retail/commercial development and construction of two office towers. As part of this project, the 122,600 square foot rooftop garden would be reconfigured. Impacts to the rooftop garden were conservatively deemed significant and unavoidable. The

[15] This Mitigation Measure would not be applicable if, as part of the construction management plan, the applicant proposes all construction staging and access be provided from 19th Street. See COA TRANS-2 and COA TRANS-3.

Measure DD Implementation Project, approved in February 2008, includes historical restorations of the East 18th Street Pier, the Cleveland Cascade, and the Sailboat House in the Lake Merritt and Lake Merritt Channel group and would likely have a beneficial impact on the Lake Merritt District by restoring these features' integrity. Other than the Kaiser Center Office Project, no reasonably foreseeable projects in the vicinity would impact other historic gardens and therefore, the cumulative impact is less than significant.

(2) Cumulative Impacts to Adjacent Historical Resources: the Lake Merritt Historic District and 244 Lakeside Drive Building Group. Aside from the proposed project, the only other reasonably foreseeable project in the vicinity that may impact the Lake Merritt Historic District and the Lakeside Drive Building Group is the approved Kaiser Center Office Project. There are no reasonably foreseeable projects related to the 244 Lakeside Drive Apartments or the Schilling Garage, the other two contributors to the 244 Lakeside Drive Building Group.

Since the Lake Merritt Historic District and Lakeside Drive Building Group were established, several developments have occurred within and adjacent to these resources, including the Lake Merritt Plaza, a 27-story office tower at 1999 Harrison Street; The Essex, a 20-story condominium at the corner of Lakeside Drive and 17th Street; and the Cathedral of Christ the Light on Harrison Street between 21st Street and Grand Avenue. Other smaller projects along the shores of Lake Merritt have also been developed since these resources were identified. The proposed Emerald Views and the approved Kaiser Center Office Project, therefore, can be understood as a continuation of the development of modern towers on the northwestern shores of Lake Merritt, a characteristic of the district that has already been established. Collectively, these projects would continue the trend of redevelopment along this portion of Lake Merritt. The proposed 42-story Emerald Views development, in combination with the proposed Kaiser Center project, would introduce a total of three new, non-contributing towers to the Lake Merritt Historic District. With approximately 90 contributory resources and 17 non-contributory properties in the Lake Merritt District, the district would retain over two-thirds of its contributing properties after project implementation, thereby retaining its overall integrity and its API and National Register of Historic Places (NRHP) status. Since these proposed changes to the district would not adversely affect the district's potential eligibility to the NRHP or as an API, the cumulative impacts to the Lake Merritt Historic District are anticipated to be less-than-significant. No mitigation would be required.

Impact CULT-4: The proposed project would result in a cumulative impact to the 244 Lakeside Drive Apartment Building Group API. (S)

As discussed under Impact CULT-1 and CULT-2, the demolition of the garden and construction of the proposed project would cause a substantial adverse change to the 244 Lakeside Drive Building Group API.

Although two-thirds of the 244 Lakeside Drive Building Group contributors would remain in tact, this API is unique in that there are only three contributors to the building group and the garden makes up approximately half of the overall size of the building group. The garden is important to the API's overall integrity including aspects related to location, setting, design, feeling, and association. Furthermore, it is the element that ties the buildings together in order to form the building group.

Although no other projects are proposed within the API, based on these factors the loss of the garden and the proposed construction would result in a cumulative significant and unavoidable effect on the 244 Lakeside Drive Building Group. Mitigation measure CULT-1e and CULT-2 would reduce the cumulative impact to the API but the impact would still be considered significant and unavoidable.

(3) Cumulative Impacts to Historic Resources in the City of Oakland. Other reasonably foreseeable projects throughout the City of Oakland which may affect citywide historic resources and have been considered in the cumulative analysis include alterations to the Ninth Avenue Terminal Building along the Oakland waterfront and alterations to buildings at the former Oakland Army Base. Other projects that have been approved/constructed include those in the Waterfront Warehouse District along the Oakland Waterfront, the Courthouse Condominiums project at 29th and Telegraph Avenue, and replacement of the Estates Reservoir. However, they would affect very different types of historic resources than would the Emerald Views project. Furthermore, the review and approval process for these projects would establish project-specific mitigations to historic resources. For these reasons, the proposed project is not anticipated to result in cumulatively considerable impacts to historic resources on a Citywide basis. No mitigation would be required.

I. BIOLOGICAL RESOURCES

This section describes the existing biological setting for the proposed project, including biological resources found at and in the vicinity of the project site. This section also identifies potential impacts to biological resources that may result from project implementation, and suggests mitigation measures to reduce potentially significant impacts.

1. Setting

This section discusses the biological setting of the proposed project, including: (1) the methods used for identifying potentially occurring special-status species within the vicinity; (2) existing site conditions; and (3) applicable regulations pertaining to biological resources.

a. Methods. LSA searched the California Natural Diversity Database (CNDDB)[1] to locate records of special-status species and sensitive communities/habitats in the general vicinity of downtown Oakland (i.e., Oakland West and Oakland East USGS 7.5-minute quadrangles). Additional sources of information included the arborist survey report for the site[2] and LSA biologists' knowledge of biological resources in the project vicinity.

LSA biologist Matt Ricketts conducted a site visit on June 17, 2008. During the site visit, he recorded information on wildlife species present and assessed the site's potential to support special-status plant and/or animal species. Observations were made with binoculars and recorded in a field notebook. Information on plants was obtained from the abovementioned arborist report.

b. Regulatory Context. Applicable laws and regulations pertaining to biological resources are summarized below.

(1) Federal Endangered Species Act. The U.S. Fish and Wildlife Service (USFWS) has jurisdiction over federally listed threatened and endangered plant and animal species. The federal Endangered Species Act (FESA) protects listed species from harm or "take," broadly defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct. Any activity can be defined as a "take" even if it is unintentional or accidental. Listed plant species are typically provided less protection than listed animals.

An endangered species is one that is considered in danger of becoming extinct throughout all or a significant portion of its range. A threatened species is one that is likely to become endangered in the foreseeable future. Any activity that could result in the take of a federally listed species requires a FESA Section 10 take permit from the USFWS, or a FESA Section 7 consultation with the USFWS in conjunction with a federal permit process. Section 7 of the FESA requires other federal agencies involved in permitting projects that may result in take of federally listed species (e.g., U.S. Army Corps of Engineers) to consult with the USFWS prior to authorizing any activities that may result in take.

[1] California Department of Fish and Game, 2008. California Natural Diversity Database (CNDDB), Commercial Version dated June 1, 2008. Biogeographic Data Branch, California Department of Fish and Game, Sacramento.

[2] LSA Associates, Inc., 2009. *Arborist Survey Report, 19th Street Residential Condominiums Project, Oakland, California*. Memorandum to Heather Klein, City of Oakland, November 6.

(2) California Endangered Species Act. The California Department of Fish and Game (CDFG) has jurisdiction over State-listed endangered, threatened, and rare plant and animal species under the California Endangered Species Act (CESA). CESA is similar to FESA both in process and substance; it is intended to provide additional protection to threatened and endangered species in California. Species may be listed as threatened or endangered under both acts (in which case the provisions of both State and federal laws apply) or under only one act. A candidate species is one that the Fish and Game Commission has formally noticed as being under review by CDFG for addition to the State list. Candidate species are protected by the provisions of CESA.

(3) Migratory Bird Treaty Act. The federal Migratory Bird Treaty Act (MBTA) prohibits the taking, hunting, killing, selling, purchasing, etc. of migratory birds, parts of migratory birds, or their eggs and nests. As used in the MBTA, the term "take" is defined as "to pursue, hunt, shoot, capture, collect, kill, or attempt to pursue, hunt, shoot, capture, collect, or kill, unless the context otherwise requires." Most bird species native to North America are covered by this act.

(4) California Fish and Game Code. The CDFG is also responsible for enforcing the California Fish and Game Code, which contains several provisions potentially relevant to construction projects. For example, Section 1602 of the Fish and Game Code governs the issuance of Lake and Streambed Alteration Agreements by the CDFG. Lake or Streambed Alteration Agreements are required whenever project activities substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated as such by the CDFG.

The Fish and Game Code also lists animal species designated as Fully Protected or Protected, which may not be taken or possessed at any time. The CDFG does not issue licenses or permits for take of these species except for necessary scientific research or live capture and relocation pursuant to a permit for the protection of livestock. Fully Protected species are listed in Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the Fish and Game Code, while Protected amphibians and reptiles are listed in Chapter 5, Sections 41 and 42.

Section 3503 of the Fish and Game Code prohibits the take, possession, or needless destruction of the nest or eggs of any bird. Subsection 3503.5 specifically prohibits the take, possession, or destruction of any birds in the orders Falconiformes (hawks and eagles) or Strigiformes (owls) and their nests. These provisions, along with the federal MBTA, essentially serve to protect nesting native birds. Non-native species, including European starling, house sparrow, and rock pigeon, are not afforded any protection under the MBTA or California Fish and Game Code.

Section 4150 of the California Fish and Game Code states that "all non-game mammals or parts thereof may not be taken or possessed except as otherwise provided in the code or in accordance with regulations adopted by the [California Fish and Game] commission." These provisions are applicable to native bat species, which have the potential to roost, breed, and/or hibernate in man-made structures and trees that may be affected by projects.

(5) California Species of Special Concern. The CDFG also maintains an administrative list of Species of Special Concern, defined as a "species, subspecies, or distinct population of an animal native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria:

- is extirpated from the State, or, in the case of birds, in its primary seasonal or breeding role;
- is listed as federally, but not State-, threatened or endangered;
- meets the State definition of threatened or endangered but has not formally been listed;
- is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status;
- has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status."

Section 15380 of the CEQA Guidelines clearly indicates that Species of Special Concern should be included in an analysis of project impacts if they can be shown to meet the criteria of sensitivity outlined therein. In contrast to species listed under FESA or CESA, however, Species of Special Concern have no formal legal status.

(6) California Native Plant Society Rare Plant Program. The California Native Plant Society (CNPS), a non-governmental conservation organization, has developed five lists of plant species of concern in California. Vascular plants included on these lists are defined as follows:

List 1A: Plants presumed extinct in California
List 1B: Plants rare, threatened, or endangered in California and elsewhere
List 2: Plants rare, threatened, or endangered in California, but more common elsewhere
List 3: Plants about which more information is needed – a review list
List 4: Plants of limited distribution – a watch list

Although the CNPS is not a regulatory agency and plants on these lists have no formal regulatory protection, plants appearing on Lists 1B and 2 are generally considered to meet the definition of endangered, rare, or threatened under Section 15380(d) of CEQA (see below), and impacts to these species are usually considered "significant."

(7) Clean Water Act. The U.S. Army Corps of Engineers (Corps) is responsible under Section 404 of the Clean Water Act to regulate the discharge of fill material into waters of the United States. Waters of the U.S. fall into two broad categories: wetlands and other waters. Other waters include waterbodies and watercourses such as rivers, streams, lakes, springs, ponds, coastal waters, and estuaries. Wetlands include marshes, wet meadows, seeps, floodplains, basins, and other areas experiencing extended seasonal soil saturation. Seasonally or intermittently inundated features, such as seasonal ponds, ephemeral streams, and tidal marshes, are categorized as wetlands if they have hydric soils and support wetland plant communities. Seasonally inundated waterbodies or watercourses that do not exhibit wetland characteristics are classified as other waters of the U.S.

In general, a project proponent must obtain a Section 404 permit from the Corps before grading or placing fill in wetlands or other waters of the U.S. Prior to issuing the permit, the Corps is required to consult with the USFWS under Section 7 of the ESA, if the project may result in the take of federally listed species.

All Corps permits require water quality certification under Section 401 of the Clean Water Act. In the Bay Area, this regulatory program is administered by the San Francisco Bay Regional Water Quality

Control Board (RWQCB). Project proponents who propose to fill wetlands or other waters of the U.S. must apply for water quality certification from the RWQCB. The RWQCB has adopted a policy requiring mitigation for any loss of wetland, streambed, or other jurisdictional area.

(8) Porter-Cologne Water Quality Control Act. Under this Act (California Water Code Sections 13000–14920), the RWQCB is authorized to regulate the discharge of waste that could affect the quality of the State's waters. The RWQCB asserts jurisdiction over isolated waters and wetlands, as well as waters and wetlands that are regulated by the Corps. Therefore, even if a project does not require a federal permit, it may still require review and approval by the RWQCB. When reviewing applications, the RWQCB focuses on ensuring that projects do not adversely affect the "beneficial uses" associated with waters of the State. In most cases, the RWQCB seeks to protect these beneficial uses by requiring the integration of waste discharge requirements (WDRs) into projects that will require discharge into waters of the State. For most construction projects, the RWQCB requires the use of construction and post-construction Best Management Practices (BMPs).

(9) California Environmental Quality Act. CEQA applies to "projects" proposed to be undertaken or requiring approval by State or local government agencies. Projects are defined as having the potential to have physical impact on the environment. Under Section 15380 of CEQA, a species not included on any formal list "shall nevertheless be considered rare or endangered if the species can be shown by a local agency to meet the criteria" for listing. With sufficient documentation, a species could be shown to meet the definition of rare or endangered under CEQA and be considered a "de facto" rare or endangered species.

(10) City of Oakland General Plan. The City has authority over land and development within city limits. The City exercises its authority through policies and planning documents such as the General Plan and City Ordinances such as the City Municipal Code. The Open Space Conservation and Recreation (OSCAR) and Land Use and Transportation Element (LUTE) of the General Plan have numerous policies related to the protection of biological resources. The primary OSCAR policies relevant to biological resources include the following:

- Policy CO-5.3: 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 material 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.
- Policy CO-6.4: Manage Oakland's lakes to take advantage of their recreational and aesthetic potential while conserving their ecological functions and resource value. Discourage new recreational users which impair the ability of the lakes to support fish and wildlife. Support improvements which enhance water circulation, water quality, and habitat value, provided they are cost-effective and are compatible with established recreational activities.
- Policy CO-7.4: Discourage the removal of large trees on already developed sites unless removal is required for biological, public safety, or public works reasons.
- Policy CO-9.1: Protect rare, endangered, and threatened species by conserving and enhancing their habitat and requiring mitigation of potential adverse impacts when development occurs within habitat areas.
- Policy CO-11.1: Protect wildlife from the hazards of urbanization, including loss of habitat and predation by domestic animals.

- Policy CO-11.2: Protect and enhance migratory corridors for wildlife. Where such corridors are privately owned, require new development to retain native habitat or take other measures which help sustain local wildlife populations and migratory patterns.

In addition, the following policy from the LUTE of the General Plan is applicable to the proposed project:

- Policy W3.3: Native plant communities, wildlife habitats, and sensitive habitats should be protected and enhanced.

(11) City of Oakland Municipal Code. Title 12, Chapter 12.36 of the Oakland Municipal Code (OMC) requires that a permit be obtained prior to removing protected trees from either City or private property. Protected trees are defined as follows:

- Any coast live oak (*Quercus agrifolia*) larger than 4 inches diameter-at-breast height (dbh)
- Any tree that is larger than 9 inches dbh, except eucalyptus trees, or Monterey pines on City property and in development-related situations where more than five per acre are proposed to be removed.

(12) City of Oakland's Standard and 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.

COA BIO-1: Tree Removal During Breeding Season. *Prior to issuance of a tree removal permit.* To the extent feasible, removal of any tree and/or other vegetation suitable for nesting birds shall not occur during the breeding season of March 15 to August 15. If tree removal must occur during the breeding season, all sites shall be surveyed by a qualified biologist to verify the presence or absence of nesting birds. Pre-removal surveys shall be conducted within 15 days prior to the start of work from March 15 through May 31, and within 30 days prior to the start of work from June 1 through August 15. The pre-removal surveys shall be submitted to the Planning and Zoning Division and the Tree Services Division of the Public Works Agency. If the survey indicates the potential presence of nesting birds, the biologist shall determine an appropriately sized buffer around the nest in which no work will be allowed until the young have successfully fledged. The size of the nest buffer will be determined by the biologist in consultation with the CDFG, and will be based to a large extent on the nesting species and its sensitivity to disturbance.

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

COA BIO-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:

- No tree replacement shall be required for the removal of non-native 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.
- Replacement tree species shall consist of Sequoia sempervirens (Coast Redwood), Quercus agrifolia (Coast Live Oak), Arbutus menziesii (Madrone), Aesculus californica (California Buckeye) or Umbellularia californica (California Bay Laurel) or other tree species acceptable to the Tree Services Division.

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.

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

COA BIO-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:

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

COA BIO-5: Bird Collision Reduction. *Concurrent with submittal of planning applications or a building permit, whichever occurs first, and ongoing.* The project applicant, or his or her successor, including the building manager or Home Owner's Association, shall submit plans to the Planning and Zoning Division, for review and approval, indicating how they intend to reduce potential bird collisions to the maximum feasible extent. The applicant shall implement the approved plan, including all mandatory measures, as well as applicable and specific project Best Management Practice (BMP) strategies to reduce bird strike impacts to the maximum feasible extent.

a) Mandatory measures include **all** of the following:

   i) Comply with federal aviation safety regulations for large buildings by installing minimum intensity white strobe lighting with three second flash instead of blinking red or rotating lights.

   ii) Minimize the number of and co-locate rooftop-antennas and other rooftop structures.

   iii) Monopole structures or antennas shall not include guy wires.

   iv) Avoid the use of mirrors in landscape design.

   v) Avoid placement of bird-friendly attractants (i.e. landscaped areas, vegetated roofs, water features) near glass.

b) Additional BMP strategies to consider include the following:

   i) Make clear or reflective glass visible to birds using visual noise techniques. Examples include:

      1. Use of opaque or transparent glass in window panes instead of reflective glass.

      2. Uniformly cover the outside clear glass surface with patterns (e.g., dots, decals, images, abstract patterns). Patterns must be separated by a minimum 10 centimeters (cm).

      3. Apply striping on glass surface. If the striping is less than 2 cm wide it must be applied vertically at a maximum of 10 cm apart (or 1 cm wide strips at 5 cm distance)

      4. Install paned glass with fenestration patterns with vertical and horizontal mullions of 10 cm or less.

      5. Place decorative grilles or louvers with spacing of 10 cm or less.

      6. Apply one-way transparent film laminates to outside glass surface to make the window appear opaque on the outside.

      7. Install internal screens through non-reflective glass (as close to the glass as possible) for birds to perceive windows as solid objects.

      8. Install windows which have the screen on the outside of the glass.

      9. Use UV-reflective glass. Most birds can see ultraviolet light, which is invisible to humans.

      10. If it is not possible to apply glass treatments to the entire building, the treatment should be applied to windows at the top of the surrounding tree canopy or the anticipated height of the surrounding vegetation at maturity.

   ii) Mute reflections in glass. Examples include:

      1. Angle glass panes toward ground or sky so that the reflection is not in a direct line-of-sight (minimum angle of 20 degrees with optimum angle of 40 degrees)

      2. Awnings, overhangs, and sunshades provide birds a visual indication of a barrier and may reduce image reflections on glass, but do not entirely eliminate reflections.

iii) Reduce Light Pollution. Examples include:

1. Turn off all unnecessary interior lights from 11 p.m. to sunrise.
2. Reduce perimeter lighting whenever possible.

iv) Institute a building operation and management manual that promotes bird safety. Example text in the manual includes:

1. Donation of discovered dead bird specimens to authorized bird conservation organization or museums to aid in species identification and to benefit scientific study, as per all federal, state and local laws.
2. Production of educational materials on bird-safe practices for the building occupants
3. Schedule nightly maintenance during the day or to conclude before 11 p.m., if possible.

Other standard conditions would also serve to reduce bird collision and wildlife impacts, including:

COA UTIL-1: Required Landscape Plan for New Construction and Certain Additions to Residential Facilities.

c. Existing Conditions. The following discussion describes existing vegetation and wildlife conditions , and analyzes the potential sensitive plant communities and/or special-status plant or animal species on the site and adjacent area potentially impacted by the proposed project.

(1) Vegetation. As described in Chapter III, Project Description, the site consists of a private English garden adjacent to two apartment buildings and associated garages in downtown Oakland. As such, no naturally occurring plant species are present, and the entire site is comprised of plant species that have been planted for their aesthetic value. LSA arborist Tim Milliken identified 19 species of trees on the site,[3] with tree fern (*Cyathea* sp.), cherry (*Prunus cerrasus*), camellia (*Camellia japonica*), sweet gum (*Liquidambar styraciflua*), lemonwood (*Pittosporum eugenioides*), magnolia (*Magnolia* sp.), and coast redwood accounting for 36 of the 53 trees greater than 4 inches dbh that were inventoried. Only two species native to California, coast live oak and coast redwood, are present in the garden. Both species are commonly planted as ornamental landscaping in urban neighborhoods throughout the Bay Area. The ground space between the numerous horticultural plantings primarily consists of bare ground, wood chips, or leaf litter; herbaceous ground vegetation is largely absent. Vines cover a large portion of the chain-link fence that surrounds the site, and the concrete arbor at the southwestern site corner supports wisteria (*Wisteria* sp.) and climbing rose (*Rosa* sp.). The east-central portion of the site consists of a manicured lawn.

(2) Wildlife. The numerous ornamental trees and shrubs on site provide habitat for a variety of terrestrial landbirds adapted to urban landscapes. Some of the more common resident species include mourning dove (*Zenaida macroura*), Anna's hummingbird (*Calypte anna*), chestnut-backed chickadee (*Poecile rufescens*), bushtit (*Psalttriparus minimus*), American robin (*Turdus migratorius*), California towhee (*Pipilo crissalis*), house finch (*Carpodacus mexicanus*), American goldfinch (*Carduelis tristis*), lesser goldfinch (*Carduelis psaltria*), and house sparrow (*Passer domesticus*). The open lawn provides foraging habitat for swallows (unidentified species) and black phoebe (*Sayornis nigra*). Additional species observed include white-throated swift (*Aeronautes saxatalis*), Allen's hummingbird (*Selasphorus rufus*), Nuttall's woodpecker (*Picoides arizonae*), and American crow

[3] LSA 2008, Ibid.

(*Corvus brachyrhynchos*). Although no raptors were observed, the tall trees in the western portion of the site provide suitable perch sites and nesting habitat for red-shouldered hawk (*Buteo lineatus*) and Cooper's hawk (*Accipiter cooperi*).

Although none were seen during the site visit, several amphibian and reptile species may occur in the garden, many portions of which remain moist year-round due to irrigation of the lawn and ornamental plantings. Abundant leaf litter below the redwoods and other trees provides additional habitat. Species potentially present include California slender salamander (*Batrachoseps attenuatus*), arboreal salamander (*Aneides lugubris*), Sierran treefrog (*Pseudacris sierra*), western fence lizard (*Sceloporus occidentalis*), and southern alligator lizard (*Elgaria multicarinatus*).

Eastern fox squirrel (*Sciurus niger*) was the only mammal species observed during the site visit, although other common urban species such as house mouse (*Mus musculus*), Norway rat (*Rattus norvegicus*), Virginia opossum (*Didelphis virginiana*), northern raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*) are also likely to occur, at least intermittently.

Although not part of the project area, the western arm of Lake Merritt is located 440 feet from the project site, east of Lakeside Drive. The open water habitat of Lake Merritt supports a wide variety of waterbirds (i.e., ducks, shorebirds, and waders) throughout the year, with the largest concentrations occurring in the winter. Diving ducks such as greater and lesser scaup (*Aythya marila*, *A. affinis*) comprise the majority of the wintering duck flocks, although dabbling ducks such as mallard (*Anas platyrhynchos*) and American wigeon (*Anas americana*) are also regularly present. Various species of grebes, gulls, egrets, and herons also use the lake for foraging and resting. Shorebird species such as greater yellowlegs (*Tringa melanoleuca*), spotted sandpiper (*Actitis macularius*), and killdeer (*Charadrius vociferus*) occasionally forage along the lake margins. In 1869 Oakland Mayer Dr. Samuel Merritt declared Lake Merritt a National Wildlife Refuge the first area designated as such in the United States. Because of this, the lake was registered as a National Historic Landmark in 1963.[4] However, the lake is not currently included in the USFWS National Wildlife Refuge system.

(3) Sensitive Communities. No wetlands or aquatic features potentially subject to Corps and/or RWQCB jurisdiction under the Clean Water Act and Porter-Cologne Water Quality Act are present on the site. Any small temporary pools that may form would be due to the intensive irrigation necessary to maintain the integrity of the lawn and ornamental plantings. No naturally occurring drainages or streambeds are present.

Given the absence of naturally occurring vegetation, no sensitive plant communities as identified by the CDFG are present on the site.

(4) Special-status Species. Based on a search of the CNDDB, 45 special-status species (26 plants, 19 animals) are either known to occur or have the potential to occur in the Oakland region. Table IV.I-1 summarizes the status and potential for occurrence of these species on the project site.

Plants. None of the 26 special-status plant species identified in the records search are expected to occur on site, due to its history as a landscaped garden and consequent lack of suitable native

[4] Oakland, City of, 2008. Lake Merritt History. Office of Parks and Recreation. Website: www.oaklandnet.com/parks/parks/lakemerritt_history.asp, accessed March 24, 2009.

substrates. In addition, many of the species records in the CNDDB date from the late 19th or early 20th century. The native habitats upon which these species depend (e.g., coastal dunes, alkali soils, serpentine rock outcrops) are completely absent from downtown Oakland and surrounding urban areas. Thus, these species are assumed to be extirpated in the project vicinity.

Animals. Of the 19 special-status animal species listed in Table IV.I-1, only one, American peregrine falcon (*Falco peregrinus anatum*), has potential to occur in the site vicinity. The remaining species are not expected to occur due to the lack of suitable habitat. Many of these species are associated with aquatic habitats or tidal marsh, neither of which are present on the site.

American peregrine falcon is State-listed as endangered and also a California Fully Protected Species. Formerly federally listed as endangered, peregrines have been delisted as a result of recent conservation and recovery efforts. Much of this species' recovery can be attributed to its success at nesting in large cities, where pairs are known to nest on bridges and tall buildings. Large populations of rock pigeons (*Columba livia*) that typically occur in cities supply urban-nesting peregrines with an abundant prey source. Although no nests have been confirmed in the site vicinity, this species has been sighted sporadically over the last few years perching on and hunting from the top of several tall buildings adjacent to Lake Merritt.[5] Except for two birds that were observed on September 30, 2006, all of these sightings have been of single birds. The numerous tall buildings in the project site vicinity provide suitable perch sites for peregrines, but their use of the site itself is highly unlikely due to its small size.

2. Impacts and Mitigation Measures

This section discusses potential impacts to biological resources that could result from implementation of the proposed project. The section begins with the significance criteria, which establish the thresholds used to determine whether an impact is significant.[6] The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as appropriate.

a. Criteria of Significance. Implementation of the proposed project would have a significant impact on biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFG or USFWS;
- Have a substantial adverse effect on federally protected wetlands (as defined by Section 404 of the Clean Water Act) or state protected wetlands, through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

[5] Hails, Travis, 2007. Oakland resident and birder. Personal communication with Matt Ricketts, LSA Associates, Inc., January 25 and 26.

[6] Oakland, City of, 2008. CEQA Thresholds/Criteria of Significance Guidelines, p. 5. May 13.

Table IV.I-1: Special-status Species Potentially Occurring in the Vicinity of Project Site

Species	Status	Habitat	Potential for Occurrence
PLANTS			
Amsinckia lunaris Bent-flowered fiddleneck	1B	Woodland and grassland	None: no suitable habitat
Arctostaphylos pallida Pallid manzanita	FT, SE, 1B	Shale or thin chert substrates in deciduous and coniferous forests and woodlands, chaparral, or coastal scrub	None: no suitable habitat
Atriplex joaquiniana San Joaquin spearscale	1B	Seasonal alkali wetlands or alkali sink scrub	None: no suitable habitat
Astragalus tener var. *tener* Alkali milk-vetch	1B	Alkali playas, vernal pools, and grasslands	None: no suitable habitat
California macrophylla Round-leaved filaree	1B	Cismontane woodland, grassland; clay soils	None: no suitable habitat
Chorizanthe cuspidata var. *cuspidata* San Francisco Bay spineflower	1B	Sandy soils in coastal scrub, dunes, and prairie	None: no suitable habitat
Chorizanthe robusta var. *robusta* Robust spineflower	FE, 1B	Woodland, coastal dunes and scrub	None: no suitable habitat
Clarkia franciscana Presidio clarkia	FE, SE, 1B	Serpentine outcrops in grassland or scrub	None: no suitable habitat
Cordylanthus maritimus ssp. *palustris* Point Reyes bird's-beak	1B	Coastal salt marsh	None: no suitable habitat
Dirca occidentalis Western leatherwood	1B	Brushy slopes and mesic sites, mostly in mixed evergreen forest or oak woodland	None: no suitable habitat
Eriogonum luteolum var. *caninum* Tiburon buckwheat	1B	Serpentine soils in chaparral, grassland, cismontane woodland, coastal prairie; serpentine soils	None: no suitable habitat
Erodium macrophyllum Round-leaved filaree	2	Clay soils in woodland and grassland	None: no suitable habitat
Fritillaria liliacea Fragrant fritillary	1B	Coastal scrub, grassland, coastal prairie; mostly in serpentine soils	None: no suitable habitat
Gilia capitata ssp. *chamissonis* Blue coast gilia	1B	Coastal dunes, coastal scrub	None: no suitable habitat
Helianthella castanea Diablo helianthella	1B	Rocky soils in chaparral/oak woodland interface	None: no suitable habitat
Hoita strobilina Loma Prieta hoita	1B	Serpentine soils in chaparral and woodland	None: no suitable habitat
Holocarpha macradenia Santa Cruz tarplant	FT, SE, 1B	Coastal prairie, grassland	None: Extirpated from counties surrounding San Francisco Bay[7]
Horkelia cunuata ssp. *sericea* Kellogg's horkelia	1B	Coniferous forest, coastal scrub, chaparral	None: no suitable habitat
Meconella oregana Oregon meconella	1B	Coastal prairie, coastal scrub	None: no suitable habitat
Monardella villosa ssp. *globosa* Robust monardella	1B	Forest, woodland, and grassland openings	None: no suitable habitat

[7] California Department of Fish and Game, 2005. *The Status of Rare, Threatened, and Endangered Plants and Animals of California: 2000–2004*. CDFG, Sacramento.

Table IV.I-1 *Continued*

Species	Status	Habitat	Potential for Occurrence
Plagiobothrys chorisianus var. *chorisianus* Choris's popcorn-flower	1B	Chaparral, coastal scrub, coastal prairie	None: thought to be extirpated from East Bay[8]
Plagiobothrys diffusus San Francisco popcorn-flower	SE, 1B	Grassland and coastal prairie	None: no suitable habitat
Potamogeton filiformis Slender-leaved pondweed	2	Shallow, clear water of lakes and drainage channels	None: no suitable habitat
Sanicula maritime Adobe sanicle	SR, 1B	Meadows, seeps, grassland, chaparral, coastal prairie	None: Only known occurrence in East Bay is assumed extirpated[9]
Streptanthus albidus ssp. *peramoenus* Most beautiful jewel-flower	1B	Serpentine outcrops in chaparral, grassland, and woodland	None: no suitable habitat
Trifolium depauperatum var. *hydrophilum* Saline clover	1B	Marshes, swamps, vernal pools, and grasslands	None: only CNDDB occurrence in site vicinity is from 1883 collection
ANIMALS			
Bay checkerspot butterfly *Euphydryas editha bayensis*	FT	Native grasslands on serpentine outcrops; dependent on host plant *Plantago erectus*	None: former colonies in Oakland and San Leandro Hills extirpated due to habitat modification
Tidewater goby *Eucyclogobius newberryi*	FE, CSC	Brackish shallow lagoons and lower stream reaches with still, but not stagnant, water	None: no suitable habitat; considered extirpated from San Francisco Bay[10]
California tiger salamander *Ambystoma californiense*	FT, CSC	Grasslands and foothills that contain small mammal burrows (for dry-season habitat) and seasonal ponds and pools (for breeding during the rainy season)	None: no suitable habitat
California red-legged frog *Rana draytonii*	FT, CSC	Ponds, streams, drainages and associated uplands	None: no suitable habitat
Foothill yellow-legged frog *Rana boylii*	CSC	Partly shaded, shallow streams and riffles with a rocky substrate	None: no suitable habitat
Western pond turtle *Actinemys marmorata*	CSC	Ponds, streams, drainages and associated uplands	None: no suitable habitat
Alameda whipsnake *Masticophis lateralis euryxanthus*	FT, ST	Chaparral and sage scrub with rock outcrops and an abundance of prey species such as western fence lizard (*Sceloporus occidentalis*)	None: no suitable habitat
White-tailed kite (nesting) *Elanus leucurus*	CFP	Open grasslands, meadows, or marshes; requires dense-topped trees or shrubs for nesting and perching	None: no suitable habitat

[8] California Department of Fish and Game, 2008, op. cit.

[9] Ibid.

[10] Moyle, P. B., 2002. *Inland Fishes of California*. University of California Press, Berkeley.

Table IV.I-1 *Continued*

Species	Status	Habitat	Potential for Occurrence
Golden eagle *Aquila chrysaetos*	CSC, CFP	Rolling foothills and mountain areas; nests in cliff-walled canyons or large trees in open areas	None: not known to occur in high-density urban areas
American peregrine falcon *Falco peregrinus anatum*	SE, CFP	A variety of open habitats including coastlines, mountains, marshes, bay shorelines, and urban areas; nests on cliffs, bridges, and tall buildings	Very low: observed regularly near Lake Merritt in recent winters; may occasionally perch on tall buildings in site vicinity, but highly unlikely to use site itself
California black rail *Laterallus jamaicensis coturniculus*	ST, CFP	Salt marshes bordering larger bays, also found in brackish and freshwater marshes	None: no suitable habitat
California clapper rail *Rallus longirostris obsoletus*	FE, SE, CFP	Tidal salt marshes with sloughs and substantial cordgrass (*Spartina* sp.) cover	None: no suitable habitat
California least tern *Sterna antillarum browni*	FE, SE, CFP	Sandy beaches, alkali flats, hard-pan surfaces (salt ponds)	None: no suitable habitat
Salt marsh common yellowthroat *Geothlypis trichas sinuosa*	CSC	Salt, brackish, and fresh-water marshes and riparian woodlands; nests on or near ground in low vegetation	None: no suitable habitat
Alameda song sparrow *Melospiza melodia pusillula*	CSC	Tidal salt marshes dominated by pickleweed; nests primarily in pickleweed (*Salicornia* sp.) and marsh gumplant (*Grindelia stricta*)	None: no suitable habitat
Alameda Island mole *Scapanus latimanus parvus*	CSC	Annual and perennial grasslands on Alameda Island	None: no suitable habitat; project area outside species' range
Pallid bat *Antrozous pallidus*	CSC	Most common in open, arid habitats, but occurs in a wide variety of habitats	None: no suitable roosting habitat, does not typically occur in high-density urban areas
Salt marsh harvest mouse *Reithrodontomys raviventris*	FE, SE, CFP	Tidal salt marshes of San Francisco Bay and its tributaries. Requires tall, dense pickleweed for cover.	None: no suitable habitat
American badger *Taxidea taxus*	CSC	Grasslands and other open habitats with friable soils	None: no suitable habitat

Status Codes
FE = federally listed as endangered
FT = federally listed as threatened
SE = state-listed as endangered
ST = state-listed as threatened
SR = state-listed as rare
CSC = California Species of Special Concern
CFP = California Fully Protected Species
1B = California Native Plant Society (CNPS) List 1B: species considered rare or endangered in California and elsewhere
2 = CNPS List 2: species considered rare or endangered in California, but more common elsewhere

- Fundamentally conflict with any applicable habitat conservation plan or natural community conservation plan;
- Fundamentally conflict with the City of Oakland Tree Preservation and Removal Ordinance (OMC Chapter 12.36) by removal of protected trees under certain circumstances. Factors to be considered in determining significance include: the number, type, size, location and condition of (a) the protected trees to be removed and/or impacted by construction and (b) the protected trees to remain, with special consideration given to native trees.[11]

  Protected trees include the following: Coast live oak measuring 4 inches dbh or larger, and any other tree measuring 9 inches dbh or larger except eucalyptus and Monterey pine; provided, however, that Monterey pine trees on City property and in development-related situations where more than five Monterey pine trees per acre are proposed to be removed are considered to be protected trees; or
- Fundamentally conflict with the City of Oakland Creek Protection Ordinance (OMC Chapter 13.16) intended to protect biological resources. Although there are no specific, numeric/ quantitative criteria to assess impacts, factors to be considered in determining significance include whether there is substantial degradation of riparian and aquatic habitat through: (a) discharging a substantial amount of pollutants into a creek; (b) significantly modifying the natural flow of the water; (c) depositing substantial amounts of new material into a creek or causing substantial bank erosion or instability; or (d) adversely impacting the riparian corridor by significantly altering vegetation or wildlife habitat.

The potential impacts to biological resources are discussed in the following sections. Many of the potential impacts will be reduced to a less-than-significant level through implementation of the City's Standard Conditions of Approval (see above), which are included as part of the project.

b. Less-Than-Significant Impacts. The following section describes the less-than-significant impacts to biological resources.

(1) Candidate, Sensitive, or Special-status Species. As discussed above, no special-status species are expected to occur on the project site due to its history as an English garden and consequent lack of suitable native habitat. Although American peregrine falcons may occasionally occur in the site vicinity, they are not expected to use the site on a regular basis at present due to its small size and lack of suitable nesting, roosting, and foraging habitat. Furthermore, it is possible that construction of the residential tower would actually improve habitat for this species by providing additional perch sites for wintering peregrines in the area.

(2) Riparian Habitat. No riparian habitat or other sensitive natural communities are present on the project site.

(3) Wetlands. No wetlands or other aquatic features potentially subject to Corps or RWQCB jurisdiction are present on the project site.

[11] Oakland Planning Code section 17.158.280E2 states that "Development related" tree removal permits are exempt from CEQA if no single tree to be removed has a dbh of 36 inches or greater **and** the cumulative trunk area of all trees to be removed does not exceed 0.1 percent of the total lot area.

(4) Native Resident or Migratory Wildlife Movement, Wildlife Corridors, or Nursery Sites. Suitable nesting habitat for native bird species protected by the federal MBTA and California Fish and Game Code is present on the site. If conducted during the breeding season (March 15–August 15), the proposed removal of the existing trees and other vegetation in the garden could directly impact nesting birds by removing vegetation that contains active nests. Implementation of COA BIO-1 would reduce potential impacts to nesting birds to a less-than-significant level.

Each year, approximately 97.6 to 975.6 million birds in the continental U.S. die from collisions with glass panels or windows.[12] This issue is especially prevalent in large cities where skyscrapers with reflective or glaring and plate glass have been shown to be lethal to resident and migratory birds during daytime hours. Night collisions with various structures, including communications towers and well-lit high-rise buildings, have also been documented for large numbers of nocturnal migrants, particularly during inclement weather.[13] Although this problem has been well-studied in Chicago, Toronto, and New York City, no such studies have been conducted on the West Coast. As such, it is unknown how the construction of the 457-foot residential tower would affect migrating birds. Three design elements of the proposed building suggest that bird strikes will be minimal. First, the vertical aluminum composite panels on the north and south facades and alabaster aluminum cladding on floors 4 through 42 are likely to create "visual noise" that would enable birds to recognize the building as a building, instead of mistaking it for open sky or trees, which is what happens when birds collide with flat walls of reflective glass.[14] Second, minor variation in balcony locations on each of the floors may also contribute to visual noise. Third, the internal night-time illumination of the pyramids would not be visible from above, reducing the likelihood of nocturnal migrants being attracted to the building.

The applicant is proposing a green roof at the top of the building that would be used to capture and treat stormwater per the NPDES C.3 requirements in order to protect water quality. The City's Standard Condition of Approval related to bird collisions mandates certain measures including that the project 1) comply with federal standards related to aviation safety, 2) minimize and co-locate rooftop-antennas and structures, 3) prohibit antennas from using guy wires, 4) avoid mirrors, and 5) avoid bird friendly attractants. Based on the rooftop plans, the proposed project would meet these measures. The rooftop plans show that all rooftop equipment would be located within the pyramidal roof form thereby minimizing these structures. The rooftop antennas are limited to two, located approximately 53 feet above the green roof, and do not include guy wires. The pyramidal structure would be made of metal louvered panels and would not be mirrored or reflective. Although the green roof would be designed for water filtration it is unlikely that standing water or water features would be located on the roof as this water is proposed to be used for irrigation. The green roof is not designed at this time, but it would likely include vegetation; vegetation would not be located near glass, which is the City's standard. Furthermore, birds would be more likely to feed around Lake Merritt than on the small green roof proposed by the project. Given these design elements, the implementation of COA BIO-5 (see above), COA UTIL-1 regarding the design of the landscape plan, and

[12] Klem, D., Jr., 1990. Collisions between birds and windows: mortality and prevention. Journal of Field Ornithology 61:120–128.

[13] Gauthreaux, S. A., Jr. and C. G. Belser, 2006. *Effects of artificial night lighting on migrating birds.* Pp. 67–93 in C. Rich and T. Longcore, editors. Ecological Consequences of Artificial Night Lighting. Island Press, Washington, D.C.

[14] Doeker, R., 2005. *Bird-Safe Design Practices.* Online tutorial: http://www.birdsandbuildings.org/docs/birdsafedesign.pdf.

the following Recommended Measure, potential impacts to migratory birds are expected to be less than significant.

Recommendation BIO-1: Night-time illumination of the vertical panels and up-lighting at the base of the architectural notch should be limited to the non-migratory periods of December through February and June through August.

Certain types of buildings (e.g., abandoned, enclosed attic spaces) and trees with large cavities and/or loose bark can potentially support roosting bats. Maternity roosts are those that are occupied by pregnant females or females with non-flying young. Non-breeding roosts are day roosts without pregnant females or non-flying young. Destruction of an occupied, non-breeding bat roost, resulting in bat mortality; disturbance that causes the loss of a maternity colony of bats (resulting in the death of young); and destruction of hibernacula are prohibited under the California Fish and Game Code and would be considered a significant impact. Significant impacts may occur due to direct or indirect disturbances. Direct disturbance includes tree removal, building removal, or nest destruction by any other means. Indirect disturbance includes behavioral alterations due to noise or increased human activity in an area. Hibernacula are generally not present in the San Francisco Bay area due to sufficiently high temperatures year-round. The project site is not expected to support any major bat roosts due to historic and ongoing human occupancy of the apartment building and associated disturbance. The proposed project is therefore not expected to have direct or indirect impacts on roosting bats.

(5) Regional Conservation Plans. The project site is not currently subject to any adopted habitat conservation plans or natural community conservation plans.

(6) Protected Trees. The project would require the removal of 30 protected trees on the project site as defined in Chapter 12.36 of the OMC and identified in Table 1 of the Arborist Survey Report (see Appendix G), five of which are native species (coast redwoods) that would require replacement plantings. The draft landscape plan included as part of the project application (see Figure III-5) indicates that 14 trees would be planted (including those proposed for transplanting) as part of the proposed project. In addition, implementation of COA BIO-2 and COA BIO-3 would reduce this impact to a less-than-significant level.

The project applicant has indicated that access to the site for delivery of construction materials and off-haul has been secured and would be from Lakeside Drive, between Snow Park and the 244 Lakeside Drive Apartment Building. Due to this access location, approximately 14 trees on the 244 Lakeside Drive site, 12 of which are protected, could be impacted or require removal. Of these 12, 1 is a native species that would require replacement plantings. Implementation of COA BIO-2, COA BIO-3, and UTIL-1 would reduce this impact to a less-than-significant level.

Potential impacts to protected trees adjacent to the project site on Snow Park are discussed in Significant Impacts, below.

(7) Creek Protection Ordinance. The project site does not contain any creeks or other aquatic features that would be subject to the City's Creek Protection Ordinance.

c. Significant Impacts. The City's Standard Conditions of Approval address the removal of trees during bird breeding season, securing a tree removal permit, tree replacement plantings and tree protection on the project site during construction. The following discussion describes the significant impacts to biological resources that would result from implementation of the proposed project.

Impact BIO-1: The proposed project could impact the root systems or canopies of protected trees adjacent to the project site. (S)

There are two protected trees outside of the project site but within approximately 10 feet of the construction area. It is likely that their root systems could extend into the project site and their root zone could be impacted during project construction. In addition, the canopy of a large tree within Snow Park may need to be trimmed to provide clearance for project construction. Implementation of the following Mitigation Measure would reduce potential impacts to a less a less-than-significant level.

> Mitigation Measure BIO-1: Exposed roots shall be sharply re-cut and covered immediately after the damage occurs. If trimming of trees on adjacent properties is required, the project applicant must be granted permission by the adjacent property owner prior to initiating work. All tree trimming shall be performed by a professional arborist. In the case trees on Snow Park, the applicant shall contact the City of Oakland Arborist prior to initiating work. (LTS)

d. Cumulative Biological Resources Impacts. As discussed above, no special-status species are expected to occur on the project site due to its history as an English garden and consequent lack of suitable native habitat. The proposed project would require the removal of 30 City of Oakland protected trees and the replacement plantings of 5 trees. The landscaped plan included as part of the project application indicates that 14 trees would be planted (including the 5 trees proposed for transplanting) as part of the proposed project. COA UTIL-1 requires the submittal and approval of a final landscape plan for the entire site prior to issuance of a building permit. In addition, COA BIO-3 may require additional replacement trees, which will be determined with a decision on project entitlements. The proposed project and the cumulative projects in the vicinity would be subject to the same Standard Conditions of Approval addressing the tree removal, tree removal and tree protection as well as OMC Chapter 12.36 regarding protected trees and tree replacement. The proposed project's contribution to cumulative biological resources impacts would not be considerable.

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J. SOILS, GEOLOGY AND SEISMICITY

This section describes the project's geologic environment based on site reconnaissance, published and unpublished geologic reports and maps, and site-specific technical reports. A preliminary geotechnical study for the project site has been included in Appendix J. This section also assesses potential impacts from strong ground shaking, liquefaction, slope failure, lateral slope deformation, differential settlement, and unstable or expansive soils. Mitigation measures for the identified significant impacts are provided, as appropriate.

1. Setting

This section describes the existing geologic and seismic conditions of the project and the vicinity and associated hazards.

a. Geologic Conditions. The geology, topography and soils of the project and vicinity are described below.

(1) Geology. The project is located within the Coast Ranges Geomorphic Province, a relatively geologically young and seismically-active region on the western margin of the North American plate. In general, the Coast Ranges are composed of sedimentary bedrock with layers of recent alluvium filling the intervening valleys.[1] The near surface deposits at the project site are mapped as Merritt Sand deposits. The Merritt Sand deposits are comprised of beach and dune sand likely of the Pleistocene (more than 10,000 and less than 1.8 million years old) epoch.[2] The site-specific geotechnical report indicates surface materials are likely to consist of 20 to 30 feet of medium dense sand, silty sand and gravel with intermittent layers of stiff to very stiff sandy clay and clay. These sands are anticipated to be underlain by the Temescal Formation extending to a depth of between 60 and 90 feet below ground surface (bgs); the Temescal Formation is underlain by the San Antonio Formation and the Alameda Formation and bedrock is expected at approximately 500 feet bgs.[3] Historical records indicate the project site is landward of the previously recorded furthest extent of the Lake Merritt shoreline, located about 100 feet to the east of the project site.

(2) Topography. The approximately 0.7-acre project site is located in an area with a gently sloping topography. The ground surface elevation varies from about 15 feet National Geodetic Vertical Datum of 1929 (NGVD)[4] to about 25 feet NGVD.[5] No open creek or stream channels cross the project site.

(3) Soils. Surface soils of the project site are mapped by the Natural Resource Conservation Service as Urban land – Danville complex, a mix of about 60 percent Urban land and 30 percent

[1] California Geographic Survey, 2002. *California Geomorphic Provinces, Note 36.*

[2] Helley, E.J., LaJoie, K.R., 1979. *Flatlands Deposits of the San Francisco Bay Region, California – Their Geology and Engineering Properties, and Importance to Comprehensive Planning*, USGS Professional Paper 943.

[3] Treadwell & Rollo, 2006. *Revised Preliminary Geotechnical Recommendations, 244 Lakeside Drive, Oakland, Ca.*, Project Number 4327.01. February 3.

[4] The National Geodetic Vertical Datum of 1929 (NGVD) is, for most practical purposes, equivalent to mean sea level; however, sea level can vary. NGVD is a fixed datum that can be easily converted to other standards, for instance; the City of Oakland Vertical Datum is equal to NGVD minus 3.0 feet.

[5] United States Geological Survey, 1959 photo rev. in 1980. *Oakland West Topographic Quadrangle Map*.

Danville with the remainder being Botella loam, Clear Lake clay and Tierra loam.[6] 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 Soil Survey does not assign capability classification values for describing engineering constraints for the Urban land – Danville Complex type.

b. Seismic Conditions. Regional and site-specific seismicity are described below.

(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 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.J-1.

The U.S. Geological Survey's Working Group on California Earthquake Probabilities estimated that there is a 62 percent probability that one or more Moment Magnitude (M_w) 6.7 [7] 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.[8]

(2) Site-Specific Seismicity. The project is not within an Alquist-Priolo Earthquake Fault Zone; the project site is about three miles southwest of the Hayward A-PEFZA fault zone.[9] The Hayward fault is a right lateral strike-slip fault with a northwest-southeast axis,[10] and, as noted above, has a 27 percent chance of an M_w6.7 earthquake occurring between 2002 and 2031.

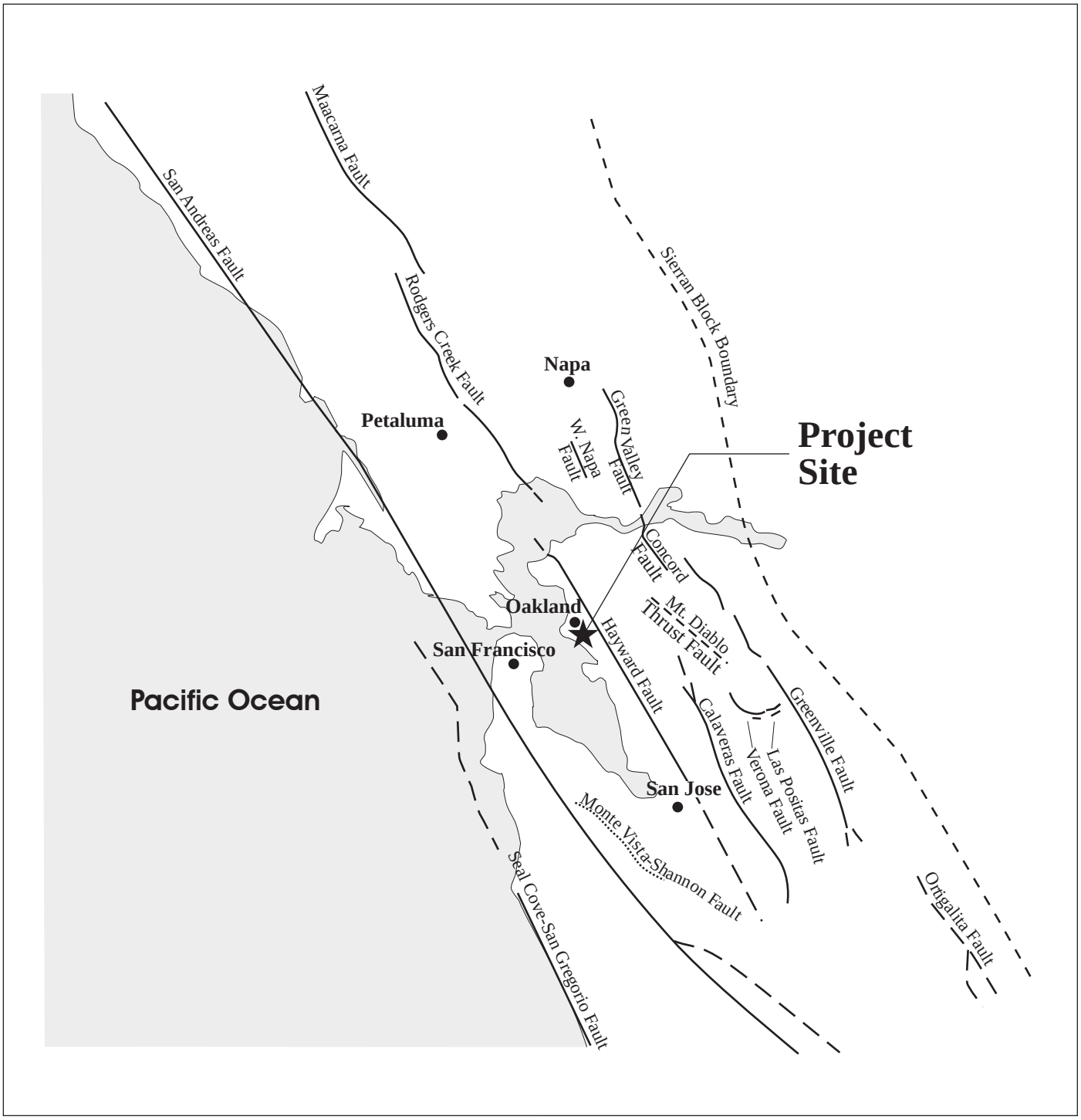
[6] Natural Resources Conservation Services, 2008. *Soil Survey of Alameda County, California, Western Part, Survey Area Data Version 5, Dec 14, 2007.* Website Soil Survey: websoilsurvey.nrcs.usda.gov.

[7] 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.

[8] Working Group on California Earthquake Probabilities, 2003. *Earthquake Probabilities in the San Francisco Bay Region: 2002 to 2031*, USGS Open File Report 03-214.

[9] California Division of Mines and Geology (CDMG), 1982. *State of California Special Studies Zones, Oakland West Quadrangle Map.*

[10] 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.



LSA

FIGURE IV.J-1

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

N

0 10 20
MILES

Emerald Views Residential Development EIR

Regional Faults

SOURCE: BASELINE ENVIRONMENTAL CONSULTING, 2008.

I:/SDZ0601 19th Street/figures/Fig_IVJ1.ai (4/19/09)

The project site is located adjacent to a California Department of Conservation Seismic Hazard Zone for liquefaction or landslide as defined by the Seismic Hazards Mapping Act. The edge of a Seismic Hazard Zone for liquefaction is mapped near the eastern border of the project site nearest to the Lake Merritt shoreline.[11] The area of the project is rated by ABAG as a moderate liquefaction hazard[12] and by the USGS as having moderate to high susceptibility for liquefaction.[13]

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.J-1). A related concept, peak ground acceleration, is measured as a fraction or percentage of gravity (*g*).[14]

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 violent seismic shaking (MMI IX-X) at the project site.[15] This would constitute a potentially significant hazard.

(3) 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 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

[11] California Geological Survey, 2003. *State of California Seismic Hazard Zones, Oakland West Quadrangle.*

[12] Association of Bay Area Governments, 2004a. Earthquake Program, *Liquefaction Hazard Maps. Website:* quake.abag.ca.gov/.

[13] Knudsen, Keith L., Wentworth, Carl M., et. al., 2000. *Preliminary Maps of Quaternary Deposits and Liquefaction Susceptibility, Nine-County San Francisco Bay Region, California*. USGS Open File Report 00-444 (Map Sheet 2 of 2).

[14] 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.

[15] Association of Bay Area Governments Earthquake Program, 2004b. *Earthquake Shaking Scenario Map. Website:* www.abag.ca.gov.

Geological Survey as 0.672.[16] This level of ground acceleration at the project site is a potentially significant hazard.

Table IV.J-1: Modified Mercalli Scale

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.

(4) 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.

[16] California Geological Survey, 2008. *Probabilistic Seismic Hazards Mapping Ground Motion Page.* Website: www.consrv.ca.gov/cgs/rghm/pshamap/pshamain.html, accessed May 15, 2008.

As mentioned above, the project is rated as a moderate liquefaction hazard area by ABAG studies.[17] According to site-specific preliminary geotechnical report, the depth to groundwater at the project site is about five to ten feet below ground surface (bgs).[18]

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.[19]

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 determine otherwise.[20]

(5) Expansive Soils. Expansion and contraction of volume can occur when expansive soils undergo alternating cycles of wetting (swelling) and drying (shrinking). During these 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.[21] 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.[22] The NRCS does not assign engineering properties to soils of the Urban Land classification as they are variable in content and characteristics.

(6) 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 five percent slope that are not underlain by landslide deposits."[23]

(7) 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

[17] Association of Bay Area Governments, 2004a, op. cit.

[18] Treadwell & Rollo, 2006. *Revised Preliminary Geotechnical Recommendations, 244 Lakeside Drive, Oakland, California (Parcel 2)*, Project Number 4327.01. February 3.

[19] 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.

[20] Association of Bay Area Governments, 2004a, op. cit.

[21] Natural Resources Conservation Services, 2008, op. cit.

[22] 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. Website: soils.usda.gov/use.

[23] 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.

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 project site was first developed in the late 1800s and early 1900s, and there is a possibility that casual or non-engineered fill may be present on the project site. The current and historic shoreline of Lake Merritt is to the northeast of the project site;[24] therefore, it is not anticipated that any marsh deposits underlie the site.[25]

d. City of Oakland General Plan Policies. The following policies and action items from the Safety and the Open Space, Conservation and Recreation (OSCAR) Elements of the City of Oakland General Plan[26] specifically address soils, geology and/or seismic hazards and are applicable to the proposed Project.

Policy Statements Related to Geologic Hazards

- Policy GE-1: Develop and continue to enforce and carry out regulations and programs to reduce seismic hazards and hazards from seismically triggered phenomena.
    - Action GE-1.2: Enact regulations requiring the preparation of site-specific geologic or geotechnical reports for development proposals in areas subject to earthquake-induced liquefaction, settlement or severe ground shaking, and conditioning project approval on the incorporation of necessary mitigation measures.
- Policy GE-2: Continue to enforce ordinances and implement programs that seek specifically to reduce the landslide and erosion hazards.
    - Action GE-2.1: Continue to enforce provisions under the subdivision ordinance requiring that, under certain conditions, geotechnical reports be filed and soil hazards investigations be made to prevent grading from creating unstable slopes, and that any necessary corrective actions are taken.
    - Action GE-2.2: Continue to enforce the grading, erosion and sedimentation ordinance by requiring, under certain conditions, grading permits and plans to control erosion and sedimentation.
- Policy GE-3: Continue, enhance or develop regulations and programs designed to minimize seismically related structural hazards from new and existing buildings.
    - Action GE-3.1: Adopt and amend as needed updated versions of the California building code so that optimal earthquake-protection standards are used in construction and renovation projects.
- Policy GE-4: Work to reduce potential damage from earthquakes to "lifeline" utility and transportation systems.
    - Action GE-4.4: Continue to designate underground utility districts for the purpose of replacing aboveground electric and phone wires and other structures with underground facilities, and use the planning-approval process to ensure that all new utility lines will be installed underground from the start.

[24] Oakland, City of, 1985. *Oakland Cultural Heritage Survey, Volume V.* Oakland City Planning Department.

[25] Treadwell & Rollo, 2006, op. cit.

[26] Oakland, City of, 2004. *General Plan Safety Element Chapter 3.* Website: www.oaklandnet.com/government/SE/Chapter3.pdf, accessed May 15, 2008.

Policy Statements Related to Soils

- 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.
    - Action CO-1.1.1: Soil-related development controls—Maintain, enforce, and periodically review development controls affecting soil removal, including the Grading Ordinance and the Sedimentation and Erosion Control Ordinance.
    - Action CO-1.1.3: Consideration of soil constraints in development—Consider soil constraints such as shrink-swell and low soil strength in the design of buildings and roads. Suitable base materials and drainage provisions should be incorporated where necessary.
- 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.
    - Action CO-2.2.1: Geo-technical study requirements—Maintain Standard Operating Procedures in the Office of Planning and Building which require geo-technical studies for major developments in areas with moderate to high ground shaking or liquefaction potential, or other geologically unstable features.
- 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'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.

COA GEO-1: Erosion and Sedimentation Control Plan. *Applies to all projects requiring a Grading Permit. Prior to any grading activities*

- The project applicant shall obtain a grading permit. The grading permit application shall include an erosion and sedimentation control plan for review and approval by the Building Services Division. The erosion and sedimentation control plan shall include all necessary measures to be taken to prevent excessive stormwater runoff or carrying by stormwater runoff of solid materials on to lands of adjacent property owners, public streets, or to creeks as a result of conditions created by grading operations. The plan shall include, but not be limited to, such measures as short-term erosion control planting, waterproof slope covering, check dams, interceptor ditches, benches, storm drains, dissipation structures, diversion dikes, retarding berms and barriers, devices to trap, store and filter out sediment, and stormwater retention basins. Off-site work by the project applicant may be necessary. The project applicant shall obtain permission or easements necessary for off-site work. There shall be a clear notation that the plan is subject to changes as changing conditions occur. Calculations of anticipated stormwater runoff and sediment volumes shall be included, if required by the Director of Development or designee. The plan shall specify that, after construction is complete, the project applicant shall ensure that the storm drain system shall be inspected and that the project applicant shall clear the system of any debris or sediment.

Ongoing throughout grading and construction activities:

- 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 and submitted for review and approval by the Building Services Division. The soils reports shall be based, at least in part, on information obtained from on-site testing. Specifically the minimum contents of the report should include:

- Logs of borings and/or profiles of test pits and trenches:
    - 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.
    - The depth of each boring shall be sufficient to provide adequate design criteria for all proposed structures.
    - All boring logs shall be included in the soils report.
- Test pits and trenches
    - Test pits and trenches shall be of sufficient length and depth to establish a suitable soils profile for the design of all proposed structures.
    - Soils profiles of all test pits and trenches shall be included in the soils report.
- 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.
- 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.
- Soils Report. A written report shall be submitted which shall include, but is not limited to, the following:
    - Site description;
    - Local and site geology;
    - Review of previous field and laboratory investigations for the site;
    - 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;
    - 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;
    - Conclusions and recommendations for foundations and retaining structures, resistance to lateral loading, slopes, and specifications, for fills, and pavement design as required;
    - 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;
    - All other items which a Soils Engineer deems necessary;

  - The signature and registration number of the Civil Engineer preparing the report.
- 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 (Same as CULT-5): Geotechnical Report. Required as part of the submittal of a tentative Tract Map or tentative Parcel Map.

- A site-specific, design level, landslide or liquefaction geotechnical investigation for each construction site within the project area shall be required as part if this project and submitted for review and approval to the Building Services Division. 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.
  - 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.
  - 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.
- Tentative Tract or Parcel Map approvals shall require, but not be limited to approval of the Geotechnical Report.

To further implement this Standard Condition and as recommended by the Preliminary Geotechnical Report, the applicant shall:

- Install underground cutoff walls to minimize the draw down of the water table away from the site.
- Verify groundwater elevation and seasonal fluctuation of groundwater table.
- Evaluate liquefaction potential on the proposed building.
- Evaluate settlement of proposed building foundation.
- Design mat foundation to resist hydrostatic lift.

- Design basement walls with water stops at construction joints and designed to withstand earth and hydrostatic pressures. Basement walls should be drained above the groundwater table.
- Evaluate passive dewatering system before use.
- Evaluate shoring system during excavation.

2. Impacts and Mitigation Measures

This section discusses potential impacts to soils, geology and seismicity that could result from implementation of the proposed project. The section begins with the significance criteria, which establish the thresholds used to determine whether an impact is significant.[27] The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as appropriate.

a. Criteria of Significance. The 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 or Landslides. The proposed project would not be expected to expose people or structures to substantial risk of loss, injury or death from on-site 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 A-PEFZA. The proposed project is not located on an

[27] Oakland, City of, 2008. CEQA Thresholds/Criteria of Significance Guidelines, p. 5. May 13.

unstable geologic unit, the development of which would be subject to, or contribute to, on- or off-site fault rupture or landslide, since there are no active faults crossing the site and the site is relatively level.

(2) Seismic Ground Shaking 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. Violent to very violent (MMI IX-X) seismic ground shaking is expected at the project site during expected earthquakes on the Hayward and other regional faults. This level of seismic shaking could cause extensive structural damage to buildings in the area the site. Most 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.

Regional mapping by ABAG and the State of California indicates moderate susceptibility to liquefaction within the project site. Based on previous investigations in the area and the topography of the site, the preliminary geotechnical report concludes the depth to groundwater at the site is likely five to ten feet bgs.[28] In addition, the preliminary geotechnical report notes that the site is in close proximity to a defined State of California Seismic Hazard Zone for Liquefaction and recommends that final design-level geotechnical investigation should include an evaluation of liquefaction potential. 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.[29]

Prior to the issuance of any site-specific grading or building permits, a design-level geotechnical investigation must be prepared by a licensed professional and submitted to the City of Oakland Building Services Center for review and confirmation that the proposed development fully complies with the COA GEO-3 (same as CULT-5). The report must determine the project site's geotechnical conditions and address potential seismic hazards, such as seismic shaking and liquefaction. The report must identify building techniques appropriate to minimizing seismic damage. In addition, the geotechnical investigation must conform to the California Division of Mines and Geology (CDMG) recommendations presented in the *Guidelines for Evaluating Seismic Hazards in California*, CDMG Special Publication 117. Final seismic considerations for the site must be submitted to and approved by the City of Oakland Building Services Division prior to commencement of the project. All design criteria and specifications identified in the geotechnical and soils reports must be followed during the design and construction of the proposed project.

Compliance with the City of Oakland Standard Conditions of Approval, as described above, would reduce the potential hazards associated with seismic activity to a less-than-significant level.

(3) Expansive Soils, Settlement and Differential Settlement. Construction of the proposed project would remove most of the surface soils at the site as part of the foundation excavation. The

[28] Treadwell & Rollo, 2006. op. cit.

[29] Earthquake Engineering Research Institute, 1994. *Earthquake Basics: Liquefaction – What is it and what to do about it.*

revised preliminary geotechnical report indicates that the foundations for the primary structure of the proposed project would be approximately 60 feet below the current ground surface, within the Temescal formation. The report recommends either a mat foundation system or driven piles with structural slabs spanning the piles (the project as proposed would utilize screw piles). The report notes that insufficient data were collected to evaluate settlement at a design level; however, it is estimated, based on available data, that settlement for a mat type foundation would be on the order of two inches for the structure.[30]

Within the perimeter of the major area of excavation, utility connections and surface level infrastructure such as pavements and walkways would rest on engineered fill (back fill) up to 60 feet deep. Outside the perimeter of the major area of excavation, the native soils underlying portions of the project site may exhibit high shrink/swell characteristics.[31] 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 where improvements cross the change from engineered to native soils. In locations underlain by expansive soils, the designers of proposed improvements (including sidewalks, roads, and underground utilities) would consider these conditions. In addition, non-uniformly compacted imported fill may be present at the project site. These materials could experience settlements under new structural loads. Structural damage, warping, and cracking of pavements and other infrastructure, and rupture of utility lines may occur if potential settlement and the nature of the imported fill were not considered during design and construction of improvements. In addition, grading and excavation of the project site, in preparation for construction of structures and utilities, would result in areas of cut and fill. Engineered fill, existing non-engineered fill, and native undisturbed soil would be subject to varying rates of compaction and settlement. Structures built over discontinuous materials of varying densities and compactness may be subject to stress or damage due to differential settlement. The design-level geotechnical investigation, to be prepared by a licensed professional and approved by the City of Oakland Building Services Center, would include measures to minimize potential damages related to expansive soils, settlement and differential settlement. Engineering options may range from removal of the problematic soils and replacement, as needed, with properly conditioned and compacted fill, to design and construction of improvements to withstand the forces exerted during the expected shrink-swell cycles and settlements. These conditions and recommended geotechnical precautionary measures would be incorporated into the design-level geotechnical investigation in accordance with the requirements of COA GEO-2 and COA GEO-3 requiring that the investigations determine final design parameters for the walls, foundations, foundation slabs, surrounding related improvements, and infrastructure (utilities, roadways, parking lots, and sidewalks). All design criteria and specifications set forth in the design-level geotechnical investigation would be followed to reduce impacts associated with shrink-swell soils and settlement to a less-than-significant level.

(4) Wells, Pits, or Unknown Subterranean Features Contributing to Ground Failure.
The current site use is as a landscaped garden, and gardeners' sheds, which may include irrigation lines, drains, and potentially voids in the near surface layers from previous development. A well is located on the site, and discussed separately in the hydrology and water quality section of this EIR. The proposed project would include excavation (up to 60 feet in depth for the building foundations) and earthmoving such that any near surface voids (such as the grotto, or pits, tanks or drainage lines)

[30] Treadwell & Rollo, 2006. op. cit.

[31] Natural Resources Conservation Services, 2006, op. cit.

would be removed as a result of site development. Impacts that could result from subterranean features would be less than significant.

(5) Excavation Dewatering. Excavation for the basement garage levels of the primary structure is anticipated to be approximately 60 feet bgs. Based on the preliminary geotechnical report, it is anticipated that construction activities would include the use of dewatering systems and temporary shoring in the construction of the basement walls. After construction, basement walls would be partially submerged and would be designed to withstand the earth and hydrologic pressures. Construction constraints include the proximity of the two adjacent multistory residential structures, the high water table, and unstable soils.

The preliminary geotechnical report[32] concludes that the presence of adjacent buildings and improvements and the effects of dewatering and shoring at the project site on the adjacent existing buildings are geotechnical issues that will influence design and construction of the proposed project. Structural integrity of the soils and subsurface layers supporting the adjacent structures could be affected by the proposed construction activities. A structural failure resulting in collapse of the excavation walls during construction could result in loss of life or injury to construction personnel. Engineering methods to ensure the stability of the subsurface layers supporting the adjacent structures are recommended in the revised preliminary geotechnical report. These suggested measures include an active dewatering system combined with the installation of a cut-off wall to shore the excavation. This approach would result in limiting the groundwater draw-down to the internal portion of the proposed project site while minimizing the lowering of the groundwater level outside the excavation. The final design-level geotechnical investigation would determine the final design parameters for the dewatering systems and temporary shoring methods used during the construction of the basement walls and include design and engineering that would withstand the earth and hydrologic pressures. These conditions and recommended geotechnical precautionary measures of the design-level geotechnical investigation would be incorporated into the project engineering in accordance with the requirements of COA GEO-3. Potential impacts from excavation dewatering would be less than significant.

(6) Septic Tanks and Fields. 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.

(7) Other Concerns. 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."[33] The proposed project would not hinder energy reserve development, as the project site is not located over a known gas, oil or geothermal field.[34] Potential impacts associated with erosion and loss of topsoil is discussed in the Hydrology and Water Quality section of this Draft EIR. Compliance with City's Erosion and Sedimentation Control Plan Standard Condition of Approval (COA GEO-1) and Grading Permit requirement would ensure less-than-significant erosion impacts.

[32] Treadwell & Rollo, 2006, op. cit.

[33] California Department of Conservation, 1996. *Update of Mineral Land Classification, Plate 1.* Division of Mines and Geology (DMG) Open-File Report 96-03.

[34] California Department of Conservation, 2000. *Energy Map of California, Third Edition,* Division of Oil, Gas or Geothermal Resources.

c. Significant Soils, Geology and Seismicity Impacts. The City's Standard Conditions of Approval require that all design criteria and specifications set forth in the design-level geotechnical investigation must 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 Soils, Geology and Seismicity Impacts. Potential cumulative geology and seismic impacts do not extend far beyond a project's boundaries, since such impacts are typically confined to specific locations and do not combine to create a cumulative impact. The exception to this 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 geologic stability 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 codes, now known as the International Building Code (IBC). Within California, additional state requirements were added to the IBC 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 reduced risk to life, health, and safety, and minimized seismic risk. Present and future projects within the project's geographic area are subject to these enhanced requirements and result in reducing geologic and seismic hazards. As present and future projects replacing aging infrastructure and prior development resulting from past projects with new, more rigorously regulated designs, cumulative seismic risks are incrementally reduced for future projects.

The City of Oakland Standard Conditions of Approval, discussed above, including appropriate grading requirements, and compliance with the CBC would reduce cumulative geologic effects of the proposed project site and surrounding area. Therefore, implementation of the project together with the impact of past, present and reasonably foreseeable future development would not make a considerable contribution to a significant cumulative geologic impact. As a result, no considerable contribution to substantial risk would result from present, current, and future projects.

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K. 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 revised preliminary geotechnical report, 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 suggests mitigation measures to reduce potential impacts.

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 for the period of 1970 to 2006 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 same period 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 in the Bay Area at a frequency of about once every three years.[2]

b. Runoff and Drainage. The project site is relatively flat, ranging in elevation from about 15 to 25 feet above mean sea level (relative to the National Geodetic Vertical Datum (NGVD)).[3] There are no USGS "blue line" creeks or streams crossing the project site.[4] Based on mapping of regional historic drainage conditions, the site is beyond the historical shoreline of Lake Merritt, and no historical watercourses cross the site.[5]

The approximately 0.7-acre project site consists of a private English garden. Impervious surfaces (two small structures with a parking area and paved walkways) cover a relatively small portion of the site. Runoff on the site is directed by sheetflow towards the lawns and landscaped area. Based on observation made during an April 2006 site reconnaissance, there are storm drains leading to city-maintained

[1] Western Regional Climate Center, 2005. Website: www.wrcc.dri.edu/cgi-bin/cliMAIN.pl? caokmu+sfo, accessed May 22, 2008.

[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] The National Geodetic Vertical Datum of 1929 (NGVD) is, for most practical purposes, equivalent to mean sea level; however, sea level can vary. NGVD is a fixed datum that can be easily converted to other standards, for instance; the City of Oakland Vertical Datum is equal to NGVD minus 3.0 feet.

[4] United States Geological Survey, 1959 (photo revised in 1980). Oakland West, Topographic Quadrangle.

[5] Sowers, Janet M., 1993 (revised 1995 and 2000). *Creek and Watershed Map of Berkeley & Oakland,* Oakland Museum of California.

storm sewers, located at the northern low-lying portion of the lawn. The municipal storm-sewer system in the area of the project site discharges to Lake Merritt.[6]

c. Storm Drainage. 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.[7] Four pump stations (Lake Merritt, McKillop, Temescal, and Ettie) lift stormwater to the Bay. The project site is within the Oakland Planning Watershed, a subregion of the San Francisco Bay hydrologic region.[8]

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.[9] Runoff on the impervious portions of the site is directed by sheetflow primarily towards curbside storm drains.

Based on observation made during an April 2006 site reconnaissance, there are storm drains leading to city-maintained storm sewers, located at the northern low-lying portion of the lawn. The municipal storm-sewer system in the area of the project site discharges to Lake Merritt.[10]

d. 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 for 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)

[6] Kashi, Kevin, Civil Engineer, City of Oakland Public Works, 2006. Personal communication with Ralph Russell, Baseline Environmental Consulting, November 9.

[7] Alameda County Flood Control and Water Conservation District, 2005. *Report to the Community, Fiscal Year 2005.*

[8] California Natural Resources Agency, 2009. The California Watershed Portal; Online Watershed Browser. Website: cwp.resources.ca.gov/calw_browse.php.

[9] Oakland, City of, 2004. *Public Works Agency Standards, Storm Drainage Design Guidelines*. November.

[10] Kashi, Kevin, Civil Engineer, City of Oakland Public Works, 2006. Personal communication with Ralph Russell, Baseline Environmental Consulting, November 9.

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.[11] Based on FEMA mapping, the project site is not located in the 100- or 500-year flood zone.[12] The project site is also not located within a mapped dam failure inundation hazard zone.[13]

e. 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 Board regulate water quality. The project site is under the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (Regional Water Board), which is responsible for implementation of State and federal water quality protection statutes and regulation in the Bay Area. The Regional Water Board implements the Water Quality Control Plan (Basin Plan),[14] a 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 Lake Merritt.

(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 Regional Water Board administers the NPDES program and issues NPDES permits. The Regional 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).[15] The ACCWP maintains compliance with the NPDES Permit and promotes stormwater pollution prevention.

Participating agencies (including the City of Oakland) must comply with the provisions of the NPDES Municipal Regional Permit (MRP) 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 Regional Water Board Order R2-2009-0074 (NPDES Permit No. CAS612008), as amended. 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, with the exception of the Hydromodification requirement, which is applicable to sites of one acre or more.

The 31,830 square foot site is currently developed as a garden with limited areas of paving and two small gardeners' buildings.[16] Based on observations made during a site reconnaissance, it is estimated

[11] Oakland, City of, 2004. *General Plan Safety Element Chapter 6.* Website: www.oaklandnet.com/government/SE/Chapter6.pdf, accessed May 22, 2008.

[12] Federal Emergency Management Agency, 1982. FIRM # 065048 0015 B, City of Oakland, Alameda County, September 30.

[13] Association of Bay Area Governments, 1995. *Dam Failure Inundation Hazard Map for North Oakland*.

[14] California Regional Water Quality Control Board, San Francisco Bay Region, 2007. *San Francisco Bay Basin Water Quality Control Plan*, January 18. Website: www.waterboards.ca.gov/sanfranciscobay/basinplan.shtml, accessed May 22, 2008.

[15] California Regional Water Quality Control Board, San Francisco Bay Region, 2009. Order R2-2009-0074, NPDES Permit NO. CAS6122008. Website: www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater/mrp.shtml, accessed December 9, 2009.

[16] Oakland, City of, 1985. *Oakland Cultural Heritage Survey, Volume V.* Oakland City Planning Department.

that less than 2,000 square feet of the site is covered in impermeable surfaces.[17] At the subsurface garage level(s), the proposed project has a floor area of approximately 28,655 square feet (per floor). At the first floor, the building 'steps back' from the subsurface garage footprint so that the structure has a footprint of approximately 12,000 square feet at surface level with the remainder of the site being patios, walkways, driveways, and landscaping.[18] This would result in the project creating or replacing 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:

- **Low Impact Development, Source Control.** The goal of LID is to reduce runoff and mimic a site's predevelopment hydrology by minimizing disturbed areas and impervious cover and then infiltrating, storing, detaining, evapotranspiring, and/or biotreating stormwater runoff close to its source. LID employs principles such as preserving and recreating natural landscape features and minimizing imperviousness to create functional and appealing site drainage that treats stormwater as a resource, rather than a waste product. Practices used to adhere to these LID principles include measures such as rain barrels and cisterns, green roofs, permeable pavement, preserving undeveloped open space, and biotreatment through rain gardens, bioretention units, bioswales, and planter/tree boxes. Site design features include reducing impervious areas and increasing pervious areas utilizing landscaped areas in between impervious areas as a storm drainage treatment feature. All projects are to consider implementing site design features appropriate to the development.
- **Numeric Sizing Criteria for Stormwater 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 85th percentile 24 hour-event (in the Bay Area this is equivalent to about the 1-inch storm) or a minimum of 80 percent of the average annual runoff.
- **Operation and Maintenance of Treatment Measures.** Treatment controls often do not work unless adequately maintained. The permit requires an operations and maintenance (O&M) verification program, which includes: 1) identifying the properties with treatment controls; 2) ensuring a legally enforceable mechanism that requires written acknowledgement of responsibility for the onsite O&M program by project proponents and their successors, 3) developing agreements with private entities to maintain the controls (e.g., incorporation into CC&Rs or homeowners association duties); and 4) periodic inspection, maintenance (as needed), and reporting.

Limitation on Increase of Peak Stormwater Runoff Discharge Rates (Hydromodification). Urbanization creates impervious surfaces that reduce the landscape's natural ability to absorb water and release it slowly to creeks and other surface water bodies. 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, projects disturbing one acre or more must evaluate the potential for this to occur and provide mitigation, as necessary.

Construction General Permit. Pursuant to CWA Section 402 and the Porter-Cologne Water Quality Control Act, the State Water Resources Control Board (SWRCB) adopted an NPDES General

[17] Baseline Environmental Consulting, 2006. Site Visit, 222 19th Street, Oakland, CA. April 21.

[18] ian birchall + associates, 2007. *Project Data and Drawings Index Sheet A0.01,* 222 19th Street Properties, Oakland CA., Job No. 0531. October 29.

Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit or CGP) (Order No. 2009-0009-DWQ, NPDES No. CAS000002) on September 2, 2009. To obtain coverage under the CGP, the discharger must provide via electronic submittal, a Notice of Intent (NOI), a Storm Water Pollution Prevention Plan (SWPPP), and other documents required by the CGP.

Construction activities subject to the CGP include clearing, grading, and disturbances to the ground, such as grubbing or excavation, that result in soil disturbances of at least one acre of total land area (or smaller sites that are part of a common plan of development or sale that disturbs more than one acre of land surface). Projects less than one acre are also eligible and may optionally apply for coverage at the proponent's discretion.[19]

A SWPPP must be prepared by a Qualified SWPPP Developer that meets the certification requirements in the CGP. The purpose of the SWPPP is to (1) to help identify the sources of sediment and other pollutants that could affect the quality of stormwater discharges; and (2) to describe and ensure the implementation of Best Management Practices (BMPs) to reduce or eliminate sediment and other pollutants in stormwater as well as non-stormwater discharges resulting from construction activity. The CGP mandates certain requirements based on the risk level of the project (Level 1, Level 2, or Level 3), which is based on the risk of sediment discharge and the receiving water risk. The Project would not be a Level 1 project, because a Level 1 project cannot discharge to a sensitive waterbody. Lake Merritt and San Francisco Bay are surface water bodies that are listed as impaired by the Regional Water Board: Lake Merritt as impaired due to organic enrichment, low dissolved oxygen, and trash resulting from urban runoff and storm sewer effluent; San Francisco Bay is water quality impaired for several pesticides (chlordane, DDT, diazinon, and dieldrin), dioxin compounds, exotic species, furan compounds, mercury, PCBs, and selenium.[20] Depending on the timing of the project (i.e., whether it is conducted during the rainy season or not), the project would be either Level 2 or Level 3. For Level 2 risk projects, Numeric Action Levels (NALs) for turbidity and pH are imposed, and for Level 3 risk projects, Numeric Effluent Limitations (NELs) for turbidity and pH are imposed. For Level 2 and Level 3 projects, the discharger must also prepare a Rain Event Action Plan that must be designed to protect all exposed portions of the construction site within 48 hours prior to any likely precipitation event.

The SWPPP must also include a Construction Site Monitoring Program. The monitoring program includes, depending on the project risk level, visual observations of site discharges, water quality monitoring of site discharges (pH, turbidity, and non-visible pollutants, if applicable), and receiving water monitoring (pH, turbidity, suspended sediment concentration, and bioassessment).

The performance standard in the CGP is that dischargers shall minimize or prevent pollutants in stormwater discharges and authorized non-stormwater discharges through the use of controls, structures, and management practices that achieve Best Available Technology (BAT) for treatment of toxic and non-conventional pollutants and Best Conventional Technology (BCT) for treatment of

[19] Sid, Papazin, 2009. Storm Water Construction Unit Staff. Personal Communication with Baseline Environmental Consulting, State Water Resources Control Board. December 9.

[20] Regional Water Quality Control Board, 2007. 2006 CWA Section 303(d) List of Water Quality Limited Segment Requiring TMDLs. Approved by US EPA, June 28, 2007.

conventional pollutants.[21] The permit also imposes NALs and NELs for pH and turbidity (for Level 2 and Level 3 risk dischargers). Locally, CGP activities are enforced by the Regional Water Board.

The project site is approximately 0.7 acres; however, all projects, including those 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).[22] The ACCWP Stormwater Quality Protection 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.[23] Depending on the presence and concentration of contaminants in groundwater, construction period dewatering activities at the site will require coverage under either a Regional Water Board issued individual permit, an existing Regional Water Board dewatering permit, or the CGP. Generally, clean groundwater can be discharged under conditions imposed by an approved SWPPP required as part of coverage under the CGP. These conditions would include elimination of sediment from discharged water and volume and flow control management.[24]

(2) Groundwater. The Basin Plan specifies that groundwater underlying the project site has designated beneficial uses, including municipal and domestic supply, industrial supply, and agricultural 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 (although the map indicates that the well locations are approximate).[25] There is one well known to be currently located on the project site. This well is used for irrigation of the gardens. No details regarding the well depth or construction are available. The preliminary geotechnical report notes that, based on previous investigations in the vicinity and site topography, groundwater is expected at a depth of approximately 5 to 10 feet below the ground surface (bgs) (between elevations of 10 and 15 feet NGVD).[26] The potential for the presence of contamination in the underlying groundwater associated with historic industrial activity is discussed in the Hazards section of this Draft EIR.

f. Regulatory Setting. The following describes the City of Oakland regulatory setting as it relates to hydrology and water quality.

[21] As defined by US EPA, Best Available Technology (BAT) is a technology-based standard established by the CWA as the most appropriate means available on a national basis for controlling the direct discharge of toxic and non-conventional pollutants to navigable waters. The BAT effluent limitations guidelines, in general, represent the best existing performance of treatment technologies that are economically achievable. Best Conventional Technology (BCT) is a technology-based standard that applies to treatment of conventional pollutants, such as total suspended solids.

[22] Alameda Countywide Clean Water Program, 2007. *Stormwater Quality Control Requirements for Developers, Builders and Project Applicants.* Website: cleanwaterprogram.org/businesses_developers.htm, accessed May 22, 2008.

[23] Alameda Countywide Clean Water Program, 2003. *Stormwater Quality Management Plan 2001-2008*. Website: cleanwaterprogram.org/aboutus_stormwaterPlan.htm, accessed May 22, 2008.

[24] Boschen, Christine, 2009. SF Regional Water Board. Personal communication with Baseline Environmental Consulting. December 10.

[25] Figuers, S., 1998. *Groundwater Study and Water Supply History of the East Bay Plain, Alameda, and Contra Costa Counties*, June 15.

[26] Treadwell & Rollo, 2006. *Revised Preliminary Geotechnical Recommendations for 244 Lakeside Drive, Oakland, CA.* February 3.

(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:

- Policy FL-1: Enforce and update local ordinances, and comply with regional orders, that would reduce the risk of storm-induced flooding.
    - Action FL-1.3: Comply with all applicable performance standards pursuant to the 2003 Alameda countywide National Pollutant Discharge Elimination System municipal stormwater permit that seek to manage increases in stormwater runoff flows from new-development and redevelopment construction projects.
- Policy FL-2: Continue or strengthen city programs that seek to minimize the storm-induced flooding hazard.
    - Action FL-2.3: Continue the "Maintain-a-Drain Campaign," which encourages residents and businesses to keep storm drains in their neighborhood free of debris.
- 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 Open Space, Conservation, and Recreation (OSCAR) Element includes the following Hydrology objective and policies:

- Policy CO-5.1: Protection of Groundwater Recharge. 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.
- 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 storm runoff; (b) reduce water pollution associated with hazardous spills, runoff from hazardous materials areas, improper disposal of household hazardous materials, illicit dumping, and marina "live-aboards;" and (c) improve water quality in Lake Merritt to enhance the lakes aesthetic, recreational and ecological functions.

(2) City of Oakland Building Codes. Effective November 2010, the City of Oakland adopted the 2010 editions of the California Building, Electrical, Plumbing, Fire, Mechanical and Green Building Codes. Permit applications received by the City after November 2010 are required to comply with the new code editions.[27]

(3) City of Oakland Public Works Agency, Engineering Design and ROW Management Division. City of Oakland requires that: The City of Oakland Storm Drain Design Guidelines (http://www.oaklandpw.com/Asset607.aspx) be followed for facilities that are proposed to be owned and maintained by the City. The storm water quality control requirements under the ACCWP, C.3 Guidelines, apply to this project and all C.3 Guidelines are to be followed. This development is close to Lake Merritt and the project is not required to reduce the peak stormwater runoff volumes.

[27] Resolution 83032 C.M.S. Ordinance 13047 C.M.S.

(4) City of Oakland Public Works Agency, Environmental Sciences Division. The City of Oakland Environmental Services Division offers the following recommendations[28] 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 treating 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 the 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 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.

[28] Oakland, City of, 2008. Public Works Agency, *Strategy 1.5: Manage Site Water*, Environmental Services Division, Website: www.oaklandpw.com/Page368.aspx, accessed on January, 9, 2008.

- 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.

(5) 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 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.

(6) City of Oakland Municipal and Planning Codes. Applicable chapters and amendments of the City of Oakland Municipal and Planning codes regarding hydrology and water quality include the following:

- 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.
- Chapter 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:
    - Eliminating non-storm-water discharges to the municipal separate storm sewer;
    - Controlling the discharge to municipal separate storm sewers from spills, dumping or disposal of materials other than storm water;
    - Reducing pollutants in storm water discharges to the maximum extent practicable;
    - Safeguarding and preserving creeks and riparian corridors in a natural state;
    - Preserving and enhancing creekside vegetation and wildlife;
    - Preventing activities that would contribute significantly to flooding, erosion or sedimentation, or that would destroy riparian areas or would inhibit their restoration;
    - Enhancing recreational and beneficial uses of creeks;
    - Controlling erosion and sedimentation;
    - Protecting drainage facilities; and
    - 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 Building, Electrical, Mechanical, and Plumbing Codes. Article I. General Administrative Amendments. 15.04.005 – Title. This chapter of the Oakland Municipal Code shall be known as the "Oakland Amendments of the Current Editions of the California Building Standards Codes, Part 2 (Building), Part 3 (Electrical), Part 4 (Mechanical), and Part 5 (Plumbing)", may be cited as such, and will be referred to herein as "this chapter," "this Code," or the "Oakland Building Construction Code."

These amendments expand on or supersede the requirements of the California Building Standards 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:

15.04.660 - Adds the following new CBC Chapter 18B for requirements for Grading, Excavations, and Fills:

Section 1802B.1 Permit—When Required.

No person shall do or cause any grading in private or public property without first having obtained a permit to do so from the City Engineer whenever such grading will result in any of the following:

1. The volume of excavation or fill will exceed fifty (50) cubic yards provided either:
   a. the existing or the resulting rate of slope will exceed 20%; or
   b. the vertical distance between the top and bottom of excavation or fill will exceed five feet at any location.

Section 1802B.3 Permit—Items to Include in Application.

The application for a Grading Permit must include all of the following items in triplicate:

1. Application Form.
2. Vicinity Map, Site Map and Grading Plan.
3. Erosion and Sedimentation Control Plan, where required by the City Engineer.
4. Statement(s) of the Civil Engineer(s) in Responsible Charge.
5. Soils Report.
6. A landscape addendum to the erosion and sediment control plans by a licensed landscape architect when required by the Director of City Planning.
7. Proposed work schedule.
8. Deposit for review of the application in accordance with the current master fee schedule.
9. Itemized estimate of cost of work by a Civil Engineer.
10. Such other items as may be required by the City Engineer his duly authorized representative to aid in the understanding and review of the proposed grading work.
11. Proposed Dust Control Measures.

(7) 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.

COA HYDRO-1 (Same as COA GEO-1): Erosion and Sedimentation Control Plan. *Prior to any grading activities.*

- The project applicant shall obtain a grading permit. The grading permit application shall include an erosion and sedimentation control plan for review and approval by the Building Services Division. The erosion and

sedimentation control plan shall include all necessary measures to be taken to prevent excessive stormwater runoff or carrying by stormwater runoff of solid materials on to lands of adjacent property owners, public streets, or to creeks as a result of conditions created by grading operations. The plan shall include, but not be limited to, such measures as short-term erosion control planting, waterproof slope covering, check dams, interceptor ditches, benches, storm drains, dissipation structures, diversion dikes, retarding berms and barriers, devices to trap, store and filter out sediment, and stormwater retention basins. Off-site work by the project applicant may be necessary. The project applicant shall obtain permission or easements necessary for off-site work. There shall be a clear notation that the plan is subject to changes as changing conditions occur. Calculations of anticipated stormwater runoff and sediment volumes shall be included, if required by the Director of Development or designee. The plan shall specify that, after construction is complete, the project applicant shall ensure that the storm drain system shall be inspected and that the project applicant shall clear the system of any debris or sediment.

Ongoing throughout grading and construction activities.

- 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: 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 County-wide Clean Water Program. The applicant shall submit with the application for a building permit (or other construction-related permit) a completed Construction-Permit-Phase Stormwater Supplemental Form to the Building Services Division. The project drawings submitted for the building permit (or other construction-related permit) shall contain a stormwater management plan, for review and approval by the City, to manage stormwater run-off and to limit the discharge of pollutants in stormwater after construction of the project to the maximum extent practicable.

- The post-construction stormwater 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.
- 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.[29]

Prior to final permit inspection, the applicant shall implement the approved stormwater pollution management plan.

COA HYDRO-3: 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.

COA HYDRO-4: Stormwater 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 Sewer and Stormwater Division. 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.

Other standard conditions would also serve to reduce hydrology and water quality impacts, including:

COA SERV-1: Conformance with other Requirements.

2. Impacts and Mitigation Measures

This section discusses potential impacts to hydrology and water quality that could result from implementation of the proposed project. The section begins with the significance criteria, which establish the thresholds used to determine whether an impact is significant.[30] The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as appropriate.

[29] Alternative Compliance Programs: Under the terms of the Municipal Stormwater permit granted by the RWQCB, 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.

[30] Oakland, City of, 2008. CEQA Thresholds/Criteria of Significance Guidelines, p. 5. May 13.

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; or
- 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) Water Quality Standards. Activities proposed by the project would include two phases that could result in impacts to water quality, construction and operation. Aspects of each of these two phases are described below.

Construction Period Water Quality. Construction, grading, and excavation at the project site would require temporary disturbance of surface soils. During the construction period, grading and

excavation activities would result in exposure of soil to runoff, potentially causing erosion and entrainment of sediment in the stormwater runoff, and the discharge of groundwater from the excavation (dewatering). 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 Lake Merritt and San Francisco Bay in stormwater runoff, dewatering effluent, wash water, and dust control water, potentially reducing water quality.

The proposed project would include the clearing and grading of the site. Construction projects resulting in disturbances of at least one acre are required to seek coverage under the NPDES CGP and file an NOI with the SWRCB for discharges of stormwater associated with construction activity. Projects of less than one acre may voluntarily seek coverage under the CGP. Coverage under the CGP would require a project applicant to develop and implement a SWPPP, meeting the requirements of the SWRCB. The project site is approximately 0.7 acres, and as such is not required to file for coverage under the CGP and develop and implement a SWPPP. However, as part of compliance with the COA HYDRO-1 and City of Oakland requirements, the project proponent must prepare an Erosion and Sedimentation Control Plan as part of a grading permit to reduce potential impacts to surface water quality through the construction period of the project. Required elements of a Erosion and Sedimentation Control Plan include but are not limited to 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.

The proposed project would also include excavation to depths of approximately 60 feet for the building foundation and subsurface parking garage. The preliminary geotechnical report recommends a combination of cutoff walls and dewatering of the excavation site during the construction process, as the excavation would be deeper than the elevation of groundwater in the area. Seepage of groundwater into the excavation could occur under the proposed project. The excavation drainage may contain sediment and lubricants from the construction equipment, or contaminants present in the inflow groundwater. If the dewatered groundwater were discharged directly to storm or sanitary sewers, these materials could potentially violate federal and state standards for water quality. Additionally, high volume and/or high velocity discharges of excavation drainage could cause erosion or scour at the location of the discharge outlet. Scour could cause mobilized sediment to migrate downstream and be deposited in the conveyance structures. Deposition resulting from the project could impact aquatic habitat and other beneficial uses of Lake Merritt and San Francisco Bay.

Information provided in a Phase I Environmental Site Assessment[31] (Phase I ESA) for the project site indicates that groundwater in the area may be contaminated and, if so, could be contained in the dewatering effluent which could result in significant environmental impacts at the discharge point and receiving waters of Lake Merritt and San Francisco Bay. The Phase I ESA recommends both soil and groundwater testing prior to project development (Please refer also to the Hazards section of this DEIR).

The applicant will need to file for coverage for dewatering effluent discharges under the CGP per COA SERV-1 and fully comply with the necessary permit, existing Regional Water Board dewatering

[31] Baseline Environmental Consulting, 2008. *Phase I Environmental Site Assessment, 19th Street Residential Condominium Project, 222 19th Street, Oakland, CA*. May 22.

permits (see below) or an individual dewatering permit. The CGP can cover discharges of dewatering effluent, so long as they do not contain a hazardous substance in excess of reportable quantities as established by the US EPA in 40 C.F.R. §§ 117.3 and 302.4.[32] Meeting these conditions allows dewatering effluent to be discharged to the stormdrain system.. In the event that specific contaminants are present in the groundwater effluent, and exemption allowing continued discharge under the CGP and a site-specific SWPPP, cannot be achieved, coverage for discharge of the effluent may be possible under one of two Regional General Permits:[33]

- NPDES General Permit for VOC (Volatile Organic Compound) Cleanups, Order No. R2-2004-0055, NPDES NO. CAG912003;
- NPDES General Permits for Fuel Cleanups, Order No. 01-100, NPDES No. CAG912002,

In addition, if the Regional Water Board deems that the proposed dewatering effluent discharge volume exceeds the amount that is considered appropriate under the General Permits, the Regional Water Board may require that an individual dewatering permit and waste discharge requirements be acquired. If required, such a permit would require the development of a plan to treat, control, and discharge dewatered effluent according to Regional Water Board requirements. An individual Report of Waste Discharge and application for NPDES permit authorization to discharge treated groundwater would be submitted to the Regional Water Board. The Water Board would establish effluent discharge and receiving water limitations to ensure there would be no significant impacts on water quality within receiving waters. A dewatering plan and a monitoring and reporting program would be developed and implemented by the project sponsor or its contractors as part of the permit requirements. Further details of the treatment process and discharge mechanisms would be at the discretion of the Regional Water Board. Furthermore, the project proponent must fully comply with the requirements of Municipal Code section 13.16.100 (Reduction of Pollutants in Stormwater).

Compliance with COA HYDRO-1, Grading Permit requirements, the NPDES CGP (or other required Permit) administered by the SWRCB or Regional Water Board, and the City of Oakland Municipal Code section 13.16.100[34] would be required. These programs, permits, and ordinances require that the proponent and/or its designated contractors mitigate potential construction-period water quality impacts for applicable projects. Compliance with existing regulations would result in this potentially significant impact being reduced to a less than significant level.

Operation Period Water Quality - Stormwater Runoff. As described above, the 31,830 square-foot project site is developed as a private garden with limited areas of paving and two small gardeners' buildings;[35] it is estimated that less than 2,000 square feet of the site is covered in impermeable surfaces.[36] The proposed project's subsurface garage has an area (footprint) of approximately 28,655 square feet (per floor) and at the surface, the base of the 42-story tower covers approximately 12,000 square feet. The remainder of the site would be dedicated to patios, walkways, a driveway,

[32] United States Environmental Protection Agency, 2009. *Substances Covered Under Reporting Requirements.* Website: www.epa.gov, accessed December 9, 2009.

[33] Tang, Lila, 2006. Chief of NPDES Division, RWQCB Region 2. Personal communication with Ralph Russell of Baseline Environmental Consulting. October 31.

[34] Oakland, City of, 1997. *Creek Protection, Storm Water Management and Discharge Control Ordinance*.

[35] Oakland, City of, 1985, op.cit.

[36] Baseline Environmental Consulting, 2006, op. cit.

and landscaping.[37] The roof of the topmost parking garage level would only be a few feet below grade level of the finished project.[38] The proposed development of the project site would be more intensive that the existing use and result in a gain of about 26,655 square feet in impervious surfaces (the difference between the current use and the impermeable footprint of the subsurface structures). As the underground garage footprint is larger than the aboveground structure, the area above the roof of the garage would provide opportunity areas for implementation of stormwater management features, such as permeable pavers with subdrains, and landscaping such as planters and other structures capable of providing stormwater filtration and detention.

The NPDES MRP, as implemented by the ACCWP (of which the City of Oakland is a co-permitee) is detailed in Regional Water Board Order R2-2009-00794, as amended. The NPDES program requires that any project creating 10,000 square feet or more of new impervious surface must 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. The project as proposed does not specifically identify BMPs to treat stormwater runoff prior to discharge; however, conceptual plans proposed for the project include *Green* or *Low Impact Design (LID)* features and techniques, such as stormwater harvesting for use as landscape irrigation and flush water for toilets, and permeable pavements in some areas.[39]

Runoff from the project site eventually enters Lake Merritt and San Francisco Bay; these are surface water bodies that are listed as impaired by the Regional Water Board. The Regional Water Board has designated Lake Merritt as impaired due to organic enrichment, low dissolved oxygen, and trash resulting from urban runoff and storm sewer effluent. San Francisco Bay is water quality impaired for several pesticides (chlordane, DDT, diazinon, and dieldrin), dioxin compounds, exotic species, furan compounds, mercury, PCBs, and selenium.[40] Most of the contaminants that have been identified as causing the water quality impairment of the Bay are unlikely to be used at the 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 project site. 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 increase the current loading rate of these compounds. It is possible the rate may be decreased due to implementation of the required BMPs of the stormwater pollution management plan (COA HYDRO-2). 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; increases in selenium loading would not be expected from the proposed project.

[37] ian birchall + associates, 2007, op. cit.

[38] ian birchall + associates, 2007. *19th Street Elevation, Sheet A3.01,* 222 19th Street Properties, Oakland CA., Job No. 0531. October 29.

[39] ian birchall + associates, 2008. *Emerald Views: Green Building Systems.* January 1.

[40] Regional Water Quality Control Board, 2007. 2006 CWA Section 303(d) List of Water Quality Limited Segment Requiring TMDLs. Approved by USEPA, June 28, 2007.

Under the proposed project, sources of urban pollutants, including spills and leaks associated with automobiles and trucks would be expected to increase. These sources could contribute petroleum hydrocarbons, heavy metals, and sediment to the pollutant load in runoff being transported to Lake Merritt and San Francisco Bay. Runoff from landscaped areas at the site could contain residual pesticides and nutrients. If there is a chance that the project could increase the load of any of these pollutants discharged to Lake Merritt and the San Francisco Bay, then a significant impact would be expected to occur (the Regional Water Board has determined that the assimilative capacity of the San Francisco Bay for these pollutants has already been exceeded). Untreated discharge from the site would likely contain elevated levels of urban pollutants and therefore could result in a significant impact to water quality. Implementation of required BMPs of the stormwater pollution management plan (COA HYDRO-2) would effectively limit the influx of organic materials and trash to the storm sewers and Lake Merritt.

The project proponent is required to prepare a design-level stormwater pollution management plan and must demonstrate through detailed hydraulic analysis that implementation of the proposed stormwater pollution management plan would result in treatment of the appropriate percentage of the runoff from the site (in compliance with the County NPDES permit). If the stormwater pollution management plan includes higher maintenance BMPs (e.g., sedimentation basins, hydrocarbon interceptors, and/or vortex-type separators) then funding for long-term maintenance needs must also be specified. The City would review the design-level stormwater pollution management plan to ensure compliance with the requirements, including features and operational BMPs to reduce potential impacts to surface water quality associated with operation of the project to the maximum extent practicable. The final design team for the project must incorporate as many concepts as practicable from *Start at the Source, Design Guidance Manual for Stormwater Quality Protection* published by the Bay Area Stormwater Management Agencies Association, and the California Stormwater Quality Association's *Stormwater Best Management Practice Handbook, Development and Redevelopment.*

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 (COA HYDRO-2), as detailed above, would ensure that this impact would be less than significant.

Operation-Period Water Quality Stormwater System Maintenance. The project proponents must establish a self-perpetuating drainage system operation and maintenance program to be managed by a homeowners association, project management company, or similar entity that includes annual inspections of bio-swales, sedimentation basins, drainage ditches, mechanical treatment systems, if any, and drainage inlets in compliance with the City's Maintenance Agreement for Stormwater Treatment Measures (COA HYDRO-3). An annual report, documenting the inspection and any removal action must be submitted to the City's Department of Public Works for review.

(2) Depletion of Groundwater Resources. The proposed project would remove groundwater during the construction phase as part of the dewatering activities for foundation construction. The site-specific preliminary geotechnical report recommends the installation of underground cutoff walls to minimize the drawdown of the watertable away from the site. After the construction phase, groundwater extraction would be minimal, as the basement levels would be waterproofed, and allow

minimal seepage.[41] In addition, the site is served by local water utility services, use of the existing well would be terminated and the well properly abandoned, 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 would not significantly impact the local or regional use or availability of groundwater.

(3) Erosion. The project site is largely covered with pervious surface (garden). Currently, most of the rainfall at the site encounters the pervious surfaces and, if necessary, travels by sheetflow to collectors set into the lawn area 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 could result in mobilization of soil and sediment, and the resulting sediments 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 requires that a project proponent prepare a Grading, Erosion and Sedimentation Control plan for a 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 5 feet.

The required plans must 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. The grading plan must address existing, temporary, and final drainage facilities. Erosion and sediment control must combine interim and permanent measures to minimize erosion, storm water runoff, and sedimentation. The plans must specify that, after construction is complete, the project applicant must ensure that the storm drain system be inspected and that the project applicant clears the system of any debris or sediment.

Compliance with City's Erosion and Sedimentation Control Plan Standard Condition of Approval (COA HYDRO-1) and Grading Permit requirement would ensure less-than-significant erosion impacts.

(4) Flood-related Hazards. According to the most recent FEMA mapping, the project site is not located within the 100- or 500-year flood hazard zone, and therefore, would not contribute substantial flooding on- or off-site (see Stormwater Systems discussion, below). The project site is not located within a mapped dam failure inundation zone.

(5) Exceed Existing or Planned Stormwater Systems. As noted above, the proposed development of the project site would be more intensive than the existing use and result in a gain of about 26,655 square feet in impervious surfaces.[42] An increase in impervious cover is typically associated with increased runoff rates and velocities. As the underground garage footprint is larger than the aboveground structure, the area above the roof of the garage would provide opportunity areas for implementation of stormwater management features, such as permeable pavers with subdrains, and

[41] Treadwell & Rollo, 2006, op. cit.

[42] ian birchall + associates, 2007, op. cit.

landscaping such as planters and other structures capable of providing stormwater filtration and detention. However, if not properly managed, the increased runoff may exceed the capacity of the existing drainage network downstream. Alteration of drainage patterns could result in localized flooding if stormwater conveyance structures are undersized.

Prior to approval of the proposed project, the project proponents would be required to retain a qualified engineer to prepare a hydrology and stormwater pollution management plan for the development in accordance with the requirements of the City of Oakland. The report must demonstrate that drainage from the proposed project would not exceed the capacity of the downstream drainage system. The grading and stormwater pollution management plan plans must be reviewed for compliance with these requirements by the City's Community and Economic Development Agency, Building Services Division, Engineering Permit Department. Any improvements to the storm drainage system deemed necessary by the City of Oakland, including construction of or improvements to stormwater conveyances, must be part of the conditions of approval for development on the site. Compliance with the City's Standard Stormwater and Sewer Condition of Approval (COA HYDRO-4) would require the proponent to participate in the necessary stormwater and sanitary sewer infrastructure improvements to accommodate the proposed project and would ensure a less-than-significant impact to the stormwater system.

The proposed project includes plans for a green roof that would collect rain water and reuse it for irrigation of landscaping on the roof and around the building if feasible. Implementation of the green roof would also further reduce any less-than-significant stormwater impacts.

(6) Hydromodification. Hydromodification is defined as the alteration of the hydrologic characteristics of coastal and non-coastal waters, which in turn could cause degradation of water resources. A site-specific Hydromodification Plan (HMP) would not be required for the proposed project, as the project is: 1) less than one-acre, 2) in a highly urbanized area; and, 3) is serviced by hardened enclosed stormwater conduits. The potential degradation of water resources related to hydromodification would be less than significant.

(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 increase by about 26,655 square feet. However, no waterways cross the project site and the project would not alter the course of an established stream or river.

(8) Flood-related Hazards. According to the most recent FEMA mapping, the project site 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. The project as proposed would not impede or redirect flood flows, or expose people or structures to substantial risk of loss, injury or death from flooding.

(9) Coastal Hazards, including Seiche.[43] Detailed tidal records for San Francisco Bay have been maintained for approximately 100 years, and during that time, a damaging seiche has not occurred. A seiche of approximately four inches occurred during the M 8.3 1906 earthquake. It is

[43] 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.

unlikely that the Bay Area will experience a larger earthquake than the 1906 event, and therefore a seiche larger than four inches is considered unlikely to occur. The location of the project site near the shore of Lake Merritt, which is connected to San Francisco Bay, creates a potential for the proposed project to be affected by coastal flooding hazards, including tsunami, extreme high tides, and sea level rise. However, the elevation of the project site, greater than 15 feet NGVD, and the restricted hydraulic connection with the Bay, would be expected to provide adequate protection from tsunamis, extreme high tides, and sea level rise, all of which tend to present hazards for sites at elevations lower than ten feet NGVD.[44,45,46,47] The project site is unlikely to be subject to inundation due to coastal hazards or seiche; therefore, impacts related to coastal hazards or seiche would be less than significant.

(10) Conflict with the City of Oakland Creek Ordinance. The proposed project is not a creek-side property and would not contribute to the degradation of a creek. Compliance with the Erosion and Sedimentation Control Plan requirements (COA HYDRO-1) and Post-Construction Stormwater Pollution Management Plan (COA HYDRO-2) would minimize or eliminate impacts related to stormwater runoff.

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. Through the adherence to these requirements, only the following single potential significant impact related to hydrology or water quality would result from the proposed project.

Impact HYD-1: Water supply well(s) at the project site, if not properly managed or decommissioned, could be damaged during construction, potentially allowing impacts to groundwater quality. (S)

The project sponsor has proposed that the existing water supply well on the project site be abandoned as part of the proposed project. If the existing well was not fitted with an effective sanitary seal when constructed, or if the seal has been damaged since installation or were to be damaged during grading and construction of the project, surface water (potentially containing pollutants) could seep into the well and the underlying aquifer, causing water quality degradation. There are no indications of other active or improperly abandoned wells at the project site; however, due to the lengthy history of use of the project site, it is possible that a forgotten abandoned or capped domestic well may exist and be discovered during grading of the site.

Mitigation Measure HYD-1: The existing water supply well on the project site, and other well(s) if discovered, shall be properly abandoned and the case closed in compliance with the California Department of Water Resources California Well Standards, and Alameda County

[44] Houston, J. R., A. W. Garcia, 1975. *Type 16 Flood Insurance Study: Tsunami Predictions for Monterey and San Francisco Bays and Puget Sound*, Technical Report H-75-17, November.

[45] Ritter, J., W. Dupre, 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.

[46] United States Army Corps of Engineers, 1984. *San Francisco Bay Tidal Stage vs. Frequency Study*, October.

[47] United States Environmental Protection Agency, 1995. *The Probability of Sea Level Rise*, EPA 230-R-95-008, October.

Environmental Health Department requirements and shall be submitted to the Building Services Division and Planning and Zoning Division prior to final approval of the grading plan. (LTS)

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 where storm sewers discharge to Lake Merritt and from there to the San Francisco Bay. The storm-water contains urban-type pollutants from past 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 requirements imposed and enforced by the State Water Resources Control Board and Regional Water Boards through the NPDES permitting process. These requirements have resulted in polices and regulations, incrementally strengthened by a series of amendments and adopted by Regional Water Board Orders, mandating greater levels of protection to water quality for past and current projects. Future projects, including the proposed project would continue to discharge storm-water 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 that would be designed to further reduce pollutant loading in the stormwater runoff. Therefore, compared to past and current conditions, stormwater runoff quality would be expected to cumulatively improve over time.

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L. PUBLIC HEALTH AND HAZARDS

This section provides an overview of the potential presence of hazardous materials[1] and other public health hazards on and near the project site and assesses potential impacts to public health and safety and the environment that could result from the development of the project.

1. Setting

The following section describes existing hazardous materials issues at and near the project site as well as the regulatory agency framework and local policies that address those hazards.

a. Potential Sources of Hazardous Materials at and near the Project Site. Potential hazardous materials issues at the project site were evaluated in a Phase I Environmental Site Assessment, conducted in May 2008.[2] The scope of the Phase I investigation included a site reconnaissance to visually check for hazardous materials use and contamination, a review of historical land use information and available historical reports, a review of regulatory agency databases regarding hazardous materials use and release, and an interview with the project site owner regarding current and historical land uses at the site.

The historical land use information indicated that the project site was developed for residential use during the late 1800s. By 1903, the project site had been redeveloped into an English ornamental, garden for a larger residential property, known as the Schilling Estate.[3] Although several modifications took place at the project site from 1903 through the 1950s, the land use on the project site has remained an English garden up to the present time.

The Phase I investigation identified three potential sources of hazardous materials at and near the project site:

(1) Horticultural Chemical Residues in Project Site Soils. The use of the project site as an English garden since the early 1900s may have involved the use of horticultural chemicals such as insecticides, pesticides, herbicides, fertilizers, and/or fungicides. Most horticultural chemicals in use today have short persistence, and quickly degrade into less harmful compounds. However, some classes of horticultural chemicals commonly used in the past contained persistent organic (e.g., organochlorine pesticides) and inorganic (e.g., heavy metals such as mercury, copper, lead, and arsenic) compounds that could remain in shallow soils for many decades. If these classes of horticultural chemicals were used at the project site, harmful chemical residues could still be present in shallow soils.

[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] Baseline Environmental Consulting, 2008. *Phase I Environmental Site Assessment, 19th Street Residential Condominium Project, 222 19th Street, Oakland, California*. May 22.

[3] Ibid.

(2) Petroleum Release Sites near the Project Site. The regulatory database report reviewed for the Phase I investigation identified two active petroleum release sites within one-quarter mile of the project site. Data available from the active sites indicated that the releases of petroleum have affected groundwater at and near the release sites.[4] Both of the active release sites are located upgradient of the project site.

(3) Asbestos and Lead in Building Materials. In addition to an English garden, the project site also contains a garden shed and greenhouse, which were first noted in land use records from 1958.[5] The construction of the project would require removal of the garden shed and greenhouse, which may contain lead and/or asbestos in building materials based on the ages of the buildings. Prior to 1978, lead compounds were commonly used in interior and exterior paints, while asbestos fibers were often used in building materials for its strength and fire resistant properties until around 1980.

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. Fluorescent lighting tubes and ballasts and computer displays are regulated as "universal wastes" by the State of California.[6] Universal waste regulations allow common, low-hazard wastes to be managed under less stringent requirements than other hazardous wastes. 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.

(4) Airspace. The proposed structure, including antennae mast, would reach a height of approximately 530 feet above the ground surface, or approximately 552 feet National Geodetic Vertical Datum (NGVD).[7] The project site is located approximately five miles north of the nearest active airport, the Oakland International Airport. The former Naval Air Station at Alameda is approximately 2.5 miles distant; however, operations ceased and the base was closed in 1997.[8] There are two Federal Aviation Administration (FAA) registered private heliports located in the project vicinity; the rooftop Oakland Convention Center Heliport at 10th Street and Broadway approximately 0.53 miles to the southwest, and atop the Alameda County Parking Garage located at 165 13th Street, approximately 0.35 miles to the south.[9]

b. 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

[4] Ibid.

[5] Ibid.

[6] Title 22, California Code of Regulations, Section 66273 contains standards for management of universal wastes.

[7] The National Geodetic Vertical Datum (NGVD) is, for most practical purposes, equivalent to mean sea level.

[8] Department of the Navy, 2009. *Base Realignment and Closure Plans, Former Naval Air Station Alameda.* Website: www.bracpmo.navy.mil, accessed December 8, 2009.

[9] City-Data.com, 2009. FAA Registered Airports and Heliports in Oakland, California. Website: www.city-data.com, accessed December 8, 2009.

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 (SWRCB), the California Air Resources Board (CARB), and other agencies. The San Francisco Bay Regional Water Quality Control Board (RWQCB), the Bay Area Air Quality Management District (BAAQMD), Alameda County Department of Environmental Health (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 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 Agencies. Three State agencies, described below, regulate hazardous materials and wastes 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 SWRCB 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 SWRCB also enforces the Porter-Cologne Water Quality Act of 1969 through its nine regional boards, including the RWQCB, 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 wastes on the site.

San Francisco Bay Regional Water Quality Control Board. The project site is located within the jurisdiction of RWQCB. The RWQCB provides for protection of State waters in accordance with the Porter-Cologne Water Quality Act of 1969. RWQCB 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 are 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.[10]

(4) 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, RWQCB, and ACDEH) to facilitate the cleanup and redevelopment of contaminated properties in Oakland. The program is coordinated by the City and specific to Oakland sites. The ULR Program clarifies environmental investigation requirements, and establishes Oakland-specific, risk-based corrective action (RBCA) standards for qualifying sites.[11] RBCA standards are criteria that, when met, adequately address risk posed by contamination to human health.

(5) 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 (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

[10] Oakland, City of, 2004. *General Plan, Safety Element, Fire Hazards (Chapter 4).* November.

[11] Oakland, City of, 2000. *Urban Land Redevelopment Program, Guidance Document, Oakland RBCA Program,* January 1.

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.

(6) 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[12] contains the following policy statements and action items relevant to hazards, 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.
    - Action HM-1.2: Continue to enforce provisions under the zoning ordinance regulating the location of facilities which use or store hazardous materials.
    - Action HM-1.3: Consider adopting a health and safety protection overlay zone or set of procedures to ensure that new activities which use or store hazardous materials on a regular basis near residential zones do not endanger public health or the environment.
    - Action HM-1.5: Continue to implement the City's household hazardous waste element (including educating residents about waste-disposal options and the consequences of illegal disposal) in order to reduce the generation of household hazardous waste and the amount of such waste that is disposed of inappropriately.
    - Action HM-1.6: Through the Urban Land Redevelopment program, and along with other participating agencies, continue to assist developers in the environmental cleanup of contaminated properties.

The following policy statement and action item from the Safety Element of the City of Oakland General Plan[13] addresses public safety and may be applicable to 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.
    - Action PS-1.2: Maintain and update as necessary the Oakland Standardized Emergency Management System Plan.

The following policy statement from the Open Space, Conservation and Recreation (OSCAR) Element of the General Plan[14] 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.

[12] Oakland, City of, 2004. *General Plan, Safety Element, Hazardous Materials (Chapter 5)*. November.

[13] Oakland, City of, 2004. *General Plan, Safety Element, Public Safety (Chapter 2)*. November.

[14] Oakland, City of, 2004. *General Plan, Safety Element, Appendix A*. November.

- 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.

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 described above.

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.

COA HAZ-1: Hazards Best Management Practices. *Prior to commencement of demolition, grading, or construction.* The project applicant and construction contractor shall ensure that construction of Best Management Practices (BMPs) are implemented as part of construction to minimize the potential negative effects to groundwater and soils. These shall include the following:

- Follow manufacturer's recommendations on use, storage, and disposal of chemical products used in construction;
- Avoid overtopping construction equipment fuel gas tanks;
- During routine maintenance of construction equipment, properly contain and remove grease and oils;
- Properly dispose of discarded containers of fuels and other chemicals.
- 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 USTs, elevator shafts, clarifiers, and subsurface hydraulic lifts when on-site demolition, or construction activities would potentially affect a particular development or building.
- 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, 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 (Same as COA AIR-2): Asbestos Removal in Structures. *Prior to issuance of a demolition permit.* If asbestos-containing materials (ACM) are found to be present in building materials to be removed, demolition and disposal, the project applicant shall submit specifications signed by a certified asbestos consultant for the removal, encapsulation, or enclosure of the identified ACM in accordance with all applicable laws and regulations, including but not necessarily limited to: California Code of Regulations; Title 8, Business and Professions Code; Division 3; California Health & Safety Code 25915-25919.7; and Bay Area Air Quality Management District, Regulation 11, Rule 2, as may be amended.

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. The applicant shall implement the approved recommendations.

COA HAZ-4: Lead-Based Paint/Coatings, Asbestos, or PCB Occurrence Assessment. *Prior to issuance of any demolition, grading or building permit.* The project applicant shall submit a comprehensive assessment report to the Fire Prevention Bureau, Hazardous Materials Unit, signed by a qualified environmental professional, documenting the presence or lack thereof of asbestos-containing materials (ACM), lead-based paint, and any other building materials or stored materials classified as hazardous waste by State or federal law for review and approval.

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:

- 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.
- Obtain and submit written evidence of approval for any remedial action if required by a local, State, or federal environmental regulatory agency.
- 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 any demolition, grading or building permit.* If lead-based paint is present, the project applicant shall submit specifications to the Fire Prevention Bureau, Hazardous Materials Unit signed by a certified Lead Supervisor, Project Monitor, or Project Designer for the stabilization and/or removal of the identified lead paint in accordance with all applicable laws and regulations, including but not necessarily limited to: Cal/OSHA's Construction Lead Standard, 8 CCR1532.1 and DHS regulation 17 CCR Sections 35001 through 36100, as may be amended.

COA HAZ-7: Other Materials Classified as Hazardous Waste. *Prior to issuance of any demolition, grading or building permit.* If other materials classified as hazardous waste by State or federal law are present, the project applicant shall submit written confirmation to Fire Prevention Bureau, Hazardous Materials Unit that all State and federal laws and regulations shall be followed when profiling, handling, treating, transporting and/or disposing of such materials.

COA HAZ-8: Health and Safety Plan per Assessment. *Prior to issuance of any demolition, grading or building permit.* If the required lead-based paint/coatings, asbestos, or PCB assessment finds presence of such materials, the project applicant shall create and implement a health and safety plan to protect workers from risks associated with hazardous materials during demolition, renovation of affected structures, and transport and disposal. The applicant shall implement the approved plan.

Airspace. Airspace in California is regulated by both the FAA and the Caltrans Aeronautics Division.

(1) Federal. Airspace in the United States is regulated by the FAA for the purpose of ensuring the safety of air navigation and the efficient use of navigable airspace by aircraft. The FAA's authority to promote the safe and efficient use of navigable airspace, whether concerning existing or

proposed structures, is predominately derived from Title 14, United States Code, Section 44718. Section 44718 does not provide specific authority for the FAA to regulate or control how land (real property) may be used.

Title 14 CFR Part 77, entitled "Objects Affecting Navigable Airspace", was adopted to establish standards for proposed construction or alteration that would protect aircraft from encountering unexpected structures. The FAA uses the standards established in Federal Aviation Regulation (FAR) Part 77 and other federal regulations, including the United States Standard for Terminal Instrument Procedures (TERPS), to assess the aeronautical affect of a proposed structure on the use of navigable airspace. The standards established by FAR Part 77 are for assessing the impact of structures to aircraft operating under Visual Flight Rules (VFR) conditions. Conversely, TERPS is used to assess the impacts of structures to aircraft operating under Instrument Flight Rules (IFR) conditions.

All projects within the United States, regardless of proximity to an airport, that propose to exceed 200 feet in height from the ground surface are required to apply for the FAA to conduct an obstruction evaluation study. The FAA will begin an evaluation of a proposed structure, such as the proposed project, upon the receipt of a FAA Form 7460, "Notice of Proposed Construction or Alteration." Form 7460 provides the information necessary for the FAA to conduct the obstruction evaluation study. Under FAR Part 77.13 (a)(1), a notice is required for any proposed construction or alteration that would be more then 200 feet in height above ground level.

(2) State. In addition to the FAA review, the California Department of Transportation, Division of Aeronautics reviews proposals for structures in the State of California in accordance with Public Utilities Code Sections 21655 through 21660. These sections specify that structures which extend more than 500 feet above the ground require a permit from the Department, unless the FAA has determined that the structure would not constitute a hazard to air navigation or would not create an unsafe condition for air navigation. The Public Utilities Code uses the FAA's rules and regulations, including FAR Part 77, to assess whether a structure is an obstruction or hazard to air navigation.

2. Impacts and Mitigation Measures

This section discusses potential impacts to public health that could result from implementation of the proposed project. The section begins with the significance criteria, which establish the thresholds used to determine whether an impact is significant.[15] The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as appropriate.

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;

[15] Oakland, City of, 2008. CEQA Thresholds/Criteria of Significance Guidelines, p. 5. May 13.

- 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; or
- 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 Public Health and Hazard Impacts. Less-than-significant impacts related to public health and hazards are discussed below.

(1) Routine Transport, Use, or Disposal of Hazardous Materials. Following project development, the residential condominium would be expected to store and use small quantities of common hazardous materials (e.g. paint and cleaning solutions) that would be used for routine cleaning and maintenance of the facility. The amount of hazardous materials that is anticipated to be stored and used in the facility would be considered insufficient to create a significant safety hazard (e.g. fire and/or explosion) to the public, or otherwise pose a significant risk to human health or the environment. In addition, the project applicant has indicated that they will use low VOC (volatile organic compound) materials, as feasible. Operation of the residential condominium would not involve routine disposal of substantial quantities of hazardous materials. Therefore, the potential impact associated with routine storage and use of hazardous materials would be less than significant.

(2) Accidental Release of Hazardous Materials. Consistent with COA HAZ-1, the project applicant and construction contractor shall ensure that construction best management practices are implemented. The construction of the proposed project would require demolition of the garden shed and greenhouse, which could potentially release lead and/or asbestos in building materials into the atmosphere and adversely affect the health of construction workers and/or the neighboring public. Prior to construction of the project, a lead-based paint and asbestos-containing material survey would be performed at the garden shed and greenhouse by a qualified environmental professional in accordance with the City's Standard Condition of Approval (see COA HAZ-4). Based on the findings of the survey, all identified lead-based paint and asbestos will be abated by a certified contractor in accordance with local, State, and federal requirements, including the requirements of the BAAQMD 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 COA HAZ-2, COA HAZ-6, COA HAZ-7, and COA HAZ-8. 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.

In addition to lead and asbestos, construction of the proposed project could potentially result in the accidental release of project site soils potentially containing harmful horticultural chemical residues. The Phase I investigation identified the potential for horticultural chemical residues to be present in project site soils since the project site was used as a garden since the early 1900s. The construction of the proposed project would require excavation of soils, which could potentially expose construction workers or the public to harmful chemical residues in soil, if present. The Phase I investigation recommended a soil investigation to determine whether horticultural chemical residues are present in project site soils at levels that could pose a threat to human health or the environment. Based on the soil analytical results, the soil investigation report would provide recommendations regarding proper management of soils and potential impact on construction worker health and safety in accordance with COA HAZ-3. If remediation is recommended, such as removal of shallow soils affected by horticultural chemicals, it would be conducted under regulatory agency oversight, in accordance with COA HAZ-5. With the implementation of the recommendation of the Phase I investigation and compliance with applicable local, State, and federal laws and regulations, the potential impact associated with the presence of horticultural chemical residues in project soils would be reduced to a less-than-significant level.

Development of the proposed project may also be affected by groundwater contamination from nearby petroleum release sites. The Phase I investigation identified two active petroleum release sites within one-quarter mile of the proposed project, where investigation and remediation has not yet been completed. The Phase I report concluded that contamination from these sites could potentially migrate via groundwater and affect the project site through groundwater dewatering required during construction of the project. The Phase I report recommended a groundwater investigation at the project site to evaluate potential impacts from contaminated groundwater. The groundwater investigation would include recommendations for further action, in accordance with COA HAZ-3. If those recommendations included remedial action, such as treatment of dewatered groundwater prior to disposal or limits on the rate of pumping of groundwater to minimize migration of contaminants from nearby sites, those remedial actions would be conducted under regulatory agency oversight, in accordance with COA HAZ-5. With the implementation of the recommendations of the Phase I and compliance with applicable local, State, and federal laws and regulations, the potential impact associated with nearby petroleum release sites would be reduced to a less-than-significant level.

(3) School Sites. There were no existing or proposed school facilities identified within one-quarter mile distance from the project site.

(4) Airport/Airfield Hazards. The project is located far enough away from Oakland International Airport that it would not restrict the clear view of runways, helipads, taxiways, or traffic patterns at or around the airport from the control tower. The TERPS surface elevation associated with the existing IFR departure procedures is approximately 660 feet in the project vicinity, and the proposed building at 552 feet NGVD would not penetrate the TERPS surface. The project location places the project site outside the airspace associated with FAR Part 77 VFR surfaces.[16] In addition, the project site is located outside the 20,000 foot radius of the Oakland International Airport Height Referral Area.[17] The proposed project would not be expected to interfere with aircraft operations out

[16] Polston, Joshua, 2009. Aviation Project Manager, Oakland International Airport. Private communication with Baseline Environmental Consulting, December 8.

[17] Horvath, Cindy, 2009. Senior Transportation Manager, Airport Land Use Commission, Alameda County. Private communication with Baseline Environmental Consulting, December 8.

of Oakland International Airport. Note that all projects anywhere in the United States, including this project, that propose a height in excess of 200 feet above ground level are subject to FAR Part 77 criteria related to structure heights, and must file FAA Form 7460 with the FAA.[18] The project is not expected to interfere with operation of nearby private-use heliports in Oakland as those facilities are located more than a third of a mile from the project site and operate under visual flight regulations.

(5) 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. The nearest designated evacuation routes to the project site are Harrison Street and Lakeside Drive.[19] 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. See Section IV.N, Public Services and Recreation for additional discussion on police and fire services.

(6) Wildland Fire Hazards. The project site is not in or adjacent to an area mapped as containing a wildland fire hazard[20] and is not located within the City of Oakland Wildfire Prevention Assessment District area of wildfire hazard areas.[21] Therefore, fire hazards would be less than significant.

c. Potentially Significant Public Health and Hazards Impacts. Based on the analysis in section b, above, development of the proposed project would not result in any potentially significant impacts related to public health and hazards.

d. Cumulative Impacts. Based on the analysis in section b, above, compliance with existing local, State, and federal hazardous materials laws and regulations as well as City COAs, would keep the proposed project's potential impact associated with hazards and hazardous materials to a less-than-significant level. No known or potential hazardous materials sites in the project area or vicinity have been identified that would be additive to the potential impacts evaluated in this section. In addition, any future development in the project vicinity would be subject to these same laws, regulations and COAs. Therefore, development of the proposed project would not be expected to create a significant cumulative impact to public health and safety and the environment.

[18] Port of Oakland, 2007. *When Do I Need to File an FAA Form 7460-I? Objects Affecting Navigable Airspace* (14CFR77), Aviation Planning and Development. November.

[19] Oakland, City of, 2004. *General Plan Safety Element, Figure 7.2, Safety Hazards Map of Central Oakland.*

[20] California Department of Forestry and Fire Protection, 2000. *Alameda County Natural Hazards Disclosure (Fire), Map ID NHD-01*, January 6.

[21] Oakland, City of, 2006. Fire Department, Fire Prevention Bureau, *Annual Vegetation Management Plan for the Wildfire Prevention Assessment District – 2006.* April 6.

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M. UTILITIES AND INFRASTRUCTURE

This section describes major utilities and infrastructure serving the project area and evaluates the effects of the proposed project on existing utilities and infrastructure. Potential impacts to infrastructure and utilities that would result from implementation of the proposed project are identified, and mitigation measures are recommended, as appropriate.

1. Setting

This analysis examines the following infrastructure and utility systems: water supply; wastewater treatment and collection; solid waste; natural gas and electricity; and telecommunications. Stormwater is discussed in Section IV.K, Hydrology and Water Quality.

a. Water. The following discussion provides background information on the City's water supplies, treatment facilities, and distribution system.

(1) Water Supply. The East Bay Municipal Utility District (EBMUD) provides potable water to the project site, the City of Oakland, and approximately 1.35 million people throughout portions of Alameda and Contra Costa Counties. EBMUD obtains approximately 90 percent of its water from the Mokelumne River, 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.[1] 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.

According to the 2005 EBMUD *Urban Water Management Plan*, 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. Average daily water demand within the EBMUD service area was 215 mgd in 2006.[2] 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.[3]

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 divert up to 100 mgd of water from the Sacramento River to be delivered to EBMUD customers. Implementation of this and other water supply projects would reduce the potential for severe water rationing and associated economic losses during drought periods.

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. 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.

[1] East Bay Municipal Utility District, 2005. *Urban Water Management Plan 2005*. September.

[2] East Bay Municipal Utility District, 2007. *Water Conservation/Water Recycling Annual Report 2007*.

[3] East Bay Municipal Utility District, 2005. op. cit.

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 Recycled Water Project will supply up to 2.5 mgd of recycled water to portions of Alameda, Albany, Berkeley, Emeryville, and Oakland.

In May 2008, EBMUD's Board of Directors approved a drought program that seeks to reduce overall water usage by 15 percent. The drought program requires single family homes to cut back on their water usage by 19 percent, and multi-family residential units to cut their usage by 11 percent.[4] In addition, the drought program includes a 10 percent rate increase for residences. Customers who reduce water usage by less than 10 percent face a $2.00 surcharge for every 784 gallons they use beyond their allotment. Customers that already use less than 100 gallons a day are exempt from the surcharges and the 10 percent rate increase.[5]

(2) Water Treatment Facilities. There are six water treatment plants in the EBMUD water supply and distribution system. The six plants have a combined treatment capacity of over 375 mgd. The Orinda Water Treatment Plant, which supplies water to portions of Oakland, including the project area, has a peak treatment capacity of 200 mgd and is currently operating at approximately 70 percent capacity. At the Orinda Water Treatment Plant, water is subjected to coagulation, filtration, and disinfection prior to being distributed to the public. In 2006, the Orinda Plant was the fifth water treatment plant in the country to successfully complete the American Water Works Association's four phases of the Partnerships for Safe Water Program and to receive the Excellence in Water Treatment Award.

(3) Water Distribution Systems. The project site is located within EBMUD's 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. EBMUD owns and operates distribution pipelines under all of the streets within the vicinity of the project area. 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.

EBMUD owns and maintains a 12-inch water main in 19th Street, an 8-inch water main in Alice Street, and a 12-inch water main in Jackson Street on the south side of 19th Street. Water for the proposed project would be provided by EBMUD's existing water supply infrastructure and supply.[6] These lines, and associated minor water line connections, are anticipated to have an available capacity of over 5,000 gallons per minute (gpm). The Oakland Fire Department maintains minimum fire flow standards for pipelines serving residential and commercial uses, which are discussed in Chapter IV.N, Public Services and Recreation.

[4] East Bay Municipal Utilities District, 2008. *Water Use Restrictions and Reduction Goals.* Website: www.ebmud.com/drought/restrictions.html. July 18.

[5] East Bay Municipal Utilities District, 2008. Drought Rate Information. Website: www.ebmud.com/drought/rates.html. July 18.

[6] Rehnstrom, David, 2008. Senior Civil Engineer, Water Service Planning, East Bay Municipal Water District. Written communication with LSA Associates, Inc., January 15.

b. Wastewater System. The following discussion provides background information on wastewater treatment facilities and collection systems serving the City, including the project area.

(1) Wastewater Treatment Facility. Wastewater collected by interceptors in the EBMUD service area flows to the Main Wastewater Treatment Plant (MWWTP), which is located in Oakland near the eastern entrance of the San Francisco-Oakland Bay Bridge. 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 flow into the MWWTP is approximately 80 mgd, representing 48 percent of the plant's secondary treatment capacity.[7] EBMUD also operates three wet weather treatment facilities that are used to store and manage flows during wet weather events. Treated effluent is disinfected, dechlorinated, and discharged through a deep-water outfall one mile off the East Bay shoreline into San Francisco Bay.

(2) Wastewater Collection System. The City owns and maintains the sewer collection system within Oakland, including the project area. Sewer discharge from buildings flows through lateral lines to the City's sewer network system. The minimum diameter size of building sewer lateral lines is 4 inches. Currently, the City operates and maintains approximately 1,000 miles of sewer lines and seven pump stations. The sewer network is connected directly to trunk lines that convey flows to EBMUD wastewater interceptors and finally to the MWWTP located in West Oakland. EBMUD wastewater interceptors consist of 29 miles of reinforced concrete pipes ranging from 1 to 9 feet in diameter. 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 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.

The project site is situated in Sub-basin 52-13. Existing sewer lines in the project vicinity consist of a 12-inch line that runs below the centerline of 19th Street, which expands into a 14-inch line west of Alice Street. The 14-inch line continues north beneath Harrison Street. From this sewer line along Harrison Street, a diverted 6-inch line runs perpendicular beneath Snow Park and another 12-inch line diverts diagonally from the intersection of Harrison Street and Lakeside Drive.

c. 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 Center in San Leandro (Transfer Center). The Transfer Center, which has a maximum allowable

[7] East Bay Municipal Utility District, 2009. Waste Water Treatment. Website: www.ebmud.com/wastewater/treatment/. February 17.

capacity of 5,600 tons of waste per day, received an average of 3,028 tons per day in 2003.[8] 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 Altamount Landfill in eastern Alameda County. The landfill comprises approximately 2,170 acres (480 acres of permitted landfill area) and is anticipated to have sufficient capacity to operate until at least 2031, and the potential to operate through 2071.[9]

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 52 percent of its waste in 2000.[10] 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, existing diversion programs, 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.[11]

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. In addition, the City picks up yard trimmings and food scraps, including leaves, flowers, fruits, vegetables, meats, eggshells, and paper products.[12] Compostable materials are also delivered to the Davis Street Transfer Center.

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) 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 50 percent or more. The City will not approve a building permit for a project until the WRRP is approved.

d. Natural Gas and Electricity. 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.

[8] Alameda County Waste Management Authority, 2003. *Alameda County Integrated Waste Management Plan.* February 26.

[9] Ibid.

[10] California Integrated Waste Management Board, 2005. Waste Stream Information Profiles. Website: www.ciwmb.ca.gov/profiles/.

[11] Ibid.

[12] Oakland, City of, 2009. *Green Cart – Yard Trimmings*. Website: www.oaklandpw.com/Page298.aspx. March 25.

Local electric and gas distribution lines are located within the project site. 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.

e. Telecommunications. AT&T (formerly SBC Communications) provides residential and commercial telephone service within Downtown Oakland and the project site. AT&T also provides or hosts a variety of other telecommunications services, including Digital Subscriber Lines (DSL), Internet Service Provider (ISP), web hosting, virtual private networking, and wireless/cellular and paging services.

The California Public Utilities Commission requires that AT&T anticipate and serve new growth. To meet this requirement, AT&T continually upgrades its facilities and infrastructure, adding new facilities and technology to remain in conformance with California Public Utilities Commission tariffs and regulations and to serve customer demand in the City.

Additions to the City's infrastructure and proposals for development would result in a need for expansion or changes to AT&T's infrastructure, which would involve suitable siting for equipment placement. Suitable sites must meet requirements for the physical transmission of telecommunication services and conform to the City's guidelines. AT&T also works with the City to ensure that construction of new facilities does not interfere with any new or newly-paved streets.

f. Regulatory Setting. The following describes the regulatory setting as it relates to utilities and infrastructure.

(1) Water Conservation in Landscaping Act (Assembly Bill 1881, 2006). The Water Conservation in Landscaping Act of 2006 (Assembly Bill 1881, Laird) requires cities, counties, and charter cities and charter counties, to adopt landscape water conservation ordinances by January 1, 2010. Pursuant to this law, the Department of Water Resources (DWR) has prepared a Model Water Efficient Landscape Ordinance (Model Ordinance) for use by local agencies. Most new and rehabilitated landscapes are subject to a water efficient landscape ordinance. Public landscapes and private development projects including developer installed single family and multi-family residential landscapes with at least 2,500 square feet of landscape area are subject to the Model Ordinance. Homeowner provided landscaping at single family and multi-family homes is subject to the Model Ordinance if the landscape area is at least 5,000 square feet. However, the ordinance does not apply to registered local, state or federal historic sites; ecological restoration projects; mined-land reclamation projects; or plant collections.

(2) 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 underground 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.

(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.

COA UTIL-1: Required Landscape Plan for New Construction and Certain Additions to Residential Facilities. *Prior to issuance of a building permit.* Submittal and approval of a landscape plan for the entire site is required for the establishment of a new residential unit (excluding secondary units of five hundred (500) square feet or less), and for additions to Residential Facilities of over five hundred (500) square feet. The landscape plan and the plant materials installed pursuant to the approved plan shall conform with all provisions of Chapter 17.124 of the Oakland Planning Code, including the following:

a) Landscape plan shall include a detailed planting schedule showing the proposed location, sizes, quantities, and specific common botanical names of plant species.

b) Landscape plan shall incorporate landscaping practices considered pest-resistant, fire-resistant, and drought-tolerant.

c) All landscape plans shall show proposed methods of irrigation. The methods shall ensure adequate irrigation of all plant materials for at least one growing season.

To further implement Standard Condition of Approval UTIL-1:

- The landscape plan shall incorporate Mitigation Measure CULT-1b, -1c, and 1d and shall be reviewed by a wind consultant; street trees shall be replaced pursuant to COA BIO-3, and the plan shall describe the storage and transplant procedures of the existing trees from the garden to ensure maximum survivability during construction. Furthermore, the green roof shall be reviewed by a qualified ornithologist so as to avoid creating bird friendly habitat.

COA UTIL-2: Underground Utilities. *Prior to issuance of a building permit.* The project applicant shall submit plans for review and approval by the Building Services Division and the Public Works Agency, and other relevant agencies as appropriate, that show all new electric and telephone facilities; fire alarm conduits; street light wiring; and other wiring, conduits, and similar facilities placed underground. The new facilities shall be placed underground along the project applicant's street frontage and from the project applicant's structures to the point of service. The plans shall show all electric, telephone, water service, fire water service, cable, and fire alarm facilities installed in accordance with standard specifications of the serving utilities.

COA UTIL-3: Improvements in the Public Right-of-Way (General). *Approved prior to the issuance of a P-job or building permit.*

- The project applicant shall submit Public Improvement Plans to Building Services Division for adjacent public rights-of-way (ROW) showing all proposed improvements and compliance with the conditions and/or mitigations and City requirements including but not limited to curbs, gutters, sewer laterals, storm drains, street trees, paving details, locations of transformers and other above ground utility structures, the design specifications and locations of facilities required by the East Bay Municipal Utility District (EBMUD), street lighting, on-street parking and accessibility improvements complaint with applicable standards and any other improvements or requirements for the project as provided for in this Approval. Encroachment permits shall be obtained as necessary for any applicable improvements located within the public ROW.

- Review and confirmation of the street trees by the City's Tree Services Division is required as part of this condition and/or mitigations.
- The Planning and Zoning Division and the Public Works Agency will review and approve designs and specifications for the improvements. Improvements shall be completed prior to the issuance of the final building permit.
- The Fire Services Division will review and approve fire crew and apparatus access, water supply availability and distribution to current codes and standards.

To further implement COA UTIL-3, the project applicant shall implement the following fire safety measures:

- One elevator would be designed for fire-fighter use; it would be in a hardened shaft and would comply with the requirements of City of Oakland Fire Department.
- Rescue air stations would be provided at every fifth floor. They would be in compliance with the patented systems designed by Rescue Air Systems, and to the standards required by the City of Oakland Fire Department.
- The two viewing galleries on the 40th floor of the building would be hardened with 4-hour walls and ordinary hazard sprinkler spacing in lieu of light hazard spacing. The floor would project 3 feet beyond the face of the building to ease access from outside and above the building.
- Both stairs would have 4-hour walls.
- Each standpipe would be sized so as to be able to supply the building's needs without need for the other.
- The swimming pool would provide excess capacity of on-site water supply above and beyond that stored in the basement. The pool water would also be made accessible from the street to act as a secondary reservoir for the neighborhood.
- Satellite Fire Control Rooms would be provided on floors 10, 20 and 30, within which there would be computer access to the Building Information Management data. As a part of the Fire-Life-Safety provisions in the building, all security cameras, fire and smoke control and detection systems would, where practicable, be addressable and displayed on digitized floor plans where their "condition" can be noted and determined. The intent is to provide locations inside the building where fire fighters can "read" the condition of the building in the event of a fire.
- 800 MHz Antennas throughout the building and a redundant internal communication system would be provided. The internal communication system would have communication devices in the stairwells on each floor and in the Satellite Fire Control Rooms.

COA UTIL-4: Payment for Public Improvements. *Prior to issuance of a final inspection of the building permit.* The project applicant shall pay for and install public improvements made necessary by the project including damage caused by construction activity.

COA UTIL-5: 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 accordance with current City requirements. The proposed program shall be 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 words 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-6: Stormwater 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 Sewer and Stormwater Division. 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 utilities and infrastructure that could result from implementation of the proposed project. The section begins with the significance criteria, which establish the thresholds used to determine whether an impact is significant.[13] The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as appropriate.

a. Significance Criteria. The proposed project would have a significant impact on the City's utilities and infrastructure systems if it would:

- Increase water demand such that there would not be sufficient water supplies available to serve the project from existing entitlements and resources, or would require new or expanded entitlements;
- Exceed wastewater treatment requirements of the San Francisco Bay Regional Water Quality Control Board;
- Require or result in construction of new storm water drainage facilities or expansion of existing facilities, construction of which could cause significant environmental effects;

[13] Oakland, City of, 2008.CEQA Thresholds/Criteria of Significance Guidelines, p. 5. May 13.

- 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;
- 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;
- 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.

Potential impacts to stormwater drainage facilities are discussed in Section IV.K, Hydrology and Water Quality.

b. Less-Than-Significant Utilities and Infrastructure Impacts. The following discussion describes less-than-significant impacts to infrastructure and utilities systems that would result from implementation of the proposed project.

(1) Water. 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. Since the proposed project would not result in a 500 unit residential development or increase the number of the public water system's existing service connections by 10 percent, it does not require a water supply assessment under SB 610.

Implementation of the proposed project would require water and wastewater service for 370 residential units, 2,832 square feet of café area, and associated open space. Based on anticipated uses within the project site, implementation of the proposed project would result in an estimated average daily demand for water of approximately 69,520 gpd (approximately 0.07 mgd).[14] The anticipated daily water demand that would result from implementation of the proposed project represents approximately 0.01 percent of average daily water demand within the EBMUD service area.

The proposed project would be outfitted with water-conserving fixtures, as required by the Uniform Building Code. The project site is located outside the service boundaries of any of EBMUD's currently planned water recycling projects. As such, EBMUD has no plans to serve recycled water to

[14] Assumes that each 1 bedroom unit would use 165 gpd and each 2 bedroom unit would use 220 gpd.

the project area in the near future.[15] The project would include landscaping that would require irrigation; however, private, water-consuming lawns would not be developed as part of the proposed project and drought tolerate plants would be part of the landscaping, in accordance with COA UTIL-1. EBMUD representatives have given a preliminary indication that they can serve this project's water demand.[16]

Anticipated daily water demand that would result from implementation of the proposed project represents less than 0.01 percent of the treatment capacity of the EBMUD or Water Treatment plant. Sufficient water treatment capacity exists within the EBMUD system to accommodate water demand generated by the proposed project. Therefore, implementation of the proposed project would not require expansion of the existing water treatment system.

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 construction plans. 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 purposes of fighting fires) would be assessed at the time of project construction. The OFD maintains a minimum fire flow standard of 1,500 gpm. It is expected that minimum water flow would be available within the project site without a major upgrade of water lines.[17]

Since the proposed project's additional water demand would be served by EBMUD and would not exceed EBMUD treatment capacity or the capacity of the water supply distribution system, the project would have a less-than-significant impact on water services. The project would be subject to COA UTIL-3 and 4 regarding improvements in the public right-of-way and payment for public improvements.

In addition, if feasible, the proposed project would include several water conservation measures. Rain water would be collected from the roof and reused in the irrigation of the landscaping on the roof and around the building. It would also provide water for sprinklers used to clean the solar panels and collectors on the roof. The use of treated rainwater for flushing toilets would also be considered by the project applicant. Rainwater collection could provide approximately 129,000 gallons of water per year. The water would be reused by contributing to flushing the toilets in the apartments and common toilets. These water conservation measures would further reduce the project's less-than-significant water impacts.

[15] Rehnstrom, David, 2008. Senior Civil Engineer, Water Service Planning, East Bay Municipal Water District. Written communication with LSA Associates, Inc., January 15.

[16] Ibid.

[17] Ibid.

(2) Wastewater. Based on wastewater generation numbers provided in the City of Oakland *Sanitary Sewer Design Guidelines*, implementation of the proposed project would be expected to generate an additional 63,800 gpd of wastewater (assuming 150 gpd per one-bedroom unit, 200 gpd per two-bedroom unit, 300 gpd per 1,000 square feet of take-out restaurant space, 200 gpd per 1,000 square feet of office use, and 300 gpd per 1,000 square feet of gym use). [18] Wastewater generated by the proposed project represents less than 0.01 percent of the MWWTP's secondary treatment capacity. The MWWTP is currently operating at 48 percent of the total secondary treatment capacity. As such, the additional wastewater generated by the proposed site would be accommodated by the MWWTP. Because the wasterwater generated by the project would be handled by the MWWTP, and therefore subject to both primary and secondary treatment, the proposed project would not violate the waste-water treatment requirements of the San Francisco Bay Regional Water Quality Control Board.

The City of Oakland has an infiltration/inflow correction program that consists of a 25-year capital improvement program to rehabilitate the existing sanitary sewer line system, which will size the City's wastewater collection system to accommodate an anticipated 20 percent growth rate through-out Oakland. Based on the estimation that the proposed project would increase Oakland's population by 986 residents, the project would result in a growth rate of 0.24 percent. The proposed project would be well within the 20 percent growth rate anticipated for the City, and as such, the City has sufficient system-wide conveyance and treatment capacity to be able to accommodate the increased wastewater generated by the proposed project.

In addition, any new sanitary sewer infrastructure would be designed in accordance with the City's *Sanitary Sewer Design Guidelines*, and would adhere to accepted engineering principals. In particu-lar, the project applicant would be required to submit engineering calculations for the design of all proposed sanitary sewer system improvements to the Public Works Agency Engineering Design and Right-of-Way Management Division for review. One required component of these calculations is an analysis of the impact of the proposed development on the existing sanitary sewer capacity. If the existing sewer system does require improvements, the project applicant would be responsible for repairing or replacing the sanitary sewer pipes as part of the conditions of approval for the building permit.[19]

Implementation of the City's Stormwater and Sewer Condition of Approval (see COA UTIL-6) would ensure that the capacity is confirmed, required impact fees are paid, and no significant impacts to the city's sewer infrastructure occurs. Impacts to wastewater infrastructure would be less than significant.

(3) 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.

The average resident in Oakland generates 1 pound per day of solid waste and the average employee generates 8.8 pounds of waste per day.[20] Although solid waste generation rates can vary substantially by geographic locality, type of industry, or type of residential unit, these City-wide average waste

[18] Oakland, City of, 2005. Public Works Agency, *Sanitary Sewer Design Guidelines.* November.

[19] Ibid.

[20] California Integrated Waste Management Board, 2005. Profile for Alameda County. Website: www.ciwmb.ca.gov/Profiles/County/CoProfile1.asp. August 24.

generation rates can be used to approximate the amount of waste that would be generated by the proposed project. Based on these generation rates, the anticipated 966 persons that would live within the project site**,** along with the 20 persons that would be employed within the site, would generate a total of approximately 1,036 pounds of waste per day (0.52 tons), and 378,140 pounds of waste per year (189 tons). As previously noted, the Davis Street Transfer Center has a maximum capacity of 5,600 tons of waste per day. The increase in waste generation resulting from the proposed project represents less than one percent of the total capacity of the Davis Street Transfer Center. In addition, the anticipated life of the Altamount Landfill would not be significantly reduced by implementation of the proposed project.

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-5) 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. As such, the project would not substantially affect the remaining capacity of the Davis Street Transfer Station or the Altamount Landfill.

In addition, Cal Waste currently provides recycling and greenwaste services to the project site. The Alameda County Waste Management Authority passed the Alameda County Landfill Ban in 2009 which prohibits the disposal of plant debris in county landfills. Plant debris includes grass, leaves, shrubbery, vines and tree branches. Implementation of the City's Standard Condition of Approval for waste reduction and recycling (COA UTIL-5) would ensure that any potential impacts related to solid waste would be reduced to a less-than-significant level.

(4) Energy and Telecommunications. The proposed project would be subject to Title 24, California's Energy Efficiency Standards for Residential development and would not violate applicable regulations related to energy standards. The proposed project is located in developed area currently served by electricity, gas, and telecommunications lines. Connecting new construction to existing lines would involve relatively minor improvements, such as connections to existing distribution mains. The project would not require or result in construction of new energy facilities or expansion of existing facilities. As such, the proposed project would have a less-than-significant impact on energy and telecommunications.

In addition, if feasible, the project would include plans for energy producing technologies, such as a vertical axis wind turbine, solar panels, and photovoltaic panels. All of these technologies would be located on the roof, with the solar and photovoltaic panels located on the south-facing portion. The solar panels would heat water for pool and domestic water use in the building, while the photovoltaic cells would provide energy for landscape and building lighting. The wind turbine would also produce energy for the proposed project. These energy producing technologies would reduce the less-than-significant energy and telecommunications impacts caused by the proposed project.

As noted in COA UTIL-2, all new electric and telephone facilities, fire alarm conduits, street light wiring, and other wiring shall be placed underground along the project applicant's street frontage and from the project applicant's structures to the point of service. The plans shall show all electric,

telephone, water service, fire water service, cable, and fire alarm facilities installed in accordance with standard specifications of the serving utilities.

c. Significant Utilities and Infrastructure Impacts. The proposed project would not result in significant impacts to infrastructure and utilities.

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. EBMUD accounted for water demands associated with the project within the *2005 Urban Water Management Plan* (UWMP). The UWMP includes an analysis of past, present, existing, pending, and reasonably foreseeable future development projects based on the Association of Bay Area Government's (ABAG's) Projections 2007. 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 and plans to supply water for such growth. As a result, no significant cumulative impacts 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, operates, and maintains the wastewater collection system for the City of Oakland. The project site is located within Sub-basin 52-13. The City of Oakland has an infiltration/inflow correction program (IICP) that consists of a 25-year capital improvement program to rehabilitate the existing sanitary sewer line system, which will size the City's wastewater collection system to accommodate an anticipated 20 percent growth rate through-out Oakland. Since the proposed project is well within the 20 percent growth rate, the City has sufficient system-wide conveyance to accommodate the increased wastewater generated by the proposed project and other cumulative future development projects. 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, cumulative 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 1,036 pounds of waste per day (0.52 tons), and 378,140 pounds of waste per year (189 tons). This represents less than 0.1 percent of the total daily permitted throughput for the Davis Street Transfer Station and the Altamont Landfill. The amount of solid waste generated by operation of the proposed project together with cumulative development projects 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, which would help reduce the amount of waste generated during construction of all new development projects.

(4) Natural Gas and Electricity. 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 convert to high 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 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 regulation 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.

N. PUBLIC SERVICES AND RECREATION

This section describes public services serving the project area and evaluates the effects of the proposed project on those services. Potential impacts to public services that could result from implementation of the proposed project are identified, and mitigation measures are recommended, as appropriate.

1. Setting

This section describes current service locations, capacities, and expansion possibilities for police and fire services, parks, and public schools that would serve the project area. Relevant regulations and service requirements are also discussed.

a. Police Service. 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, and supports community policing efforts, as well as various other duties. Police headquarters are located at 250 Frank H. Ogawa Plaza, approximately 1.5 miles east of the project site.

The Police Department has an authorized staffing level of 803 sworn positions, with current staffing of approximately 792 officers.[1] All of these are paid, full-time positions. Oakland is composed of six police service areas that are divided into 57 police beats. The project area falls within Beat 4X, which is in the Metro Police Service Area. The northern boundary of Beat 4X extends along Grand Avenue from I-980 to Lake Merritt. The southern boundary extends along 14th Street from Brush Street to Lake Merritt. The eastern boundary extends along East Lakeside Drive from 14th Street to Grand Avenue. The western boundary extends along West Brush Street from 14th Street northbound to 18th Street, continuing northbound along I-980 to West Grand Avenue.[2] There is one officer assigned to Beat 4X for each watch resulting in 24-hour coverage. Depending on the availability of officers, a secondary officer is sometimes assigned that beat.[3]

During most shifts, officers must continuously respond to calls and have little or no time to work proactively with residents and business persons within their beats, though officers conduct preventative patrols as time permits. The primary law enforcement issues within the vicinity of the project area are robberies, which involve an action against a person, and burglaries, which involve an action against property. In the project area, most burglaries are vehicular in nature.[4]

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

[1] Thomason, Jeffrey R., 2009. Public Information Officer, Oakland Police Department. Personal Communication with LSA Associates, Inc., October 28.

[2] Oakland Police Department, 2006. *Contact Your Officer*. www.oaklandpolice.com/youroff/beat4X.html. June 5.

[3] Mufarreh, Chris, 2008. Lieutenant, Oakland Police Department. Personal Communication with LSA Associates, Inc. January 28.

[4] Ibid.

vehicles. Priority C and D calls are non-emergency and response times will depend on availability of officers.[5] The average citywide response time for priority A, B, and C calls in May 2007 was approximately 6, 54, and 114 minutes, respectively.

b. Fire Service. Fire services to the project site are provided by the Oakland Fire Department (Fire Department). The Fire Department serves the City of Oakland, and has Mutual Aid agreements with the cities of Berkeley, Piedmont, and Alameda; the Alameda County Fire Department; and the East Bay Regional Park District. The Fire Department also provides initial response and advanced life support for medical emergencies. As of January 2008, the Fire Department had 472 Operational Personnel, 382 Emergency Medical Technicians (EMTs), 90 paramedics, and 6 general staff positions. All personnel at the rank of Battalion Chief or below are certified as EMTs, with the exception of the paramedic firefighters.[6]

During a fire or medical emergency, the first responder to the project site would be Fire Station 12, located at 822 Alice Street, which is approximately 0.7 miles from the site. This Station is equipped with four paid personnel, one fire engine, and one water rescue vehicle. Fire Station 1 would be the secondary responder in an emergency at the project site. This station is located at 1603 Martin Luther King Jr. Way, which is approximately one mile from the project site. Station 1 is equipped with ten personnel, one Chief, one fire engine, one truck, and one rescue vehicle.

The Oakland Fire Department has a standard response time goal of 7 minutes from dispatch to time of arrival. The current response time to the project site is less than 7 minutes.[7] The City Fire Department maintains minimum flow standards for pipelines serving residential and commercial uses. The minimum flow standard for lines is 1,500 gallons per minute (gpm). Minimum fire flow requirements for a specific development project would be assessed at the time of project construction.

c. Public Schools. The project site is served by the Oakland Unified School District (OUSD). 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. Enrollment during the 2007 to 2008 school year, for both pubic schools and charter schools, was 46,447 students.[8]

Since the 2000 school year, Oakland public schools have experienced a sharp decline in enrollment. Losses were particularly large at the elementary and middle school levels. According to the California Department of Education, district enrollment declined by nearly 8,500 students between 2000/2001 and 2007/2008 school years.[9] District enrollment is expected to continue decreasing in the short run, but is expected to level out around the year 2011. Meanwhile, Oakland's private schools have also been experiencing an out-migration of students, indicating that families are leaving Oakland, rather

[5] Ibid.

[6] Edwards, James, 2008. Deputy Chief, Oakland Fire Department. Personal communication with LSA Associates Inc., January 24.

[7] Ibid.

[8] California Department of Education, 2008. Educational Demographics Unit, *DataQuest*. Website: dq.cde.ca.gov/dataquest/. July 14.

[9] Ibid.

than simply switching their children from public to private school.[10] The District has an average teacher to student ratio for K to 12th grade of one teacher for every 18.7 students.[11]

The project site would be served by the following public schools: Lincoln Elementary School, at 225 11th Street; Westlake Middle School, at 2629 Harrison Street; and Oakland Technical High School, at 4351 Broadway.[12] The enrollment and capacity for the 2007/2008 school year for each of these neighborhood schools are shown in Table IV.K-1.[13] Lincoln Elementary is slightly over capacity, while Westlake Middle and Oakland Technical High schools are well under capacity.

Table IV.K-1: Neighborhood Schools

School	Capacity	Enrollment
Lincoln Elementary	555	582
Westlake Middle School	757	554
Oakland Technical High School	1,749	1,625

Source: Oakland Unified School District, 2008

There are two charter schools within 0.5 miles of the site. The closest is the Oasis High School, which is located 0.1 miles from the project site at 285 17th Street. The Lighthouse Community Charter School, which serves students in K through 8th grades, is located 0.5 miles from the site at 345 12th Street. In addition, one private school, St. Paul's Episcopal School, is located less than one mile north of the site at 116 Montecito Avenue.

According to a recent report by Lapkoff and Bobalet Demographic Research, Inc., unsubsidized apartments generally do not yield as many students as subsidized apartments or single family homes. According to this report, non-subsidized apartments in Oakland have an average student yield factor of only 0.10 students per unit.[14]

d. Libraries. The City of Oakland has 18 public library branches. In the 2006/2007 fiscal year, Oakland libraries served a total of 435,710 people, had 3,094,268 library visits (representing an increase of 25 percent from the 2004/2005 fiscal year), and housed a total of 2,101,819 materials in their collections.[15] Four libraries are located within 1 mile of the project site: the Main Library, located at 125 14th street; the African American Museum and Library of Oakland (AAMLO) located at 659 14th Street; the Asian Branch Library at 388 9th Street; and the Lakeview Branch at 550 El Embarcadero.

[10] Lapkoff & Gobalet Demographic Research, Inc, 2004. *Demographic Update for Facilities Planning, Executive Summary*. May 20.

[11] California Department of Education, 2008. Educational Demographics Unit, *DataQuest*. Website: data1.cde.ca.gov/dataquest/.

[12] Oakland Unified School District, 2008. *School Finder*. Website: mapstacker.ousd.k12.ca.us/newwelcome.htm.

[13] Lam, Juwen, 2008. Demographer, Oakland Unified School District. Written communication with LSA Associates, Inc. July 14.

[14] These factors are specific to apartments in higher rise apartment buildings, which unless they are subsidized, generally generate few students.

[15] Oakland Public Library, 2008. *Oakland Pubic Library Annual Report, 2006-2007*. Website: www.oaklandlibrary.org/Annual_Report.pdf.

According to the 2006 Library Facilities Master Plan,[16] the current 8,000 square-foot Main Library is about half the size needed to support the services it provides, and options examined for the Main Library include renovation and expansion of the facility or relocation to another facility. The Plan identifies that the Main Library should be expanded to a 16,000 to 19,000 square-foot facility. The 17,000 square-foot AAMLO underwent facility improvements and reopened in 2002. No additional facility improvements are identified for the AAMLO by the Plan. The Library Facilities Master Plan identifies the 8,500 square-foot Asian Branch Library for expansion to a 10,500 to 12,000 square-foot neighborhood library. The Master Plan also recommends that the Lakeview Branch be expanded by 2,000 to 2,500 square feet.

e. Parks and Recreation. The City of Oakland Office of Parks and Recreation (OPR) provides recreational opportunities 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, eight community gardens, seven swimming pools, 50 tennis courts, and two public golf courses.[17] Maintenance of these facilities is provided by the Oakland Public Works Agency. [18]

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; resource conservation parks; athletic field parks; and school playgrounds.

Region-serving parks are 25 acres or larger, and include Lakeside Park. Community parks, such as Mosswood, serve a 1-mile radius in hill areas and a 1/2-mile radius in flatlands. Neighborhood parks range in size from 1 to 10 acres, and serve a 1/2-mile radius in hill areas and a 1/4-mile radius in flatlands. Miniparks are generally less than 1-acre in size and serve a 1/8-mile radius in the flatlands and a 1/4-mile radius in the hills. The East Bay Regional Park District (EBRPD) acquires and develops regional parks, open space and trails throughout the East Bay, and also provides open space and recreation facilities within Oakland's City limits. There are two EBRPD facilities within five miles of the project site: Temescal Regional Recreation Area; and Crown Memorial State Beach.

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 and facilities that are not deemed to be "special purpose" facilities). There are approximately 3,073 acres of total parkland in Oakland according to the City of Oakland General Plan, 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 1,000 residents.[19] According to OPR staff, local parks are heavily utilized by the community, and the current ratio of City parklands to residents (10 acres per 1,000 residents) does not adequately serve the community's needs.[20]

[16] Oakland, City of, 2006. *Oakland Public Library Master Facilities Plan*. June.

[17] Oakland, City of, 2007. *Office of Parks and Recreations Spring and Summer 2007 Brochure*.

[18] Oakland, City of, 2005. *Office of Parks and Recreation*. Website: www.oaklandnet.com/parks/default.asp.

[19] Oakland, City of, 1996. *General Plan, Open Space and Recreation Element*. June.

[20] Riley, Dana, 2008. Supervisor, Oakland Office of Parks and Recreation. Written communication with LSA Associates Inc., March 18.

The OSCAR Element classifies the area surrounding the project site as the Central/Chinatown Planning Area of Oakland. As of 1996, with the adoption of the OSCAR Element, the Central Planning Area contained one region-serving park, five neighborhood parks, one mini-park, four linear parks, and five special use parks. Lakeside Park is the one region-serving park, and is probably one of the best known and most heavily used parks in the City.

Snow Park, located at 19th Street and Harrison Street, abuts the project site to the west. The park is approximately 4.2 acres and includes a manicured mini-golf course and putting green. East of the site are open space and recreational areas associated with Lake Merritt. One such recreational area is Lakeside Park, which spans 155 acres and includes amenities such as the Bonsai Garden, Lakeside Park Garden Center, Lakeside Demonstration Gardens, lawn bowling greens and the Rotary Nature Center.[21] Lincoln Square Recreation Center is the closest recreational facility to the site, and is located 1/2 mile to the south at 250 10th Street. Recreational facilities differ from parks in that they are community-based centers that offer free and low-cost recreation, sports, art and cultural, computer, general learning, and after-school activities to the community.

In November 2002, the Oakland voters approved Measure DD, a bond measure to finance the preservation and acquisition of open space, parks renovation, Estuary waterfront parks and trails, water quality improvements related to Lake Merritt, restoration of Oakland's creeks, renovation and creation of new youth and public recreation facilities, rehabilitation of open space and other safety and maintenance facilities, and provision of safe public access to Lake Merritt, Lake Merritt Channel, and the estuary. These projects involve facilities near the project site.

f. Relevant Setting. 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 include the following policies related to the provision of fire safety, parks, and schools:

- 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.
- 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 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.
- 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.

[21] Oakland, City of, 2008. Office of Parks and Recreation, *Lakeside Park Amenities*. Website: www.oaklandnet.com/parks/parks/lakeside_amenities.asp.

(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.

COA SERV-1: Conformance with other Requirements. *Prior to issuance of a demolition, grading, P-job, or other construction related permit.*

- 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.
- 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.

2. Impacts and Mitigation Measures

This section discusses potential impacts to public services that could result from implementation of the proposed project. The section begins with the significance criteria, which establish the thresholds used to determine whether an impact is significant.[22] The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as appropriate.

a. Significance Criteria. 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.

[22] Oakland, City of, 2008. CEQA Thresholds/Criteria of Significance Guidelines, p. 5. May 13.

b. Less-Than-Significant Public Services Impacts. Implementation of the proposed project would result in the following less-than-significant impacts.

(1) Police Services. Based on an average household size of 2.61 persons, implementation of the residential portion of the proposed project would add approximately 966 persons to the City's population. In addition, the project could lead to indirect population growth through the 20 jobs created as part of the proposed café use and operation and maintenance of the condominiums. As such, the project could increase the City's population by approximately 986 residents, which would result in an incremental increase in demand for police services. For a city the size of Oakland, the national police service standard is 1 officer per 1,000 residents.[23] The city currently maintains an officer to resident ratio of approximately 1 officer per 500 residents.[24] However, OPD staff has stated that increased police presence and attention would be required during the construction phase and operational phase of the project.

Since the proposed project would increase demand for police services, the project could result in the need for additional officers assigned to the beat. However, the addition of these personnel would not require the alteration of existing police facilities. In addition, an incremental increase in demand for police services would not significantly impact OPD's ability to maintain response time standards. Therefore, the proposed project would result in a less-than-significant impact to police services.

<u>Recommended Measure SERV-1</u>: Although not required to mitigate a CEQA impact, the following recommendation should be considered to improve safety and further reduce the less-than-significant police service impacts. The applicant should incorporate as many Crime Prevention Through Environmental Design (CPTED) techniques into the project design as possible and give new residents the opportunity to participate in a Neighborhood Watch program.[25]

(2) Fire Services. As noted above, the proposed project would add approximately 986 persons to the City's population. The proposed project would result in an incremental increase in demand for fire and emergency services within the City of Oakland. The increase in demand for these services would be met by existing facilities and the increased demand would not require the construction of any new facilities (i.e., new fire stations) to provide adequate fire protection beyond the improvements proposed as part of the project (i.e., fire hydrants).[26]

According to the Oakland Fire Department, one potential unique fire hazard related to the proposed project is that emergency vehicle access to this location could be adversely impacted by the current street width and parking configurations found in the area. In addition, while the proposed project would not directly result in the need for new fire facilities, the fire engines that respond to this area have incurred considerable wear and tear due to a high volume of emergency responses.[27] As such, the Fire Department needs to continually consider vehicle replacement.

[23] Oakland, City of, 2007. *Measure DD Implementation EIR, Chapter IV.K, Public Services and Recreation.* July.

[24] Lieutenant Chris Mufarreh, Oakland Police Department 2008, op cit.

[25] Ibid.

[26] Deputy Chief James Edwards, Oakland Fire Department, 2008, op cit.

[27] Ibid.

There are a number of requirements related to fire safety that are mandatory for new developments, in order to ensure the safety of the residents, public, and firefighters. The Oakland Fire Department requires that any fire hydrant must be sized to provide a minimum flow of 1,500 gallons per minute (gpm) at 20 pounds per square inch (psi). The number of fire hydrants and the required amount of water supply would be determined based on the sum of the largest three consecutive floor areas of the building and based on the type of construction per building permit application sought by the project applicant.[28] The project applicant would also be required to meet Fire Department standards related to fire hydrants, water fire flow requirements, spacing of hydrants, sprinkler systems, and other fire code such as required in the Uniform Building Code (UBC) and other Fire Code standards. The Fire Department also has specific requirements for the construction and maintenance of high-rise buildings, which the project applicant would have to meet.[29]

In addition, the California Fire Code (CFC) requires that no overhead power utility cables, phone lines, data, or communication cable be located along public rights of way that serve this project site or adjacent buildings.[30] The presence of these overhead lines would impair, and cause undue hazards to, fire crew access to building openings. As such, all utility lines would be required to be underground. The CFC further requires that all access roads to the site be accessible at all times. The project design would be required to comply with Public Works Agency road standards and the Fire Department's *Draft Access Road Standards.*

The City of Oakland's Clean Water Act requires that test flows and drain discharges from sprinklers and standpipes be disposed through the building sewer mains and not at the street where bay water is affected by way of discharges to the storm drains. Compliance with requirements mentioned above, and the City's Conformance with other Requirements (COA SERV-1), would ensure that the project would have a less-than-significant fire safety impact.

Since the proposed project would not require the construction of new fire facilities, and because the project would be required to comply with the above mentioned Fire Code standards, the project would have a less-than-significant impact on fire services. In addition, the proposed project[31] would further enhance fire-fighting and rescue capabilities on the project site and in the area through the following:

- One elevator would be designed for fire-fighter use; it would be in a hardened shaft and would comply with the requirements of City of Oakland Fire Department.
- Rescue air stations would be provided at every fifth floor. They would be in compliance with the patented systems designed by Rescue Air Systems, and to the standards required by the City of Oakland Fire Department.

[28] Ibid.

[29] Oakland, City of. Oakland Fire Department, *High Rise Facility Maintenance Inspection Guideline*. Website: www.oaklandnet.com/oakweb/fpb/pdfs/HighMaint.pdf.

[30] Deputy Chief James Edwards, Oakland Fire Department, 2008, op cit.

[31] Birchall, Ian, 2008. Principal, AIA, RIBA, ian birchall + associates. Memorandum to Heather Klein, Senior Planner, City of Oakland. July 22.

- The two viewing galleries on the 40th floor of the building would be hardened with 4-hour walls and ordinary hazard sprinkler spacing in lieu of light hazard spacing. The floor would project 3 feet beyond the face of the building to ease access from outside and above the building.
- Both stairs would have 4-hour walls.
- Each standpipe would be sized so as to be able to supply the building's needs without need for the other.
- The swimming pool would provide excess capacity of on-site water supply above and beyond that stored in the basement. The pool water would also be made accessible from the street to act as a secondary reservoir for the neighborhood.
- Satellite Fire Control Rooms would be provided on floors 10, 20 and 30, within which there would be computer access to the Building Information Management data. As a part of the Fire-Life-Safety provisions in the building, all security cameras, fire and smoke control and detection systems would, where practicable, be addressable and displayed on digitized floor plans where their "condition" can be noted and determined. The intent is to provide locations inside the building where fire fighters can "read" the condition of the building in the event of a fire.
- 800 MHz Antennas throughout the building and a redundant internal communication system would be provided. The internal communication system would have communication devices in the stairwells on each floor and in the Satellite Fire Control Rooms.

(3) Public Schools. Using the District's student yield factor of 0.10 students per dwelling unit, the project could generate approximately 37 students in Kindergarten through Grade 12. School-aged children generated by the project would result in a cumulative increased demand on Oakland schools. As previously described, Lincoln Elementary is currently over capacity. Depending on how many elementary students are actually generated from the project, some students may be re-directed by the District to nearby elementary schools if there is not enough space at Lincoln.[32] Westlake Middle School and Oakland Technical High School are below capacity and could accommodate additional students. The increase in demand would not require the construction of new school facilities.[33]

In addition, Senate Bill 50 (SB50) 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, and provides a $9.3 billion bond measure for school construction and revises the existing limitation on developer fees for school facilities. 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 the school District by the project, the project applicant would pay the required development fee to the District. 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. Assuming that there is a maximum of 460,080 square feet of residential development, the project applicant would be required to pay approximately

[32] Lam, Juwen, Oakland Unified School District, 2008, op cit.

[33] Ibid.

$1,030,579 in school impact/mitigation fees. However, the final fee would be determined based upon the final square footage of any project. These fees would reduce the project impacts on Oakland schools to a less-than-significant level.

(4) Libraries. Implementation of the proposed project would directly increase the population of the City by approximately 986 residents. The new residents would likely utilize nearby libraries, including the Main Library, and would increase demand for library services in the City.

While the proposed project would generate new patrons that would use the library system, the project is not of a size that would significantly affect library facilities or services. As previously stated, the Master Facilities Plan identifies the need for expanded library facilities. These facilities are located in a built, urban environment, and future expansion projects are unlikely to result in significant environmental impacts. Additionally, any potential library expansion projects would be subject to CEQA and would be required to mitigate potential environmental impacts. While new residents would be generated by the proposed project, the project would not result in substantial demand that would require expansion or construction of new library facilities.

(5) Parks and Recreation. The proposed project would introduce approximately 986 new residents that would use both neighborhood and community parks in the area. The Oakland General Plan sets a total park acreage standard of 10 acres of park area per 1,000 persons in the community and a local-serving park acreage standard of 4 acres per 1,000 residents. The total park-acreage standard is applied to the City as a whole and is based on all parkland in the City, regardless of function or ownership. The local-serving park acreage standard is applied at both the citywide and community level and includes all parks which meet the active recreational needs of a community. Oakland currently has 8.26 acres of total parkland per 1,000 residents and 1.33 acres of local-serving parkland per 1,000 residents. According to the General Plan, if Lakeside Park is discounted due to its regional draw, the planning area has a per capita average of 1.65 acres per 1,000 residents. Implementation of the proposed project would not change these acceptable ratios.

OPR staff identified the Lincoln Square Recreation Center as a heavily used recreational facility, and stated that any increased use would contribute to the deterioration of those facilities, in particular park restrooms and green space.[34] However, since the project site is located adjacent to Snow Park and close to Lake Merritt, it is more likely that residents of the project would choose these parks to use instead of Lincoln Square. In addition, the project would include a number of open space and recreational areas, including the outdoor patio, garden, private balconies, roof terrace, and gymnasium, available for the residents of the building to use. As such, the proposed project is expected to have a less-than-significant impact on existing park and recreational facilities.

c. Significant Public Services Impacts. Implementation of the proposed project would not result in any significant impacts to public services.

d. Cumulative Public Services Impacts. The geographic area considered for the public services cumulative analysis includes the City of Oakland since the majority of services 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 devel-

[34] Riley, Dana, Oakland Office of Parks and Recreation, 2008, op cit.

opment 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 that reduce the potential impact on services to less-than-significant levels. As a result, implementation of the proposed project together with cumulative development would not result in significant cumulative public service impacts.

(1) Fire and Police. Cumulative development in the City of Oakland, including past, present, existing, pending, and reasonably foreseeable future development, would increase the need for additional City police and City fire protection services, and could affect response times, service levels, and the need for additional facilities. While the City monitors staffing levels and facilities on an annual 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 constrains. 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 proposed project, the Oakland Police and Fire Department 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. 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 hydrant locations, and other facilities. Therefore, the project's contribution to any increased demand 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 cumulative development, would result in a cumulative increased demand for school services. 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 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 the Central/Chinatown planning area, 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 a Facilities Master 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 a part of this effort, the library is evaluating ways the existing libraries could improve the delivery of programs, services, and materials. Thus, library improvements are underway to address cumulative demand. The proposed project would increase the population serviced by the Main Library, African American Museum, Asian Branch Library, and the Lakeview Branch (all four of which are located within 1 mile of 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 Central/Chinatown planning 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 cumulative development, would contribute to the need for new or expanded park and recreational facilities city-wide necessary to achieve the goals set forth in the OSCAR Element. However, the possibility that this goal will not be met would not necessarily constitute a physical environmental impact. Since the proposed project would provide open space and recreational facilities in the form of a garden patio, rooftop terrace, and gymnasium, 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.

V. ALTERNATIVES

The *CEQA Guidelines* require the analysis of a reasonable range of 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] The following discussion is intended to inform the public and decision-makers of the relative impacts of four potentially feasible alternatives to the proposed project. A discussion of the environmentally superior alternative is also provided.

This chapter is divided into four sections. The first section provides a brief discussion of alternatives that were considered but rejected from further analysis. The second section briefly restates that objectives and impacts of the proposed project. The third section describes the principal characteristics of the alternatives considered in this section (i.e., the No Project/No Development alternative, the Southwest Corner Development alternative, the Reduced Height alternative, and the Zoning Compliant alternative) and briefly compares these alternatives to the proposed project. The last section discusses the environmentally-superior alternative.

A. ALTERNATIVES CONSIDERED BUT REJECTED FROM FURTHER STUDY

The following two alternatives to the proposed project were considered during the environmental review process. These alternatives are described below and the reasons they were rejected from further consideration in this EIR are provided.

1. Applicant Owned Off-Site Alternative

The project applicant owns another site in downtown Oakland, which has been suggested as an alternate location for the proposed project. The property is located at the southeast corner of 19th Street and Webster Street. The property consists of two buildings, a three-story building at 331 19th Street and a two-story building at 1820 Webster Street, on two lots. The buildings share a common stairway for the second means of egress. The buildings are occupied with ground floor commercial uses and second and third floor office uses. Together, both lots are approximately 50 feet by 150 feet, or 7,500 square feet. This site could not accommodate a project at the scale of the proposed project

[1] *CEQA Guidelines*, 2009. Section 15126.6.

[2] *CEQA Guidelines*, 2009. Section 15126.6(b)

(high-rise residential tower with approximately 370 residential units and five levels of below-grade parking).

2. City Owned Off-Site Alternative

It has been suggested that the City could potentially identify an alternative site for the proposed project and undertake a land swap with the project applicant. However, it was determined that the City does not own an underutilized parcel in downtown Oakland that could be used in such a land swap. An approximately 38,000 square foot remainder parcel may be created through the re-alignment of 12th Street as part of the Measure DD improvements at Lake Merritt. This parcel would be at the southwest corner of the future intersection of 12th Street and 2nd Avenue. The construction contract for the re-alignment of 12th Street was awarded in March 2010 and construction is anticipated to take 2.5 years; this parcel would not be available for redevelopment until several years in the future and is therefore rejected as an infeasible off-site location for the proposed project.

B. 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 provided below.

1. Project Objectives

The Emerald Views Residential Development Project seeks to develop high-density housing in the City of Oakland in proximity to jobs, services, and amenities. Specifically, the project applicant seeks to:

- Develop a high-rise residential tower about 457 feet tall with approximately 370 residential units and five levels of below-grade parking providing approximately 357 parking spaces.
- Design a project that assists the Central Business District in becoming a premier location in the region for urban residential living by helping create a high density residential link between Lake Merritt and downtown Oakland.
- Design a project that architecturally complements the surrounding historic buildings and adjacent high-rises by adding to the vertical heterogeneity consistent with modern attractive skylines.
- Utilize a small building footprint, relative to surrounding high-rises, to allow for the creation of ample on-site open space accessible to the public, and serving as an elegant connection to Snow Park.
- Provide a skyway on top of the building where anyone can have a 360 degree view of Oakland, the Bay, and Lake Merritt from a viewpoint now only glimpsed by people who work in nearby buildings.
- Provide in-fill development within close proximity to jobs, the civic center, services and amenities.

- Provide high-density housing in close proximity to existing infrastructure of Oakland, including the regional and local roadway network as well as alternative modes of transportation and facilities, including BART, AC Transit, designated bicycle routes and pedestrian paths.
- Create a project that enhances the street experience of the surrounding neighborhood leading to more evening activity and enhanced pedestrian presence around the north shore of the Lake, including Snow Park, with the aim of revitalizing the area through increased eyes and feet on the streets.

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 intersection of Oak Street/7th Street would operate at LOS F in the PM peak hour under Cumulative Year 2030 Baseline Conditions and Cumulative Year 2030 Baseline plus Project Conditions.
- TRANS-2: The intersection of Harrison Street/Lakeside Drive would operate at LOS F in the PM peak hours under both Cumulative Year 2030 Baseline Conditions and Cumulative Year 2030 Baseline plus Project Conditions.
- TRANS-5: Minimum sidewalk width requirements would not be met.
- WIND-2: Wind levels on the roof terrace may exceed the City's wind criterion of winds above 36 miles per hour for more than 1 hour during daylight hours during the year.
- CULT-3: The proposed project would entail construction activities in close proximity to adjacent historical resources, including 244 Lakeside Drive Apartments, the Schilling Garage, and the Regillus Apartments and Garage, which could result in impacts to these structures.
- BIO-1: The proposed project could impact the root systems or canopies of protected trees adjacent to the project site.
- HYD-1: Water supply well(s) at the project site, if not properly managed or decommissioned, could be damaged during construction, potentially allowing impacts to groundwater quality.

The following impacts are significant and unavoidable, and cannot 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-3: The intersection of San Pablo Avenue/West Grand Avenue would operate at LOS F in the PM peak hour under Cumulative Year 2030 Baseline Conditions and Cumulative Year 2030 Baseline plus Project Conditions.[3]

[3] The City of Oakland's General Plan Housing Element (adopted by City Council, December 2010) specifically identified weekday PM Peak Hour operations at this intersection as significant and unavoidable in future year scenarios. Through certification of the Housing Element, the City Council adopted a statement of overriding considerations for the impact at this intersection. Therefore, weekday PM Peak Hour operations at this intersection have been cleared from further CEQA analysis.

- TRANS-4: The segment of I-880 from Oak to 5th Street would operate at LOS F in the westbound AM peak hour and LOS F in the eastbound PM Peak hour under Cumulative Year 2030 Baseline plus Project Conditions.[4]
- AIR-1: Construction period activities including site preparation and construction could generate significant short–term exhaust and organic emissions. Construction-related NO_x emissions would be potentially significant with the proposed project
- WIND-1: Ground level winds may exceed the City's wind criterion of winds above 36 miles per hour for more than 1 hour during daylight hours during the year.
- WIND-3: Cumulative ground level winds may exceed the City's wind criterion of winds above 36 miles per hour for more than 1 hour during daylight hours during the year.
- CULT-1: The proposed project would remove the Schilling Garden, which is considered to be an individual historical resource.
- CULT-2: Construction of the residential tower would cause a substantial adverse change in the historical significance of adjacent historic structures and the Lakeside Drive Building Group API.
- CULT-4: The proposed project would result in a cumulative impact to the 244 Lakeside Drive Apartment Building Group API.

C. PROJECT ALTERNATIVES

Using the project objectives and significant impacts presented above, the City selected a reasonable range of project alternatives to be analyzed within the EIR. The four alternatives to the proposed Project discussed in this chapter include the following:

- The **No Project/No Development alternative**, which assumes the continuation of existing conditions within the project site.
- The **Southwest Corner Development alternative**, which assumes a three-story residential building containing six dwelling units and a footprint of approximately 3,500 square feet would be constructed on the southwest corner of the project site, while the remainder of the garden would be preserved.
- The **Reduced Height alternative**, which assumes a 12-story building containing 90 dwelling units, 2 levels of underground parking, and the same amount of café space as the proposed project would be developed on the project site.
- The **Zoning Compliant alternative,** which assumes a high-rise residential building containing approximately 350 dwelling units with the same height and scale of the building as the proposed project would be developed on the project site.
- The **244 Lakeside Building Group API-Site Plan alternative,** which assumes a high-rise residential building containing approximately 370 dwelling units with the same ground floor uses, height, scale, design, and footprint of the building as the proposed project would be developed towards southwest corner of the project site.

[4] Ibid.

Following is a discussion of each alternative and an analysis of anticipated environmental impacts. The emphasis of the analysis is on the comparison of the anticipated impacts of each alternative to 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. The environmental impacts in the topical areas not discussed below (e.g., Agricultural Resources and Mineral Resources) would be less than significant and similar to those associated with the proposed project. Table V-1 (at the end of this section) shows both the project impacts and impacts associated with each project alternative.

NO PROJECT/NO DEVELOPMENT ALTERNATIVE

1. Principal Characteristics

The No Project/No Development alternative assumes that the site would remain in its current condition and would not be subject to development. Per *CEQA Guidelines* Section 15126, the No Project/No Development alternative is considered in order to compare the impacts of approving the proposed project to not approving the project. Under this alternative, no development would occur on the project site and existing conditions, its use as a private garden, 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 Development alternative, no new construction would occur and the existing private garden; its lawn, shrubs, flowers, trees, arbor and walkways would remain in their current state. The historic garden on the project site would remain, but would continue to be fenced-off to the public. Table V-1 includes a summary of potential impacts resulting from implementation of the No Project/No Development alternative and the proposed project.

The No Project/No Development alternative would not achieve any of the proposed project's desired objectives as it would not, among other things: develop a high-rise residential tower, assist the Central Business District in becoming a premier location in the region for urban residential living; or provide in-fill development in close proximity to existing jobs or infrastructure.

2. Analysis of the No Project/No Development Alternative

The No Project/No Development alternative is evaluated for all the environmental topics analyzed in detail in this EIR.

a. Land Use. Under the No Project/No Development alternative the historic Schilling Garden would remain in its existing condition on the project site. No new construction would occur and no new land uses would be introduced to the project site under this alternative. Like the proposed project, the No Project/No Development alternative would not conflict with surrounding residential, open space and commercial/office land uses, nor would it result in impacts that would physically divide an established community. Therefore, this alternative would not result in any significant land use impacts.

b. Planning Policy. The historic Schilling Garden would not be removed and a high-rise residential tower would not be constructed on the project site under the No Project/No Development alternative. Implementation of the proposed project would further many goals of the General Plan,

including creating a high-density, mixed-use urban center; implementation of the No Project/No Development alternative would not. The No Project/No Development alternative would be consistent with the Historic Preservation Element of the General Plan.

c. Population and Housing. Under the No Project/No Development alternative, no new residential units or jobs would be introduced to the project site. As such, this alternative would not directly or indirectly induce population growth in the City, displace housing units, or alter the City's jobs/housing balance. The No Project/No Development alternative would not result in an impact associated with population and housing.

d. Transportation and Circulation. The No Project/No Development alternative would not change the existing traffic conditions in or around the project site. Under this alternative, there would not be construction activity nor an increase in vehicle trips associated with building occupancy. As such, the No Project/No Development alternative would not result in any impacts related to transportation and circulation.

e. Air Quality and Greenhouse Gas Emissions. As noted above, under this alternative, there would not be construction activity nor an increase in vehicle trips associated with building occupancy. As such, the No Project/No Development alternative would not result in any air quality impacts. The No Project/No Development alternative would not result in the increase of greenhouse gases.

f. Noise and Vibration. The No Project/No Development alternative would not result in noise impacts associated with the construction or operation of the proposed project.

g. Aesthetics, Shadow and Wind. Under the No Project/No Development alternative, the existing visual character of the project site would remain. The existing garden would remain and views of the site would continue to consist of the fence intermittently covered with vines and shrubs that surround the site. The No Project/No Development alternative would not have an adverse effect on a scenic vista nor would it degrade the existing visual character or quality of the site. It would not introduce a new source of light or glare, nor would it introduce elements that would cast shadows or create wind.

h. Cultural and Paleontological Resources. Implementation of the No Project/No Development alternative would not result in the demolition of the historic garden or compromise the integrity of setting of the 244 Lakeside Drive Building Group API, the 244 Lakeside Drive apartment building and the Regillus Apartment Building. As such, this alternative would not result in significant and unavoidable impacts to historic resources. Since the No Project/No Development alternative would not involve any excavation or construction, it would not result in ground borne vibration levels or construction activities that could impact adjacent historic structures. Additionally, since no ground-disturbing activities would occur as part of the No Project/No Development alternative, subsurface archaeological, paleontological, and Native American resources that could occur within the project site would not be disturbed. Therefore, the No Project/No Development alternative would result in less-than-significant impacts to cultural and paleontological resources.

i. Biological Resources. The project site consists of an English garden in Downtown Oakland. No native plant species are present; the entire site is comprised of plant species that have been planted for their aesthetic value. The project site does include protected trees as defined in Chapter 12.36 of

the Oakland Municipal Code. The No Project/No Development alternative would not require the removal of any protected trees nor would it potentially impact trees adjacent to the project site.

j. Soils, Geology and Seismicity. Under the No Project/No Development alternative, no new residential units or commercial uses would be developed. People or structures would not be exposed to substantial risk of loss, injury or death involving rupture of an earthquake, strong seismic ground shaking, or seismic-related ground failure. This alternative would not result in soil erosion or the loss of topsoil.

k. Hydrology and Water Quality. The No Project/No Development alternative would not result in the construction of a residential tower and subsurface parking garage, or any other structures on the project site. The site would continue to be primarily pervious surfaces; there would be no changes to hydrology or water quality on the site. Impacts to hydrology and water quality would be less than significant.

l. Public Health and Hazards. Implementation of the No Project/No Development alternative would keep the site as a historic garden and would not involve any demolition, excavation or construction activities. As such, this alternative would not create hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials, or create significant hazards to the public or to the environment through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment. This alternative would also not expose construction workers to hazardous materials from contaminants in the soil or groundwater during construction activities. Therefore, the No Project/No Development alternative would not result in any impacts related to public health and hazards.

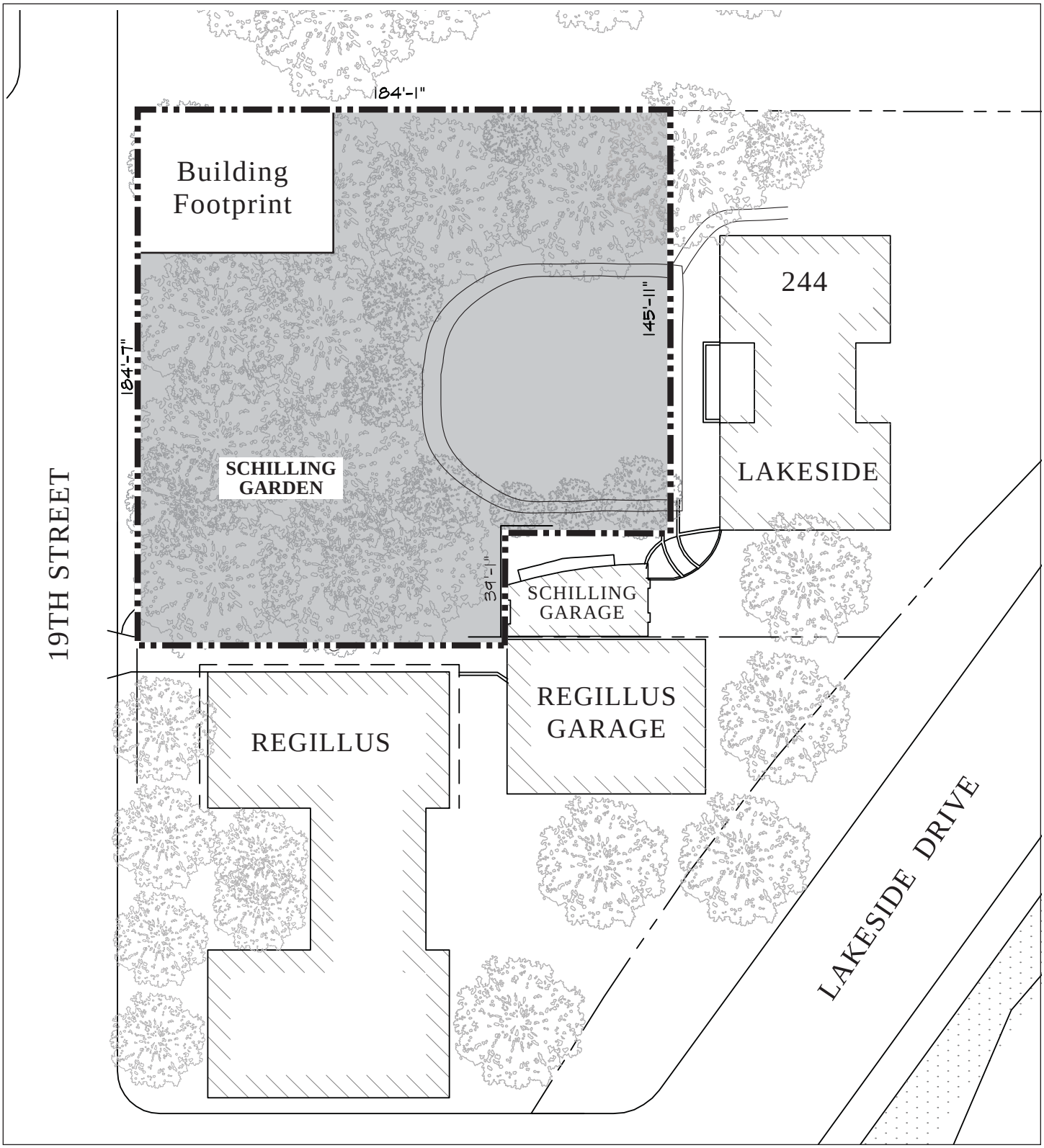
m. Utilities and Infrastructure. The No Project/No Development alternative would not result in development of the project site. As such, this alternative would not increase demand for water such that there would be insufficient water supplies, exceed the capacity of the wastewater treatment provider, or require expansion or construction of new infrastructure.

n. Public Services and Recreation. The No Project/No Development alternative would not result in development of the project site. As such, this alternative would not increase demand for police, fire, school, library, or recreational facilities.

SOUTHWEST CORNER DEVELOPMENT ALTERNATIVE

1. Principal Characteristics

The Southwest Corner Development alternative assumes that a building would be constructed on the southwest corner of the site, near the intersection of Alice Street and 19th Street, as shown in Figure V-1. Currently, this portion of the site is occupied by two non-historic greenhouses and the building would have a footprint similar to that of the existing structures, approximately 3,500 square feet. The three-story building would contain six residential units and six parking spaces. The first floor of the building would contain a parking garage with six parking spaces. The second and third stories of the building would contain a total of six dwelling units, with three units on each floor. Cafe uses are not proposed as part of this alternative. The Schilling Garden would remain a private garden under this alternative. Table V-1 includes a summary of potential impacts resulting from implementation of the Southwest Corner Development alternative and the proposed project.



LSA

FIGURE V-1

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PROJECT SITE

0 30 60
FEET

Emerald Views Residential Development EIR
Southwest Corner Development Alternative
Building Footprint

SOURCE: CAREY & CO.; LSA ASSOCIATES, INC., 2009.
I:\SDZ0601 19th street\figures\Fig_VI.ai (11/25/09)

The Southwest Corner Development alternative would not achieve the following objectives of the proposed project: develop a high-rise residential tower with approximately 370 residential units; assist the Central Business District in becoming a premier location in the region for urban residential living; or architecturally complement the surrounding historic buildings and adjacent high-rises by adding to the vertical heterogeneity consistent with modern attractive skylines. While this alternative would utilize a small building footprint, it would not allow for the creation of ample on-site open space accessible to the public and would not provide a skyway on top of the building where anyone can have a 360 degree view of Oakland, the Bay, and Lake Merritt. It would provide in-fill development within close proximity to jobs and infrastructure and would enhance the street experience; however, not to the same degree as the proposed project.

2. Analysis of the Southwest Corner Development Alternative

The Southwest Corner Development alternative is evaluated for all the environmental topics analyzed in this EIR.

a. Land Use. The Southwest Corner Development alternative would introduce new residential land uses to the project site. Like the proposed project, the Southwest Corner Development alternative would not conflict with surrounding residential, open space and commercial/office land uses, nor would it result in impacts that would physically divide an established community, not would this alternative be inconsistent with the Historic Preservation Element due to retention of the Schilling Garden. Therefore, like the proposed project, this alternative would not result in any significant land use impacts.

b. Planning Policy. A small residential population would be added to this downtown site and the historic Schilling Garden would not be removed under the Southwest Corner Development alternative. Implementation of the proposed project would further many goals of the General Plan, including creating a high-density, mixed-use urban center; that implementation of the Southwest Corner Development alternative would not. However, the proposed project conflicts with other goals of the General Plan, including the preservation and protection of properties of historic interest or value. The Southwest Corner Development alternative would be consistent with the Historic Preservation Element of the General Plan.

c. Population and Housing. The Southwest Corner Development alternative would introduce 6 residential units to the project site, which would directly increase the City's population by approximately 16 persons (6 units x 2.61 persons per unit). Unlike the proposed project, this alternative does not assume any commercial space on the site, and as such, would not result in the creation of jobs or the indirect population growth associated with new jobs. The proposed project would add 986 residents to the City. The level of population growth that would occur under this alternative or under the proposed project has been accounted for in both the City's General Plan and ABAG projections. In addition, neither the Southwest Corner Development alternative nor the proposed project would displace housing units or alter the City's jobs/housing balance.

d. Transportation and Circulation. The Southwest Corner Development alternative includes the development of six residential units. The AM and PM peak hour trips generated by this project in Downtown Oakland would likely not change the existing traffic conditions in or around the project site and would not result in any impacts related to transportation and circulation. The proposed project would result in impacts at two intersections, both of which, with mitigation measures would be

reduced to less-than-significant levels. The proposed curb cut/drop-off area would cause an encroachment onto public right-of-way that would be unsafe for pedestrians. However, with mitigation this pedestrian safety issue would be removed. In addition, the proposed project would have a significant unavoidable impact at an additional intersection and a cumulatively considerable significant unavoidable impact to the I-880 roadway segment from Oak Street to 5th Street and at San Pablo Avenue to West Grand.[5]

e. Air Quality and Greenhouse Gas Emissions. The Southwest Corner Development alternative would involve the demolition of the existing greenhouses and construction of a new three-story residential building. The City's Standard Conditions of Approval regarding construction dust control and construction emissions would reduce impacts to air quality during construction, including exposure to toxic air contaminants, to less-than-significant levels for this alternative, as well as the proposed project. However, construction of this alternative would be shorter in duration than the proposed project, and impacts to air quality during construction would also be less. Similar to the proposed project, vehicular traffic generated during operation of the Southwest Corner Development alternative would emit carbon monoxide (CO) into the air along roadway segments and near intersections. However, the traffic and associated CO generated from the 6 units under this alternative would be considerably less than that generated from the 370 units under the proposed project. Therefore, the Southwest Corner Development alternative would have a less-than-significant impact related to construction, operational, and greenhouse gas emissions.

f. Noise and Vibration. Under this alternative, demolition and construction activities would take place on the southwest corner of site, greater than 100 feet from the 244 Lakeside Drive apartment building or the Regillus. Similar to the proposed project, it is assumed that pile driving would not be used for this building foundation. The City's Standard Conditions of Approval regarding construction hours of operation and noise would reduce noise impacts during construction to less-than-significant levels for this alternative, as well as the proposed project. However, construction of this alternative would be shorter in duration than the proposed project, and noise impacts during construction would also be less. Furthermore, this alternative would locate a building further away from the existing residential buildings. As traffic generated by the proposed project would not be significant enough to result in any perceptible changes in the ambient noise levels in the project vicinity, so would traffic noise generated by the considerably smaller Southwest Corner Development alternative. The City's Standard Conditions of Approval regarding vibration levels adjacent to historic structures require the project applicant to retain an engineer to develop threshold levels of vibration which, if reached, could cause damage to the adjacent historic structures, and to use construction methods that would ensure those thresholds are not met. Both the Southwest Corner Development alternative and the proposed project would have less-than-significant noise and vibration impacts.

g. Aesthetics, Shadow and Wind. The Southwest Corner Development alternative would introduce a three-story (approximately 40 foot tall) building with a footprint of 3,500 square feet to the 31,827 square foot project site; the existing visual character of the project site would remain. The height and footprint of this building would be considerably smaller than the 42-story proposed project, as well as the surrounding buildings. This alternative would not have an adverse effect on a scenic vista nor would it degrade the existing visual character or quality of the site. The proposed project would also have a less-than-significant impact on aesthetics.

[5] Ibid.

It is unlikely given the small size of the building and its location amid the garden trees that the Southwest Corner Development alternative would introduce a new source of light or glare to the project site. However, any potential impacts would be reduced to less-than-significant levels through implementation of the City's Standard Condition of Approval addressing lighting plans and bird collision reduction. As this development alternative would be approximately 40 feet tall, it is not anticipated to cast significant shadows on solar collectors or parks that would aversely impair their use, or historic resources that would impair their significance. It is not anticipated that this alternative would result in winds that exceed the City standards.

h. Cultural and Paleontological Resources. This alternative involves the construction of a three-story building on the southwest corner of the site, an area currently developed with two non-historic greenhouses. Implementation of the Southwest Corner Development alternative would not result in the demolition of the historic Schilling Garden or compromise the integrity of the 244 Lakeside Drive Building Group API, the 244 Lakeside Drive apartment building and the Regillus Apartment Building. As such, this alternative would result in less-than-significant impacts to historic resources. The proposed project would result in significant unavoidable impacts to these historic resources and would not result in a cumulative impact to the 244 Lakeside Drive Building Group.

The Southwest Corner Development alternative would require demolition, grading, and possibly excavation activities, although to a lesser extent, and at a greater distance from adjacent historic structures, than the proposed project. Mitigation measures developed for the proposed project to reduce potential impacts to adjacent historic structures from construction activities to a less-than-significant level would not be required for this alternative. City Standard Conditions of Approval regarding archaeological, paleontological and Native American resources would be implemented by both the Southwest Corner Development alternative (although to a lesser extent) and the proposed project to reduce potential impacts to a less-than-significant level.

i. Biological Resources. No native plant species are present on the project site; the entire site is comprised of plant species that have been planted for their aesthetic value. The project site does include protected trees as defined in Chapter 12.36 of the Oakland Municipal Code. The Southwest Corner Development alternative may require the removal of one protected tree. Development of the proposed project would result in the removal of 30 protected trees. Both the Southwest Corner Development alternative and the proposed project could impact protected trees adjacent to the site. With implementation of the City's Standard Conditions of Approval and Mitigation Measure BIO-1, these impacts would be reduced to a less-than-significant level.

j. Soils, Geology and Seismicity. Any development on the site would be subject to seismic hazards, impacts from expansive soils, and settlement and differential settlement. The Southwest Corner Development alternative, the proposed project, and any other development requesting a Tentative Tract or Tentative Parcel Map would be subject to the City's Standard Condition of Approval requiring a soils report and a geotechnical report to ensure soil, geology and seismicity related impacts would be less than significant. In addition, all projects requesting a grading permit would be subject to the City's Standard Condition of Approval requiring an erosion and soil control plan. Under the Southwest Corner Development alternative, less grading would be required than with the proposed project, and excavation and dewatering during construction would not be required; however, both would result in less-than-significant soil, geology and seismicity related impacts.

k. Hydrology and Water Quality. The Southwest Corner Development alternative would result in the construction of 6-unit residential development on the site of the existing greenhouses. The site would continue to be primarily pervious surfaces. Implementation of the City's Standard Conditions of Approval for erosion and sediment control, stormwater pollution management, maintenance of stormwater treatment measures, and confirmation of stormwater and sewer capacity would reduce potential impacts to a less-than-significant level for both this alternative and the proposed project. The project site contains one known water supply well, which is near the greenhouses. Mitigation Measure HYD-1 requires the well to be properly abandoned, resulting in a less-than-significant impact.

l. Public Health and Hazards. The use of the project site as an English Garden since the early 1900s may have involved the use of horticultural chemicals. In addition, the project site includes structures first noted in land use records from 1958, structures which may include lead paint and/or asbestos-containing materials. This alternative includes demolition, grading and construction, albeit on a much smaller scale than the proposed project. This alternative would be subject to the same Standard Conditions of Approval as the proposed project regarding hazards best management practices; asbestos removal in structures; Phase I and/or Phase II reports; lead-based paint/coatings, asbestos or PCB occurrence assessment; environmental site assessment reports remediation; and lead-based paint remediation. Implementation of these conditions would reduce potential public health and hazards impacts to less-than-significant levels.

m. Utilities and Infrastructure. This alternative would develop the southwest corner of the site with a 6-unit residential building. This alternative would result in a marginal increase in demand for water supply, wastewater collection and treatment, and solid waste collection and disposal. For both this alternative and the proposed project, impacts to utilities and infrastructure would be less than significant.

n. Public Services and Recreation. This alternative would result in a marginal increase in demand for police, fire, school, library and recreation services due to the reduced number of units proposed. For both this alternative and the proposed project, impacts to public services and recreation facilities would be less than significant.

REDUCED HEIGHT ALTERNATIVE

1. Principal Characteristics

The Reduced Height alternative would develop the project site with a 12-story, 90-unit, residential building with the same setbacks and footprint (of approximately 12,200 square feet) as the proposed project. Similar to the proposed project, the ground floor would include a cafe, as well as lobby area and management offices, and the 2nd and 3rd floors would include (for use by residents only) an interior swimming pool, whirlpool, gym and locker rooms, party room and a meeting room. Floors 4 through 12 would include the residential units, with approximately 10 one or two bedroom units per floor. Two levels of sub-surface parking would be constructed to provide approximately 90 off-street parking spaces, for a parking ratio of one parking space per dwelling unit. The parking spaces would be arranged in a similar configuration as the proposed project; however, the footprint for the parking garage would be reduced as fewer parking spaces would be required per level. Ingress and egress to the parking garage would be the same as that of the proposed project, from 19th Street via a sloped driveway on the southern portion of the site. Table V-1 includes a summary of potential impacts resulting from implementation of the Reduced Height alternative and the proposed project.

The Reduced Height alternative would not achieve the objective of the proposed project to develop a high-rise residential tower with approximately 370 residential units. This alternative would assist the Central Business District in becoming a premier location in the region for urban residential living; architecturally complement the surrounding historic buildings and adjacent high-rises by adding to the vertical heterogeneity consistent with modern attractive skylines; provide in-fill development within close proximity to jobs and infrastructure; and, enhance the street experience; however, not to the same degree as the proposed project. This alternative would utilize the same building footprint as the proposed project and as such would allow for the creation of ample on-site open space accessible to the public. It would not, however, provide a skyway on top of the building where anyone can have a 360 degree view of Oakland, the Bay, and Lake Merritt.

2. Analysis of the Reduced Height Alternative

The Reduced Height alternative is evaluated for all the environmental topics analyzed in this EIR.

a. Land Use. The Reduced Height alternative would introduce new residential land uses to the project site. Like the proposed project, the Reduced Height alternative would not conflict with surrounding residential, open space and commercial/office land uses, nor would it result in impacts that would physically divide an established community. Therefore, like the proposed project, this alternative would not result in any significant land use impacts.

b. Planning Policy. Under the Reduced Height alternative, a residential population would be added to this downtown site and, while the historic Schilling Garden would be removed resulting in a significant and unavoidable impact to this resource, impacts to the adjacent historic structures would be less than significant. Implementation of the proposed project would further many goals of the General Plan, including creating a high-density, mixed-use urban center; implementation of the Reduced Height alternative would also further these goals, but not to the same degree as the proposed project. The proposed project conflicts with other goals of the General Plan, including the preservation and protection of properties of historic interest or value. The Reduced Height alternative would also conflict goals related to historic preservation, but not to the same degree as the proposed project.

c. Population and Housing. Under the Reduced Height alternative, 90 residential units would be introduced to the project site, which would directly increase the population of Oakland by approximately 235 persons (90 units x 2.61 persons per unit). Similar to the proposed project, this alternative would generate approximately 16 jobs associated with the cafe and building operation and maintenance. Assuming each new job translates into a new resident in Oakland, this alternative has the potential to add 251 residents to the City. The proposed project would add 986 residents to the City. Similar to the proposed project, this level of population growth has been accounted for in both the City's General Plan and ABAG projections. In addition, neither the Reduced Height alternative nor the proposed project would displace housing units or alter the City's jobs/housing balance.

d. Transportation and Circulation. Implementation of the Reduced Height alternative would result in a 12-story building containing 90 dwelling units, 280 units fewer than the proposed project. The proposed project is expected to generate approximately 159 vehicle trips during the AM peak hour and 187 trips during the PM peak hour; the Reduced Height Alternative would result in approximately 75 percent fewer trips, or 40 vehicle trips during the AM peak hour and 46 trips during the PM peak hour. The proposed project would result in impacts at two intersections, Oak Street/7th Street and Harrison Street/Lakeside Drive, both of which, with mitigation measures would be reduced to

less-than-significant levels. The Reduced Height alternative would result in a significant impact at the Harrison Street/Lakeside Drive intersection during the PM peak hour. With mitigation, this impact would be reduced to a less-than-significant level. The curb cut/drop-off area included as part of the proposed project would likely not be included as part of the Reduced Height alternative. The curb cut would cause an encroachment onto public right-of-way that would be unsafe for pedestrians. However, with mitigation this pedestrian safety issue would be removed. In addition, the proposed project would have a significant unavoidable impact to the intersection of San Pablo Avenue/West Grand Avenue[6] and a cumulatively considerable significant unavoidable impact to the I-880 roadway segment from Oak Street to 5th Street.[7] Impacts to this intersection and roadway segment would be less than significant under this alternative.

e. Air Quality and Greenhouse Gas Emissions. The Reduced Height alternative would develop the project site with a 12-story, 90-unit, residential building with the same setbacks and footprint (of approximately 12,200 square feet) as the proposed project. The City's Standard Conditions of Approval regarding construction dust control and construction emissions would reduce impacts to air quality during construction, including exposure to toxic air contaminants, to less-than-significant levels for this alternative, as well as the proposed project. However, construction of this alternative would be shorter in duration than the proposed project, and impacts to air quality during construction would also be less. Similar to the proposed project, vehicular traffic generated during operation of the Reduced Height alternative would emit carbon monoxide (CO) into the air along roadway segments and near intersections. However, the traffic and associated CO generated from the 90 units under this alternative would be less than that generated from the 370 units under the proposed project. Therefore, the Reduced Height alternative would have a less-than-significant impact related to construction, operational, and greenhouse gas emissions.

f. Noise and Vibration. The Reduced Height alternative would develop a 12-story residential building with the same building setbacks and footprint as the proposed project. The two levels of subsurface parking would have a smaller footprint than the five levels of subsurface parking required for the proposed project. The City's Standard Conditions of Approval regarding construction hours of operation and noise would reduce noise impacts during construction to less-than-significant levels for this alternative, as well as the proposed project. However, construction of this alternative would be shorter in duration than the proposed project, and noise impacts during construction would also be less. As traffic generated by the proposed project would not be significant enough to result in any perceptible changes in the ambient noise levels in the project vicinity, so would traffic noise generated by the smaller Reduced Height alternative. The City's Standard Conditions of Approval regarding vibration and adjacent historic structures requires the project applicant to retain an engineer to develop threshold levels of vibration which, if reached, could cause damage to the adjacent historic structures, and to use construction methods that would ensure those thresholds are not met. Both the Reduced Height alternative and the proposed project would have less-than-significant noise and vibration impacts.

g. Aesthetics, Shadow and Wind. The Reduced Height alternative would introduce a 12-story (approximately 144 feet tall) building with a footprint of 12,200 square feet on a 31,827 square foot site that currently contains a private English garden. Views of the project site consist primarily of the

[6] Ibid.

[7] Ibid.

fence, intermittently covered with vines and shrubs, that surrounds the site. This building developed under the Reduced Height alternative would be similar in size to the adjacent apartment buildings and smaller in size than several of the mid-rise office buildings in project vicinity. This alternative would not have an adverse effect on a scenic vista nor would it degrade the existing visual character or quality of the site. The proposed project would also have a less-than-significant impact on aesthetics.

Both the Reduced Height alternative and the proposed project would introduce a new source of light or glare to the project site. Any potential impacts would be reduced to less-than-significant levels through implementation of the City's Standard Condition of Approval addressing lighting plans and bird collision reduction. As this development alternative would be approximately 144 feet in height, a height similar to that of adjacent structures, it is not anticipated to cast significant shadows on solar collectors or parks that would aversely impair their use, or historic resources that would impair their significance. Shadows cast by the proposed 457 foot tall project would result in less-than-significant shadow impacts. This alternative is greater than 100 feet tall and would require a wind analysis. Similar to the proposed project, mitigation measures such as landscaping and design features may be recommended in the wind study. However, until these features are reviewed and finalized, it cannot be determined if wind speeds would be reduced below City thresholds.

h. Cultural and Paleontological Resources. The Reduced Height alternative assumes the construction of a 12-story building on the project site, with the same building footprint as the proposed project. This alternative would require the removal of the Schilling Garden, which would result in the same significant and unavoidable impact as the proposed project. Under this alternative, the building would be of a similar scale as the adjacent historical structures but would still compromise their historic integrity. Impacts to the adjacent historic structures and the 244 Lakeside Drive Building Group API would be significant and unavoidable. This alternative would also result in a cumulative impact to the API. The Reduced Height alternative would require demolition, grading, and excavation activities, although to a lesser extent than the proposed project. Mitigation measures developed for the proposed project to reduce potential impacts to adjacent historic structures from construction activities to a less-than-significant level would be required for this alternative as well. City Standard Conditions of Approval regarding archaeological, paleontological and Native American resources would be implemented by both the Reduced Height alternative and the proposed project to reduce potential impacts to a less-than-significant level.

i. Biological Resources. Under the Reduced Height alternative, the project site would be developed with a building that has the same footprint as the proposed project, but the footprint for the parking garage would be reduced as fewer parking spaces would be required. With a reduced footprint for the parking garage, the development of this alternative may require the removal of fewer than the 30 protected trees required by the proposed project. However, implementation of the City's Standard Conditions of Approvals addressing tree removal during breeding season, a tree removal permit, tree replacement planting and tree protection during construction, would reduce this impact to a less-than-significant level. Both the Reduced Height alternative and the proposed project could impact protected trees adjacent to the site. With implementation of Mitigation Measure BIO-1, these impacts would be reduced to a less-than-significant level.

j. Soils, Geology and Seismicity. Any development on the site would be subject to seismic hazards, impacts from expansive soils, and settlement and differential settlement. The Reduced Height alternative, the proposed project, and any other development requesting a Tentative Tract or

Tentative Parcel Map would be subject to the City's Standard Condition of Approvals requiring a soils report and a geotechnical report to ensure soil, geology and seismicity related impacts would be less than significant. In addition, all projects requesting a grading permit would be subject to the City's Standard Condition of Approval requiring an erosion and soil control plan. Similar to the proposed project, excavation and dewatering during construction would be required, but potential impacts would be reduced to a less-than-significant level through a Standard Condition of Approval. Under the Reduced Height alternative, given the smaller parking footprint, less excavation and grading would be required than with development of the proposed project; however, both would result in less-than-significant soil, geology and seismicity related impacts.

k. Hydrology and Water Quality. The Reduced Height alternative would develop the project site with a building that has the same footprint as the proposed project and would result in similar changes to the quality, amount and direction of runoff from the project site. Construction and operation of the proposed project could impact hydrology and water quality. Implementation of the City's Standard Conditions of Approval for erosion and sediment control, , stormwater pollution management, maintenance of stormwater treatment measures, and confirmation of stormwater and sewer capacity would reduce potential impacts to a less-than-significant level for both this alternative and the proposed project. The project site contains a water supply well; for both this alternative and the proposed project, Mitigation Measure HYD-1 requires the well to be properly abandoned, resulting in a less-than-significant impact.

l. Public Health and Hazards. The use of the project site as a garden may have involved the use of horticultural chemicals. Due to the age of the structures on the project site, they may include lead paint and/or asbestos-containing materials. Similar to the proposed project, this alternative includes demolition, grading and construction activities. This alternative would be subject to the same Standard Conditions of Approval as the proposed project regarding hazards best management practices; asbestos removal in structures; Phase I and/or Phase II reports; lead-based paint/coatings, asbestos or PCB occurrence assessment; environmental site assessment reports remediation; lead-based paint remediation; and fire safety. Implementation of these conditions would reduce potential public health and hazards impacts to less-than-significant levels.

m. Utilities and Infrastructure. The Reduced Height alternative would develop the project site with a cafe and 90 residential units. As described above, this alternative has the potential to add 251 residents to the City. This alternative would result in an incremental increase in demand for water supply, wastewater collection and treatment, and solid waste collection and disposal. Similar to the proposed project, impacts to utilities and infrastructure as a result of this alternative would be less than significant.

n. Public Services and Recreation. This alternative would result in an incremental increase in demand for police, fire, school, library and recreation services. Similar to the proposed project, impacts to public services and recreation facilities as a result of this alternative would be less than significant.

ZONING COMPLIANT ALTERNATIVE

1. Principal Characteristics

The Zoning Compliant alternative assumes a high-rise residential building containing approximately 350 dwelling units, with the same height and scale of the building as the proposed project, would be developed on the project site. This building would be designed in accordance with development standards allowed in the current zoning designations of R-90/S-4/S-17 (Downtown Apartments Residential, Design Review, and Downtown Residential Usable Open Space) in effect at the time of project application completeness. The Zoning Compliant alternative would meet the off-street parking requirements of these zones, and would not require parking variances requested by the proposed project. The Zoning Compliant alternative would not contain a café or any other commercial uses, and would not require a variance for Outside General Food Sales or for the associated required parking.

In order to comply with the zoning requirements, this alternative would provide 350 parking spaces, for a one-to-one parking ratio. This alternative assumes the use of an independently-accessible mechanical parking system in order to provide all 350 spaces and to avoid the non-independently accessible parking stacker variance requested by the proposed project. In order to accommodate this parking system, the floor-to-floor heights of the sub-surface parking levels would need to be increased to provide the required clearance for the system, which would result in an additional 12 feet of excavation, or excavation that would extend approximately 72 feet below the existing ground surface. Ingress and egress to the parking garage would be the same as that of the proposed project, from 19th Street via a sloped driveway on the southern portion of the site. Two off-street loading areas would also be provided in the area that the proposed project assumed would be café space. The loading areas are show in Figure V-2. Table V-1 includes a summary of potential impacts resulting from implementation of the Zoning Compliant alternative and the proposed project.

While this alternative would develop a high-rise residential tower with approximately 350 residential units (and not the 370 units of the proposed project), it would achieve most of the objectives of the proposed project. It would design a project that assists the Central Business District in becoming a premier location in the region for urban residential living and a project that architecturally complements the surrounding historic buildings and adjacent high-rises by adding to the vertical heterogeneity consistent with modern attractive skylines. It would utilize a small building footprint to allow for the creation of ample on-site open space accessible to the public and would provide a skyway on top of the building where anyone can have a 360 degree view of Oakland, the Bay, and Lake Merritt. This alternative would provide in-fill development within close proximity to jobs and existing infrastructure. It would enhance the street experience and pedestrian presence in the area; however, without the cafe and with 20 fewer units, not to the same degree as the proposed project.

2. Analysis of the Zoning Compliant Alternative

The Zoning Compliant alternative is evaluated for all the environmental topics analyzed in this EIR.

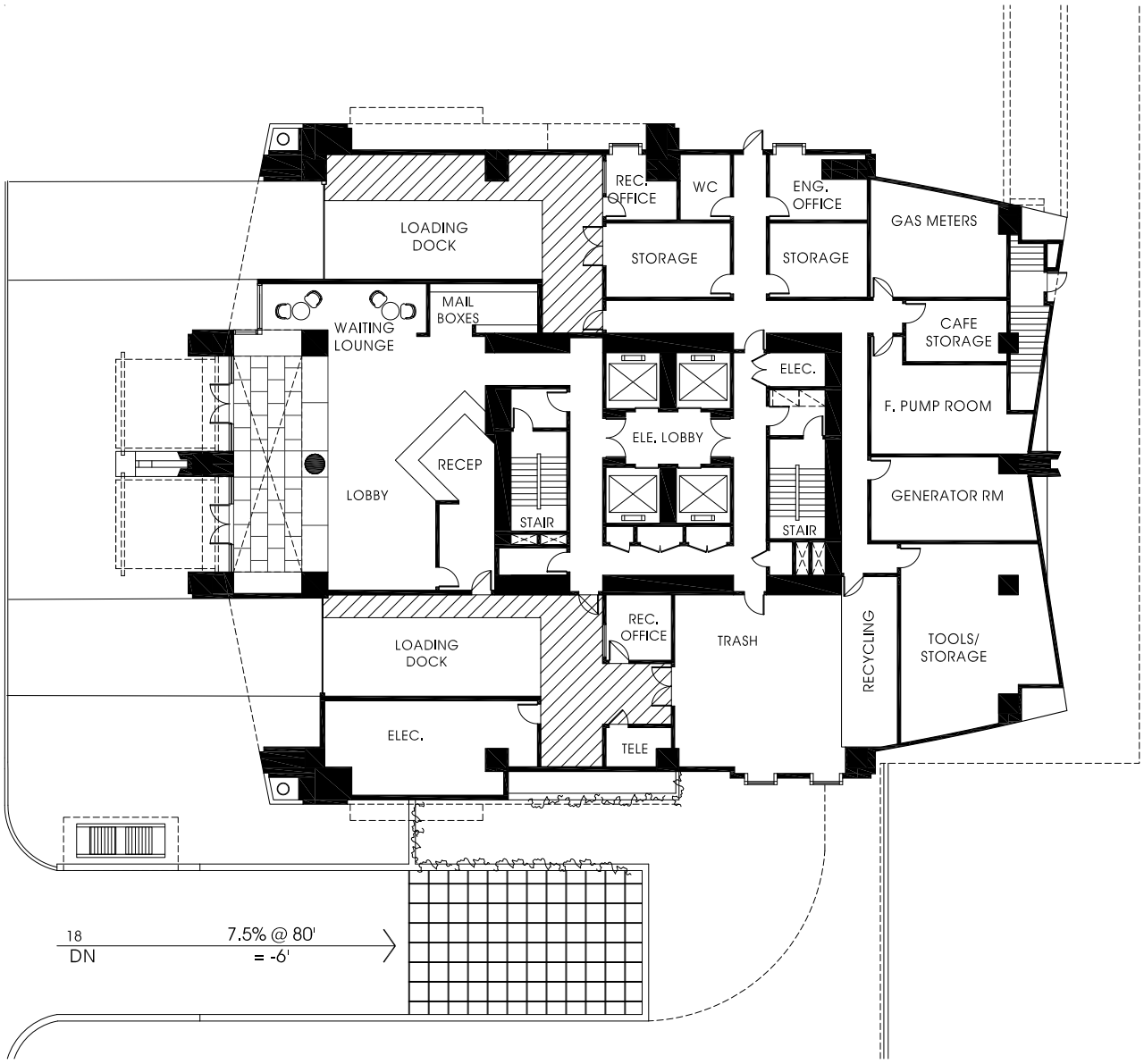

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FIGURE V-2

NOT TO SCALE

SOURCE: IB+A ARCHITECTURE, 2009.

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Emerald Views Residential Development EIR

Zoning Compliant Alternative

Lobby Level Floor Plan

a. Land Use. The Zoning Compliant alternative would introduce new residential land uses to the project site. Like the proposed project, the Zoning Compliant alternative would not conflict with surrounding residential, open space and commercial/office land uses, nor would it result in impacts that would physically divide an established community. Therefore, like the proposed project, this alternative would not result in any significant land use impacts.

b. Planning Policy. Under both the proposed project and the Zoning Compliant alternative, a residential population would be added to this downtown site, the historic Schilling Garden would be removed, and historic resources adjacent to the site would be impacted. Implementation of the proposed project and the Zoning Compliant alternative would further many goals of the General Plan, including creating a high-density, mixed-use urban center. However, both the proposed project and the Zoning Compliant alternative would conflict with other goals of the General Plan, including the preservation and protection of properties of historic interest or value.

c. Population and Housing. Under the Zoning Compliant alternative, 350 residential units would be introduced to the project site, which would directly increase the population of Oakland by approximately 914 persons (350 units x 2.61 persons per unit). This alternative would generate approximately 12 jobs associated with building operation and maintenance. A ground floor cafe is not proposed and no retail or commercial jobs would be generated. Assuming each new job translates into a new resident in Oakland, this alternative has the potential to add 926 residents to the City. The proposed project would add 986 residents to the City. Similar to the proposed project, this level of population growth has been accounted for in both the City's General Plan and ABAG projections. In addition, neither the Zoning Compliant alternative nor the proposed project would displace housing units or alter the City's jobs/housing balance.

d. Transportation and Circulation. Implementation of the Zoning Compliant alternative would result in a high-rise building containing approximately 350 dwelling units, 20 units fewer than the proposed project. This alternative would generate slightly fewer AM and PM peak hour trips. The proposed project would result in impacts at two intersections, Oak Street/7th Street and Harrison Street/Lakeside Drive, and it is likely that the Zoning Compliant alternative would impact these intersections as well. With mitigation measures, impacts to these intersections would be reduced to less-than-significant levels. In addition, the proposed project would have a significant unavoidable impact to the intersection of San Pablo Avenue/West Grand Avenue[8] and a cumulatively considerable significant unavoidable impact to the I-880 roadway segment from Oak Street to 5th Street, and it is likely that the Zoning Compliant alternative would impact these intersections as well.[9]

e. Air Quality and Greenhouse Gas Emissions. The Zoning Compliant alternative would develop the project site with a structure similar to that of the proposed project, but would require an additional 12 feet of excavation. The City's Standard Conditions of Approval regarding construction dust control and construction emissions would reduce impacts to air quality during construction, including exposure to toxic air contaminants, to less-than-significant levels for this alternative, as well as the proposed project. The additional 12 feet of excavation would likely not increase these impacts significantly. Similar to the proposed project, vehicular traffic generated during operation of the Zoning Compliant alternative would emit carbon monoxide (CO) into the air along roadway segments and near

[8] Ibid.

[9] Ibid.

intersections. Both the proposed project and the Zoning Compliant alternative would have a less-than-significant greenhouse gas impact.

f. Noise and Vibration. As noted above, the Zoning Compliant alternative would develop the project site with a structure similar to that of the proposed project, but would require an additional 12 feet of excavation. The City's Standard Conditions of Approval regarding construction hours of operation and noise would reduce noise impacts during construction to less-than-significant levels for this alternative, as well as the proposed project. As traffic generated by the proposed project would not be significant enough to result in any perceptible changes in the ambient noise levels in the project vicinity, so would traffic noise generated by the slightly smaller Zoning Compliant alternative. The City's Standard Conditions of Approval regarding vibration and adjacent historic structures require the project applicant to retain an engineer to develop threshold levels of vibration which, if reached, could cause damage to the adjacent historic structures, and to use construction methods that would ensure those thresholds are not met. Both the Zoning Compliant alternative and the proposed project would have less-than-significant noise and vibration impacts.

g. Aesthetics, Shadow and Wind. Scenic vistas in the project vicinity include views of Lake Merritt and the Oakland Hills. Both the proposed project and the Zoning Compliant alternative would increase views across the project site and would provide a viewing area, open to the public, on the 40th floor. Neither the proposed project nor this alternative would have an adverse effect on a scenic vista. Implementation of the proposed project or the Zoning Compliant alternative would change the visual character of the project site through the demolition of a garden and the construction of a 42-story residential tower. However, the project site is in a developed urban area of Oakland and implementation of either development would not degrade the existing visual character or quality of the site. The proposed project or the Zoning Compliant alternative would have a less-than-significant impact on aesthetics.

Both the Zoning Compliant alternative and the proposed project would introduce a new source of light or glare to the project site. Any potential impacts would be reduced to less-than-significant levels through implementation of the City's Standard Condition of Approval addressing lighting plans and bird collision reduction. Both the proposed project and the Zoning Compliant alternative would be 457 feet in height. The shadow patterns developed for the proposed project in Chapter IV.G, Aesthetics, Shadow and Wind also reflect the shadow patterns of the Zoning Compliant alternative. Neither the proposed project nor this alternative would cast significant shadows on solar collectors or parks that would aversely impair their use, or historic resources that would impair their significance. This alternative is greater than 100 feet tall and would require a wind analysis. Similar to the proposed project, mitigation measures, such as landscaping and design features may be recommended in the wind study. However, until these features are reviewed and finalized, it cannot be determined if wind speeds would be reduced below the City thresholds. This project impact, as well as cumulative impact, would still be conservatively deemed significant and unavoidable.

h. Cultural and Paleontological Resources. The Zoning Compliant alternative assumes the same development envelope as the proposed project. This alternative would require the removal of the Schilling Garden, which would result in the same significant and unavoidable impact as the proposed project. This alternative would also compromise the integrity of the adjacent historic structures and the API, which would result in the same significant and unavoidable impact as the proposed project. This alternative would also result in a cumulative impact to the 244 Lakeside Drive Building Group

API. The Zoning Compliant alternative would require demolition, grading, and excavation activities to a similar but slightly greater extent than the proposed project. Mitigation measures developed for the proposed project to reduce potential impacts to adjacent historic structures from construction activities to a less-than-significant level would be required for this alternative as well. City Standard Conditions of Approval regarding archaeological, paleontological and Native American resources would be implemented by both the Zoning Compliant alternative and the proposed project to reduce potential impacts to a less-than-significant level.

i. Biological Resources. As noted above, the Zoning Compliant alternative assumes the same development envelope as the proposed project. Like the proposed project, the development of this alternative would require the removal of 30 protected trees. However, implementation of the City's Standard Conditions of Approval addressing tree removal during breeding season, a tree removal permit, tree replacement planting and tree protection during construction, would reduce this impact to a less-than-significant level. Both the Zoning Compliant alternative and the proposed project could impact protected trees adjacent to the site. With implementation of Mitigation Measure BIO-1, these impacts would be reduced to a less-than-significant level.

j. Soils, Geology and Seismicity. Any development on the site would be subject to seismic hazards, impacts from expansive soils, and settlement and differential settlement. The Zoning Compliant alternative, the proposed project, and any other development requesting a Tentative Tract or Tentative Parcel Map would be subject to the City's Standard Conditions of Approval requiring a soils report and a geotechnical report to ensure soil, geology and seismicity related impacts would be less than significant. In addition, all projects requesting a grading permit would be subject to the City's Standard Condition of Approval requiring an erosion and soil control plan. Similar to the proposed project, dewatering during construction would be required, but potential impacts would be reduced to a less-than-significant level through a Standard Condition of Approval. Under the Zoning Compliant alternative, more excavation and grading would be required than with development of the proposed project; however, both would result in less-than-significant soil, geology and seismicity related impacts.

k. Hydrology and Water Quality. The Zoning Compliant alternative would develop the project site with a building that has the same footprint as the proposed project and would result in similar changes to the quality, amount and direction of runoff from the project site. Construction and operation of the proposed project could impact hydrology and water quality. Implementation of the City's Standard Conditions of Approval for erosion and sediment control, stormwater pollution management, maintenance of stormwater treatment measures, and confirmation of stormwater and sewer capacity would reduce potential impacts to a less-than-significant level for both this alternative and the proposed project. The project site contains a water supply well; for both this alternative and the proposed project, Mitigation Measure HYD-1 requires the well to be properly abandoned, resulting in a less-than-significant impact.

l. Public Health and Hazards. The use of the project site as a garden may have involved the use of horticultural chemicals. Due to the age of the structures on the project site, they may include lead paint and/or asbestos-containing materials. Similar to the proposed project, the Zoning Compliant alternative includes demolition, grading and construction activities. This alternative would be subject to the same Standard Conditions of Approval as the proposed project regarding hazards best management practices; asbestos removal in structures; Phase I and/or Phase II reports; lead-based paint/

coatings, asbestos or PCB occurrence assessment; environmental site assessment reports remediation; lead-based paint remediation; and fire safety. Implementation of these conditions would reduce potential public health and hazards impacts to less-than-significant levels.

m. Utilities and Infrastructure. The Zoning Compliant alternative would develop the project site with 350 residential units. As described above, this alternative has the potential to add 926 residents to the City. This alternative would result in an incremental increase in demand for water supply, wastewater collection and treatment, and solid waste collection and disposal. Similar to the proposed project, impacts to utilities and infrastructure as a result of this alternative would be less than significant.

n. Public Services and Recreation. This alternative would result in an incremental increase in demand for police, fire, school, library and recreation services. Similar to the proposed project, impacts to public services and recreation facilities as a result of this alternative would be less than significant.

244 LAKESIDE BUILDING GROUP API-SITE PLAN ALTERNATIVE

1. Principal Characteristics

The 244 Lakeside Building Group API-Site Plan alternative assumes a high-rise residential building containing approximately 370 residential units, with the same ground floor uses, height, scale, design, and footprint of building as the proposed project, would be developed on the project site. The 244 Lakeside Building Group API-Site Plan alternative would contain the café and other commercial uses similar to the proposed project. The building would be constructed near the southwest corner of the site, slightly further from the adjacent apartment buildings, near the intersection of Alice Street and 19th Street, as shown in Figure V-3. As described in the Southwest Corner Development Alternative, currently, this portion of the site is occupied by two non-historic greenhouses. The proposed project is set back approximately 55 feet from the Reguillus Apartments, 50 feet from the 244 Lakeside Drive Apartment Building, 40 feet from Snow Park, and 20 feet from 19th Street. Under this alternative, the setbacks would be approximately as follows: 85 feet from the Reguillus Apartments, 60 feet from the 244 Lakeside Drive Apartment Building, 3 feet from Snow Park, and 10 feet from 19th Street. This alternative would still require the Variances requested by the proposed project for loading. The 244 Lakeside Building Group API-Site Plan Alternative would not meet the off-street parking requirements and would still need the parking Variances requested of the proposed project.

This alternative would achieve all of the goals of the proposed project. It would design a project that assists the Central Business District in becoming a premier location in the region for urban residential living and a project that complements the surrounding historic buildings and adjacent high-rises by adding to the vertical heterogeneity consistent with attractive modern skylines. It would use the same footprint as the proposed project and allow for open space to be constructed adjacent to the 244 Lakeside Apartments and the Regillus and would provide a skyway on top of the building where anyone can have a 360 degree view of Oakland, the Bay, and Lake Merritt. This alternative would enhance the street experience and the pedestrian presence in the area similarly to the proposed project.

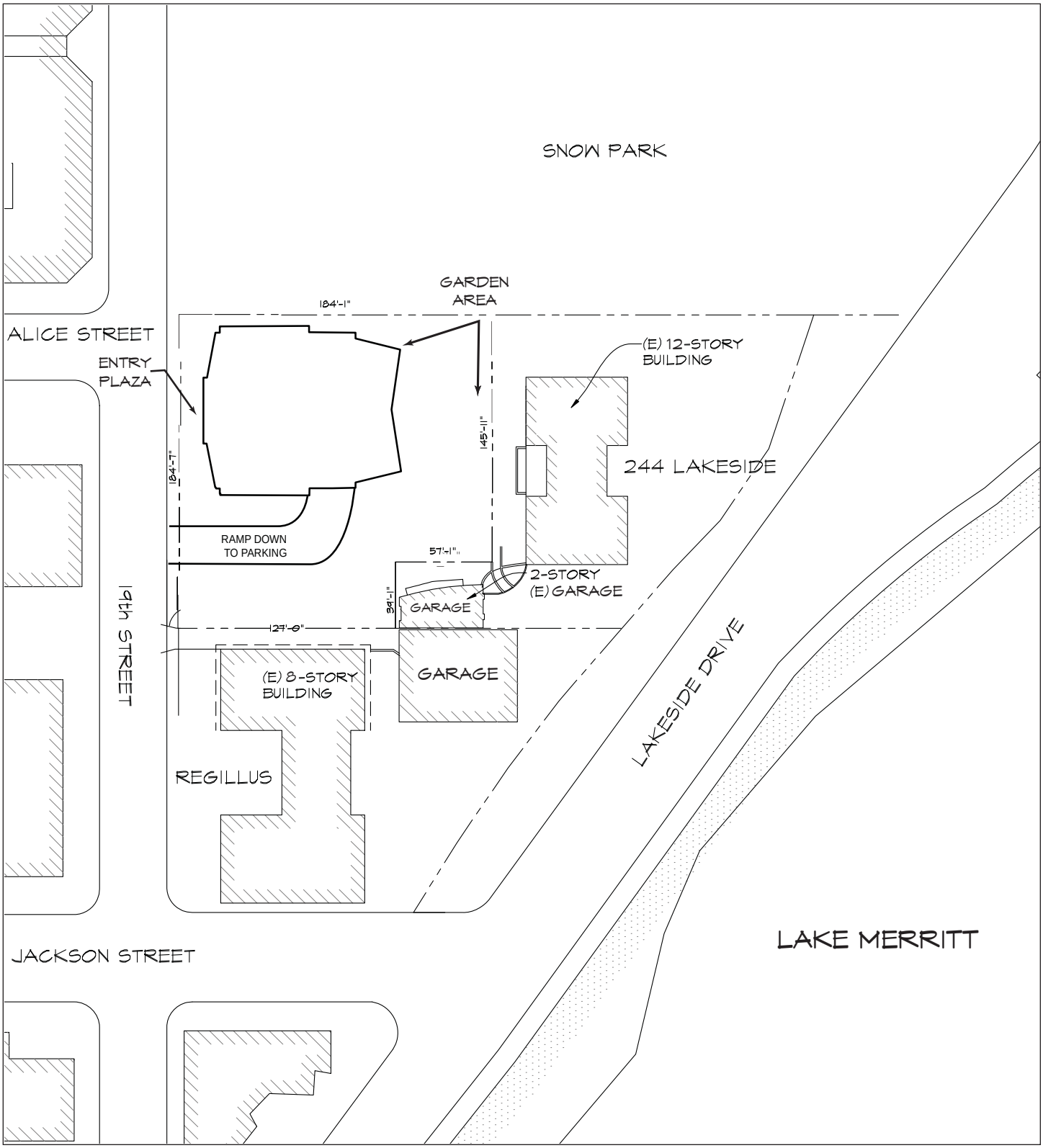

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FIGURE V-3

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NOT TO SCALE

Emerald Views Residential Development EIR

244 Lakeside Building Group API-Site Plan Alternative

SOURCE: IAN BURCHALL & ASSOCIATES, INC., 2007.

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2. Analysis of the 244 Lakeside Building Group API-Site Plan Alternative

The 244 Lakeside Building Group API-Site Plan alternative is evaluated for all the environmental topics analyzed in this EIR.

a. Land Use. The 244 Lakeside Building Group API-Site Plan alternative would introduce new residential land uses to the project site. Like the proposed project, this alternative would not conflict with surrounding residential, open space and commercial land uses, nor would it result in impacts that would physically divide an established community. Therefore, like the proposed project, this alternative would not result in any significant land use impacts.

b. Planning Policy. The 244 Lakeside Building Group API-Site Plan alternative, like the proposed project, would add a residential population to this downtown site. The historic Schilling Garden would be removed and the historic resources adjacent to the site would be impacted. However, this alternative would impact the API to a lesser degree than the proposed project because of its location closer to Snow Park. Implementation of the proposed project and the 244 Lakeside Building Group API-Site Plan alternative would further many goals of the Land Use and Transportation Element of the General Plan including creating a high-density residential project. The proposed project and the 244 Lakeside Building Group API-Site Plan alternative would conflict with the Historic Preservation Element of the General Plan, including preservation and protection of properties of historic value. However, this alternative would have a reduced impact on the 244 Lakeside Drive Building Group as a result of the building's location closer to Snow Park.

c. Population and Housing. The 244 Lakeside Building Group API-Site Plan alternative, like the proposed project, would introduce 370 residential units to the project site, which would directly increase the population of Oakland by 966 persons (370 x 2.61 persons per unit). This alternative would generate approximately 12 jobs associated with building operation and maintenance. This alternative would include the ground floor café and, therefore 8 retail or commercial jobs would be generated. Assuming that each new job translates into a new resident in Oakland, this alternative would have the potential of adding 986 residents to the City. The proposed project would also add 986 residents to the City. Similar to the proposed project, this level of population growth has been accounted for in both the City's General Plan and ABAG projections. In addition, neither the proposed project nor this alternative would displace housing units or alter the City's jobs/housing balance.

d. Transportation and Circulation. The 244 Lakeside Building Group API-Site Plan alternative would result in a high-rise building containing approximately 370 residential units and the café This alternative would generate approximately the same AM and PM peak hour trips as the proposed project. The proposed project would result in impacts at two intersections, Oak Street/7th Street and Harrison Street/Lakeside Drive and this alternative would result in the same impacts. With mitigation measures, impacts to these intersections would be reduced to less-than-significant levels. In addition, the proposed project would have a significant and unavoidable impact to the intersection of San Pablo Ave/West Grand Ave and a cumulatively considerable significant and unavoidable impact to the I-880 road segment from Oak Street and 5th Street. This alternative would result in the same significant but mitigated impacts and the same significant and unavoidable impacts. The curb cut/drop-off is also included in this alternative and the mitigation measure to meet minimum sidewalk widths would be required.

e. Air Quality. The 244 Lakeside Building Group API-Site Plan alternative would develop the project site with a similar structure as the proposed project and would require excavation for the proposed parking levels. The City's Standard Conditions of Approval regarding construction dust control and construction emissions would reduce impacts on air quality during construction, including exposure to toxic air contaminants, to less than significant levels for this alternative, as well as the proposed project. Similar to the proposed project, vehicular traffic generated during operation of this alternative would emit carbon dioxide (CO) into the air along the roadway segments and near intersections. Both the proposed project and this alternative would have a less than significant greenhouse gas impact.

f. Noise and Vibration. As noted above, the 244 Lakeside Building Group API-Site Plan alternative would develop the project site with a structure similar to that of the proposed project. The City's Standard Conditions of Approval regarding construction hours of operation would reduce the noise hour impacts during construction to less than significant levels for this alternative, as well as the proposed project. As traffic generated by the proposed project would not be significant enough to result in any changes to the ambient noise levels in the project vicinity, so would traffic noise generated with this alternative. The 244 Lakeside Building Group API-Site Plan alternative would be located near the southwest corner of the project site further away from the historic structures and Lake Merritt but closer to Snow Park and the residential building across 19th Street. The City's Standard Conditions of Approval require the project applicant to prepare a site specific noise reduction plan to reduce noise impacts on nearby residents. In addition, the City's Standard Conditions of Approval regarding vibration and construction near historic structures require the project applicant to retain a qualified engineer to develop threshold levels of vibration which, if reached could cause damage to the adjacent historic structures, and to use construction methods that would ensure those thresholds are not met. Given that this alternative would be located an additional 10 to 30 feet away from the historic structures, this alternative would have a slightly less potential for noise and vibration impacts to the historic structures, but a slightly higher impact to the residential building across the street and Snow Park with this new location. However, with implementation of the Standard Conditions of Approval, both this alternative and the proposed project would have a less than significant noise and vibration impact.

g. Aesthetics, Shadow and Wind. Scenic vistas in the project vicinity include views to Lake Merritt and the Oakland Hills. Both the proposed project and the Reduced 244 Lakeside Building Group API-Site Plan alternative would increase views across the project site and would provide a viewing area, open to the public, on the 40th floor. This alternative would be constructed closer to Snow Park than the current project; however, neither would have an adverse effect on scenic vistas. Implementation of the proposed project or this alternative would change the visual character of the project site through demolition of the garden and the construction of a 42-story residential tower. However, the project site is in a developed urban area of Oakland and implementation of either development would not degrade the existing visual character or quality of the site. In addition, both the proposed project and this alternative would be required to meet the residential design review findings. As such, the proposed project or the 244 Lakeside Building Group API-Site Plan alternative would have a less than significant impact on aesthetics.

Both the proposed project and this alternative would introduce a new source of light and glare to the project site. Any potential impacts would be reduced to less than significant levels through the implementation of the City's Standard Conditions of Approval addressing lighting plans and bird

collision reduction. Both the proposed project and the 244 Lakeside Building Group API-Site Plan alternative would be 457 feet in height. The shadow patterns developed for the proposed project in Chapter IV.G, Aesthetics, Shadow and Wind, would be roughly the same as for this alternative. However, with the location of the building nearer to Snow Park and closer to the street in this alternative, shadows on Lake Merritt and the historic structures would be reduced while shadows on the historic structures and Snow Park would be slightly more. Neither the proposed project nor this alternative would cast significant shadows on solar collectors or parks that would adversely impair their use or historic structures that would impair their significance. This alternative is greater than 100 feet tall and would require a wind analysis. Similar to the proposed project, mitigation measures, such as landscaping and design features may be recommended in the wind study. However, until these features are reviewed and finalized, it cannot be determined if wind speeds would be reduced below the City thresholds. The proposed project and this alternative impact, as well as cumulative impact would be conservatively deemed significant and unavoidable.

h. Cultural and Paleontological Resources. The 244 Lakeside Building Group API-Site Plan alternative assumes an alternative would be developed on the project site with 370 residential units and the same ground floor uses, height, scale, design, and footprint of building as the proposed project. The building would be constructed at the southwest corner of the site, near the intersection of Alice Street and 19th Street. This alternative would demolish the historic Schilling Garden in order to construct the underground parking levels. However, this alternative would construct larger open space areas adjacent to the 244 Lakeside Drive Apartment building, the Regillus and the historic garages. As noted in Chapter IV.H of the EIR, the garage, the 244 Lakeside Drive Apartment and the garden are located in the 244 Lakeside Drive Building Group which is an Area of Primary Importance (API). The API as a whole and the individual buildings also all appear eligible for the National Register of Historic Places. In order to be eligible for the National Register of Historic Places, the resource must have integrity or the ability to convey its significance. There are seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association.

1. **Location.** Location is defined as the place where the historic property was constructed or the place where the historic event occurred. The 244 Lakeside Drive Building Group API includes the Schilling Garden, the 244 Lakeside Drive Apartment building, and the historic garage. With this alternative, similar to the proposed project, the Schilling Garden would be demolished and the garage would be the last remaining portion of the August Schilling's estate. Although, this alternative and the proposed project would relocate features from the garden to the proposed open space, the historic garden itself would not be replaced. However, the rest of the contributors would remain and although reduced in size, the API structures would still be clustered around an open space area. Therefore, this alternative, more than the proposed project, would result in a reduced impact to the location of the API but not mitigate it to less than significant

2. **Design.** Design is defined as the combination of elements that create the form, plan, space, structure, and style of the property. Design includes such elements as organization of space, proportion, scale, technology, ornamentation, and materials. Several elements contribute to the overall design of the API. First, the existing historic buildings are all sited around a common contiguous open space area. Second, the scale of the existing buildings is similar in height and mass, and none of the buildings visually overwhelm another. Third, all the existing buildings were built using innovative construction techniques at the time. Fourth, all of the buildings have ornamentation. Fifth, all the buildings use quality materials.

The 244 Lakeside Drive Building Group API-Site Plan alternative would locate a high-rise building in the southwest corner of the site, effectively surrounded by open space (Snow Park and the garden proposed for construction on the site.) This location improves the historic organization of the space between the buildings more than the proposed project by retaining contiguous (not left over) open space adjacent to the historic buildings. In this sense the 244 Lakeside Drive Building Group – Site Plan alternative would have less of an impact on the historic organization of the space than the proposed project. In terms of proportion and scale, this alternative would be just as tall (457 feet) as the proposed project. This alternative and the proposed project would visually overwhelm the other historic structures by introducing a structure into the API that is over twice the height as the existing historic buildings. Therefore, this alternative, like the proposed project, would result in a height and scale impact on the API. Both this alternative and the proposed project would be built with state of the art technology due to the height of the proposed building, the need for excavation and dewatering, as well as the adjacency of historic buildings which will require a greater level of attention to construction methods. This alternative, like the proposed project, will be built with different materials than the historic buildings. However, both the proposed project and this alternative use high quality materials appropriate for the size of the structure and period of time. This alternative and the proposed project are designed in a modern style and do not exhibit the same obvious level of ornamentation as the existing historic structures.

In summary, this alternative, like the proposed project, would not result in an impact to the technology aspect of design, while other elements of design, such as organization of space, proportion and scale, ornamentation, and materials (see workmanship and materials section below) would be impacted. However, this alternative, more than the proposed project, would improve the organization of space, and would result in a site plan that is more consistent with the existing historic structures' relationships on the individual lots and the API as whole. Therefore, this alternative, more than the proposed project, would reduce but not mitigate the impact on the design aspect of the API.

3. **Setting.** Setting is defined as: the physical environment of a historic property. Setting reflects the basic physical conditions under which a property was built and the functions it was intended to serve. The way in which as property is positioned in its environment can reflect the designer's concept of nature and the aesthetic preferences. Physical features include such elements such as topographic features; manmade features (paths and fences); and relationships between buildings and other features or open spaces. The 244 Lakeside Drive Apartment Building Group API's historic setting is a group of buildings surrounding an open space area that is somewhat sheltered from the public. Specifically, the historic buildings were sited and designed to take advantage of views of the garden because it was assumed that the garden would remain. This historic pattern has continued with recently constructed high-rise buildings in this area being grouped together around a garden space or a lower height building to facilitate better views, light, and air to inhabitants of the high-rises. As a result, the historic and new pattern of grouping buildings around open space has established a new character defining feature of the Lake Merritt API.

   The 244 Lakeside Drive Building Group API-Site Plan alternative locates the building in the southwest corner of the site closer to Snow Park and away from the other buildings in the 244 Lakeside Drive Building Group API. In doing so, a contiguous (although perhaps irregular) open space is maintained that could continue as a garden. In addition, the design concept of buildings surrounding a somewhat sheltered garden area would be maintained, rather than the

garden being the leftover space around the building as exhibited in the proposed project. Many of the garden plants could be replanted in a manner that would better relate to the previous Schilling Garden planting pattern – a middle grass area with plants in the perimeter surround. Paths could be created with the planted edges of the garden similar to the existing historic garden. The paths could function as walking areas to view and appreciate individual plants, while a middle grassy area could function as an informal space for gatherings (as the current historic garden provided.) Although the Schilling Garden is no longer visible to the public from the surrounding streets, it previously was viewable by the public. In this alternative, the garden would be contiguous, with views of the entire area attainable from many places including the front of the property. In addition, this alternative would retain the open space area, light and air adjacent to the existing buildings by creating significantly greater distances between the historic buildings and the new structure, rather than the tight distances currently shown with the proposed project. In summary, this alternative, more than the proposed project, would reduce but not mitigate the impact on the setting aspect of the API.

4. **Materials.** Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property. A property must retain the key exterior materials dating from a particular period of its historic significance. In this case, the existing buildings all retain the materials dating from their construction. The proposed project and this alternative would introduce a building with materials that are different than the existing structures in the API. Therefore, this alternative and the proposed project would still have an impact on the materials of the API.

5. **Workmanship.** Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or pre-history. It is the evidence of artisan's labor and skill in constructing or altering a building structure, object, or site. It can be expressed in vernacular methods of construction and plain finishes or in highly sophisticated configurations and ornamental detailing. It can be based on common traditions or innovative period techniques. Workmanship is important because it exhibits craft. The existing buildings in the API exhibit workmanship in the detailing of the building, ornamentation, and method of construction. The proposed project plans note exterior materials but the plans are schematic and do not provide any insight into the workmanship necessary to address this aspect of integrity. Furthermore, the plans do not include any construction details, which might further hint at workmanship and level of craft. Therefore, it is likely that the proposed project and this alternative would result in an impact on the workmanship of the API.

6. **Feeling.** Feeling is a property's expression of the aesthetic or historic sense of a particular time. It results from the presence of physical features that, taken together, convey the property's historic character. The 244 Lakeside Drive Building Group API exhibits a specific feeling because the buildings were constructed during a similar period in time. This alternative, as well as the proposed project, would be constructed approximately 100 years later. However, this alternative proposes 1) a building surrounded by a large open space area and 2) increases the open space areas adjacent the existing structures. This proposed organization of space is similar to that exhibited in the API and is a continuation of the aesthetic expression the historic building group. In summary, this alternative, more than the proposed project, would reduce but not mitigate the impact on the feeling aspect of the API.

7. **Association.** Association is the direct link between an important historic event or person and a historic property. A property retains association if it is the place where the event or activity

occurred and is sufficiently intact to convey that relationship to the observer. The existing API has not retained its association with August Schilling as the 244 Lakeside Drive building and the Regillus building sites were sold to develop high-rise apartments near the lake, similarly to the proposed project and this alternative. However, the existing buildings were constructed during a similar period in time and the association is with that period unlike the proposed project or this alternative. As noted above, this alternative would result in a building surrounded by open space and would retain (although to a lesser degree) the open space areas adjacent to the existing historic structures. As this pattern of development is associated with the construction of the historic buildings and also is a new characteristic of the Lake Merritt API, this alternative would reduce but not mitigate the impact on the association impact of the API.

According the National Register, the steps in assessing integrity include:

- Define the essential physical features that must be present for a property to represent its significance.
- Determine whether the essential physical features are visible enough to convey their significance.
- Determine whether the property needs to be compared with similar properties. And,
- Determine, based on the significance and essential physical features, which aspects of integrity are particularly vital to the property being nominated and if they are present.

All of the seven aspects of integrity are essential physical features of the 244 Lakeside Drive Building Group API, as they are present on the property and visible. When compared to other API's, the district is intact.. However, with demolition of the garden and construction of either the proposed project or this alternative, several aspects of integrity are compromised including location, design, setting, materials, workmanship, feeling, and association.

"For a district to retain integrity as a whole, the majority of the components that make up the district's historic character must possess integrity even if they are individually undistinguished. In addition, the relationships among the district's components must be substantially unchanged since the period of significance." When evaluating the impact of intrusions upon the district's integrity, take into consideration the relative number, size, scale, design, and location of the components that do not contribute to the significance. A district is not eligible if it contains so many alterations or new intrusions that it no longer conveys the sense of a historic environment.

Of the three properties in the district, two still retain their individual integrity. However, given the very few contributors to the district, the location of the proposed (project) footprint, and the impact that the proposed project would have on the API in terms of location, design (proportion and scale), materials, feeling, and association the district would not retain its historic significance and integrity. Specifically, without the historic buildings being clustered around an open space area, the API would not exist. However, with this 244 Lakeside Drive Building Group API-Site Plan alternative the impact on location, setting, design, feeling, and association aspects of integrity would be significantly reduced. In sum, while this alternative would meet many of the project applicant's objectives and would reduce the impact on location, setting, design, feeling, and association it would not reduce the impact to overall integrity to the API to less than significant. Furthermore, this alternative would not reduce the significant and unavoidable cumulative impact to the API.

i. Biological Resources. As noted above, the 244 Lakeside Building Group API-Site Plan alternative assumes a different development footprint than the proposed project (the same footprint for the parking structure is assumed.) This alternative would result in the removal of the garden and 30 protected trees per the City's Tree Ordinance. However, implementation of the City's Standard Conditions of Approval addressing tree removal during breeding season, tree removal permits, tree replacement plantings, and tree protection during construction, would reduce this impact to a less than significant level. This alternative, because of its location closer to Snow Park and excavation for the parking levels, has the potential to impact protected trees adjacent to the site, in a similar manner as the proposed project. With implementation of Mitigation Measure BIO-1, these impacts would be reduced to a less than significant level.

j. Soils, Geology and Seismicity. Any development on the site would be subject to seismic hazards, impacts from expansive soils, and settlement and differential settlement. This 244 Lakeside Building Group API-Site Plan alternative, the proposed project and any other development requesting a Tentative Tract or Tentative Parcel Map would be subject to the City's Standard Conditions of Approval requiring a soils report and geotechnical report to ensure soil, geology, and seismicity related impacts would be less than significant. In addition, all projects requesting a grading permit would be subject to the City's Standard Conditions of Approval requiring an erosion and soil control plan. Similar to the proposed project, dewatering during construction would be required, but potential impacts would be reduced to less than significant level through a Standard Condition of Approval. Under this alternative, the same excavation and grading would be required as with the proposed project due the construction of the parking levels; however, both would result in less than significant soil, geology, and seismicity related impacts.

k. Hydrology and Water Quality. The 244 Lakeside Building Group API-Site Plan alternative would develop the project site with a building that has the same footprint as the proposed project. Although this alternative proposes a building located in the southwest corner of the site, it would result in similar changes to the quality, amount, and direction of runoff from the site as the proposed project. Construction and operation of the proposed project could impact hydrology and water quality. Implementation of the City's Standard Conditions of Approval for erosion and sediment control, stormwater pollution management, maintenance of stormwater measures and confirmation of storm-water and sewer capacity would reduce potential impacts to a less than significant level for both this alternative and the proposed project. The project site contains a water supply well; both for this alternative and the proposed project, Mitigation Measure HYD-1 requires the well to be properly abandoned, resulting in a less than significant impact.

l. Public Health and Hazards. The use of project site as garden may have involved the use of horticultural chemicals. Due to the age of the structures on the project site, they may include lead paint and/or asbestos containing materials. Similar to the proposed project, the 244 Lakeside Building Group API-Site Plan alternative includes demolition, grading, and excavation activities. This alternative would be subject to the same Standard Conditions of Approval as the proposed project regarding hazards best management practices; asbestos removal in structures; Phase I and/or Phase II reports; lead based paint/coatings; asbestos and PCB occurrence assessment; environmental site assessment reports remediation; lead paint remediation; and fire safety. Implementation of these conditions would reduce the potential public health and hazards impacts to less than significant levels.

m. Utilities and Infrastructure. The 244 Lakeside Building Group API-Site Plan alternative would develop the project site with 370 residential units. As described above, this alternative has the potential to add 976 residents to the City. This alternative would result in the incremental increase in demand for water supply, wastewater collection and treatment, and solid waste collection and disposal. Similar to the proposed project, impacts to utilities and infrastructure as a result of this alternative would be less than significant.

n. Public Services and Recreation. This alternative would result in the same incremental increase in demand for police, fire, school, library, and recreation services as the proposed project. However, similarly to the proposed project, impacts to public services and recreation facilities as a result of this alternative would be less than significant.

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires that the EIR identify the environmentally superior alternative in the strict sense that environmental impacts associated with its implementation would be the least of all 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, including the significant and unavoidable impacts to historic resources and the significant and unavoidable impact to the I-980 roadway segment. It is also important to note that while this alternative would be environmentally superior in the technical sense that contribution to the aforementioned impacts would not occur, the No Project/No Development alternative would also fail to achieve any of the project's objectives.

In cases like this where the No Project/No Development alternative is the environmentally superior alternative, CEQA requires that a second most environmentally superior alternative be identified. Comparison of the environmental impacts associated with each alternative as described above, indicates that the Southwest Corner Development alternative would generally represent the next-best alternative in terms of the fewest impacts. The proposed project would result in seven significant impacts that could be reduced to less-than-significant levels with mitigation measures and eight significant unavoidable impacts. Implementation of the Southwest Corner Development alternative would not result in any significant and unavoidable impacts. The eleven impacts identified for this alternative could be reduced to less-than-significant levels with mitigation measures. The Reduced Height alternative would have significant unavoidable impacts to ground level and cumulative wind conditions, the historic Schilling Garden, the API, and a cumulative impact to the API. The Zoning Compliant alternative and the Reduced 244 Lakeside Building Group alternative would have the same eight significant unavoidable impacts as the proposed project.

However, due to the different location close to Snow Park, the 244 Lakeside Building Group API-Site Plan alternative would have less of an impact on the integrity of the 244 Lakeside Building Group API than the proposed project or Zoning Compliant alternative.

Table V-1: Summary of Project and Alternative Impacts

	Level of Significance Without Mitigation						Level of Significance With Mitigation or Standard COA					
Environmental Impacts	**Proposed Project**	**No Project**	**Southwest Corner Develop-ment**	**Reduced Height**	**Zoning Compliant**	**244 Lakeside Building Group API-Site Plan**	**Proposed Project**	**No Project**	**Southwest Corner Develop-ment**	**Reduced Height**	**Zoning Compliant**	**244 Lakeside Building Group API-Site Plan**
A. LAND USE												
No significant land use impact would occur	--	--	--	--	--	--	--	--	--	--	--	--
B. PLANNING POLICY[10]												
Each alternative would further the goals of regulatory documents to varying degrees	--	--	--	--	--	--	--	--	--	--	--	--
C. POPULATION AND HOUSING												
No significant population and housing impact would occur	--	--	--	--	--	--	--	--	--	--	--	--
D. TRANSPORTATION AND CIRCULATION												
No significant construction period transportation-related impacts would occur with implementation of the City Standard Conditions of Approval.	--	--	--	--	--	--	LTS	LTS	LTS	LTS	LTS	LTS
TRANS-1: The intersection of Oak Street/7th Street would operate at LOS F during the PM peak hour under Cumula-tive Year 2015 Plus Project Conditions. The proposed project would contribute to this impact.	S	LTS	LTS	LTS	S	S	LTS	LTS	LTS	LTS	LTS	LTS
TRANS-2: The intersection of Harrison Street/Lakeside Drive would operate at LOS F during the PM peak hour under Cumulative Year 2030 Plus Project Conditions. The proposed project would contribute to this impact.	S	LTS	LTS	S	S	S	LTS	LTS	LTS	LTS	LTS	LTS

[10] Policy conflicts, in and of themselves, and 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.

Table V-1 *Continued*

	Level of Significance Without Mitigation						Level of Significance With Mitigation or Standard COA					
Environmental Impacts	**Proposed Project**	**No Project**	**Southwest Corner Develop-ment**	**Reduced Height**	**Zoning Compliant**	**244 Lakeside Building Group API-Site Plan**	**Proposed Project**	**No Project**	**Southwest Corner Develop-ment**	**Reduced Height**	**Zoning Compliant**	**244 Lakeside Building Group API-Site Plan**
TRANS-3: The intersection of San Pablo Avenue/West Grand Avenue would operate at LOS F during PM peak hour under Cumulative Year 2030 Plus Project Conditions.[11] The proposed project would contribute to this impact.	S	LTS	LTS	LTS	S	S	**SU**	LTS	LTS	LTS	**SU**	**SU**
TRANS-4: The segment of I-880 from Oak to 5th Street would operate at LOS F in the westbound AM peak hour and LOS F in the eastbound PM peak hour under Cumulative Year 2030 Baseline plus Project Conditions.[12]	S	LTS	LTS	LTS	S	S	**SU**	LTS	LTS	LTS	**SU**	**SU**
TRANS-5: Minimum sidewalk width requirements would not be met. The proposed project would contribute to this impact.	S	LTS	LTS	LTS	--	LTS	LTS	LTS	LTS	LTS	--	LTS
E. AIR QUALITY AND GREENHOUSE GAS EMISSIONS												
AIR 1: Construction period activities including site preparation and construc-tion could generate significant short–term exhaust and organic emissions. Construction-related NO_x emissions would be potentially significant with the proposed project.	S	LTS	LTS	LTS	S	S	**SU**	LTS	LTS	LTS	**SU**	**SU**
No significant impacts as a result of increased greenhouse gas emissions would occur.	--	--	--	--	--	--	--	--	--	--	--	--

[11] The City of Oakland's General Plan Housing Element (adopted by City Council, December 2010) specifically identified weekday PM Peak Hour operations at this intersection as significant and unavoidable in future year scenarios. Through certification of the Housing Element, the City Council adopted a statement of overriding considerations for the impact at this intersection. Therefore, weekday PM Peak Hour operations at this intersection have been cleared from further CEQA analysis.

[12] Ibid.

Table V-1 *Continued*

	Level of Significance Without Mitigation						Level of Significance With Mitigation or Standard COA					
Environmental Impacts	**Proposed Project**	**No Project**	**Southwest Corner Develop-ment**	**Reduced Height**	**Zoning Compliant**	**244 Lakeside Building Group API-Site Plan**	**Proposed Project**	**No Project**	**Southwest Corner Develop-ment**	**Reduced Height**	**Zoning Compliant**	**244 Lakeside Building Group API-Site Plan**
F. NOISE AND VIBRATION												
No significant construction period noise or vibration impacts would occur with implementation of the City Standard Conditions of Approval.	--	--	--	--	--	--	LTS	LTS	LTS	LTS	LTS	LTS
G. AESTHETICS, SHADOW AND WIND												
No significant light, glare or shadow impacts would occur with implementation of the City Standard Conditions of Approval	--	--	--	--	--	--	LTS	LTS	LTS	LTS	LTS	LTS
WIND-1: Ground level winds may exceed the City's wind criterion of winds above 36 miles per hour for more than 1 hour during daylight hours during the year.	S	--	--	S	S	S	**SU**	--	--	**SU**	**SU**	**SU**
WIND-2: Wind levels on the roof terrace may exceed the City's wind criterion of winds above 36 miles per hour for more than 1 hour during daylight hours during the year.	S	--	--	S	S	S	LTS	--	--	LTS	LTS	LTS
WIND-3: Cumulative ground level winds may exceed the City's wind criterion of winds above 36 miles per hour for more than 1 hour during daylight hours during the year.	S	--	--	S	S	S	**SU**	--	--	**SU**	**SU**	**SU**
H. CULTURAL AND PALEONTOLOGICAL												
No significant impacts to paleontological, or Native American resources would occur with implementation of the City Standard Conditions of Approval.	--	--	--	--	--	--	LTS	LTS	LTS	LTS	LTS	LTS
CULT-1: The proposed project would remove the Schilling Garden, which is considered to be an individual historical resource.	S	LTS	LTS	S	S	S	**SU**	LTS	LTS	**SU**	**SU**	**SU**

Table V-1 *Continued*

	Level of Significance Without Mitigation						Level of Significance With Mitigation or Standard COA					
Environmental Impacts	**Proposed Project**	**No Project**	**Southwest Corner Develop-ment**	**Reduced Height**	**Zoning Compliant**	**244 Lakeside Building Group API-Site Plan**	**Proposed Project**	**No Project**	**Southwest Corner Develop-ment**	**Reduced Height**	**Zoning Compliant**	**244 Lakeside Building Group API-Site Plan**
CULT-2: Construction of the residential tower would cause a substantial adverse change in the historical significance of adjacent historic structures and the Lakeside Drive Building Group API.	S	LTS	LTS	LTS	S	S	**SU**	LTS	LTS	**SU**	**SU**	**SU**
CULT-3. The proposed project would entail construction activities in close proximity to adjacent historical resources, including the 244 Lakeside Drive Apart-ments, the Schilling Garage, and the Regillus Apartments and Garage, which could result in impacts to these structures.	S	LTS	LTS	S	S	S	LTS	LTS	LTS	LTS	LTS	LTS
CULT-4. The proposed project would result in a cumulative impact to the 244 Lakeside Drive Apartment Building Group API.	S	LTS	LTS	LTS	S	S	**SU**	LTS	LTS	**SU**	**SU**	**SU**
I. BIOLOGICAL RESOURCES												
No significant impacts to nesting raptors or trees on the project site would occur with implementation of the City Standard Conditions of Approval.	--	--	--	--	--	--	LTS	LTS	LTS	LTS	LTS	LTS
BIO-1. The proposed project could impact the root systems or canopies of protected trees adjacent to the project site.	S	LTS	S	S	S	S	LTS	LTS	LTS	LTS	LTS	LTS
J. SOILS, GEOLOGY AND SEISMICITY												
No significant soil, geology, and seismicity impacts would occur with implementation of the City Standard Conditions of Approval.	--	--	--	--	--	--	LTS	LTS	LTS	LTS	LTS	LTS
K. HYDROLOGY AND WATER QUALITY												
No significant hydrology or water quality impacts would occur with imple-mentation of the City Standard Conditions of Approval.	--	--	--	--	--	--	LTS	LTS	LTS	LTS	LTS	LTS

Table V-1 *Continued*

	Level of Significance Without Mitigation						Level of Significance With Mitigation or Standard COA					
Environmental Impacts	**Proposed Project**	**No Project**	**Southwest Corner Develop-ment**	**Reduced Height**	**Zoning Compliant**	**244 Lakeside Building Group API-Site Plan**	**Proposed Project**	**No Project**	**Southwest Corner Develop-ment**	**Reduced Height**	**Zoning Compliant**	**244 Lakeside Building Group API-Site Plan**
HYD-1: Water supply well(s) at the project site, if not properly managed or decommissioned, could be damaged during construction, potentially allowing impacts to groundwater quality.	S	LTS	S	S	S	S	LTS	LTS	LTS	LTS	LTS	LTS
L. PUBLIC HEALTH AND HAZARDS												
No significant public health or hazards impacts would occur with implementation of the City Standard Conditions of Approval.	--	--	--	--	--	--	LTS	LTS	LTS	LTS	LTS	LTS
M. UTILITIES AND INFRASTRUCTURE												
No significant impact to utilities or infrastructure would occur with implementation of the City Standard Conditions of Approval.	--	--	--	--	--	--	LTS	LTS	LTS	LTS	LTS	LTS
N. PUBLIC SERVICES AND RECREATION												
No significant impact to public services or recreation facilities would occur with implementation of the City Standards Condition of Approval.	--	--	--	--	--	--	LTS	LTS	LTS	LTS	LTS	LTS

Source: LSA Associates, Inc., 2011.

VI. CEQA-REQUIRED ASSESSMENT CONCLUSIONS

As required by CEQA, this chapter discusses the following types of impacts that could result from implementation of the proposed project: growth-inducing impacts; significant irreversible changes; cumulative impacts; effects found not to be significant; and unavoidable significant effects.

A. GROWTH INDUCEMENT

A project is considered growth-inducing if it would directly or indirectly foster substantial 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 of 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 growth inducement effects. The project site is located in a developed area fully served by public utilities, and with the exception of Snow Park, there are no significant undeveloped areas adjacent to the project site. The project also 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 conjunction with the small levels of job creation that would result. The proposed project would create approximately 20 jobs on the project site. The jobs created during the operation phase 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.

As noted above, the proposed project would occur on an infill site in an existing urbanized area of Downtown 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 approximately 1,500 feet from the 19th Street BART station as well as several AC Transit lines, anticipated growth would benefit the existing transit system and could reduce adverse impacts associated with automobile use, such as air pollution, greenhouse gas emissions 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.

[1] *CEQA Guidelines*, 2009. § 15126.2(d).

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 consumption is justified.[2] 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 accidents; and 3) consumption of non-renewable resources.

1. Changes In Land Use Which Would Commit Future Generations

The proposed project would develop a site containing a historic garden with a 42-story residential tower. The project would represent in change in land use for the project site. However, the proposed project would be consistent with the General Plan goals of creating a high-density, mixed-use urban center with around-the-clock activity by introducing a new permanent residential population at the project site. In the same manner that the current uses and structures are being proposed for redevelopment after years of usefulness, so too could a residential development undergo renovation or change after another 50 to 100 years. In this way, the proposed project would commit 2 to 3 generations to this land use change. Such a commitment would not constitute a significant adverse effect.

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, and the City of Oakland's Standard Conditions of Approval, 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 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 California Energy Code Title 24. The project may also include, if feasible, photovoltaic panels, solar collectors, and a vertical axis wind turbine. These devices would produce electricity to be used to help power various components of the project. In addition, the project site is located near the 19th Street BART station, AC Transit lines**,** and bicycle and pedestrian routes, which would facilitate the increased use of public transit, further reducing non-renewable energy consumption associated with the single-occupant vehicles.

[2] *CEQA Guidelines*, 2009. § 15126.2(c).

C. SIGNIFICANT UNAVOIDABLE AND CUMULATIVE IMPACTS

Implementation of the proposed project would result in significant unavoidable impacts to transportation, air quality, wind and cultural resources. The intersection of San Pablo Avenue/West Grand Avenue would operate at LOS F in the PM peak hour under Cumulative Year 2030 Baseline Conditions and Cumulative Year 2030 Baseline plus Project Conditions.[3] The project would contribute to a significant cumulative impact at this intersection. While the signal phasing at the intersection of San Pablo Avenue/West Grand Avenue could be modified to allow protected-permitted phasing for the northbound left-turn movements, and the signal timing and cycle length could be re-optimized, the operational and geometric feasibility of this mitigation measure is not known, therefore this impact is significant and unavoidable.

In addition, in the Cumulative Year 2030 Plus Project condition, the segment of I-880 from Oak to 5th Street would operate at LOS F in the westbound AM peak hour and LOS F in the eastbound PM peak hour.[4] The proposed project would contribute to a significant cumulative impact on this segment in the AM and PM peak hours. Increasing capacity on the freeway would likely require increasing the number of travel lanes, but given the existing alignment and constraints due to lack of right-of-way, there are no feasible measures to mitigate the project's impacts. This impact would remain significant and unavoidable.

Construction period activities including site preparation and construction could generate significant short–term exhaust and organic emissions. Construction-related NO_x emissions would be significant with the proposed project. While mitigation measures would reduce construction emissions, these impacts would remain significant and unavoidable.

Implementation of the proposed project could cause two exceedences of the City of Oakland's wind hazard criterion, one at the northeastern corner of the project site, and the other at the southwest corner of the proposed building. While it is likely that ground wind levels would be reduced to less than significant levels through implementation of a final landscape plan, until the landscaping and design features are reviewed and finalized, it cannot be determine if wind speeds would actually be reduced below the City wind threshold. As such, these impacts would remain significant and unavoidable. Cumulative impacts from ground winds levels would also be significant and unavoidable.

The proposed project would remove the Schilling Garden, which is considered to be a historical resource. In addition, the removal of the garden would cause a substantial adverse change in the historical significance of adjacent historic structures, the 244 Lakeside Drive Apartments and the Regillus apartments, the Lakeside Drive Building Group API, and a cumulative impact to the API. Mitigation measures would not be able to reduce these impacts to a less-than-significant level. As such, these impacts would remain significant and unavoidable.

[3] The City of Oakland's General Plan Housing Element (adopted by City Council, December 2010) specifically identified weekday PM Peak Hour operations at this intersection as significant and unavoidable in future year scenarios. Through certification of the Housing Element, the City Council adopted a statement of overriding considerations for the impact at this intersection. Therefore, weekday PM Peak Hour operations at this intersection have been cleared from further CEQA analysis.

[4] Ibid.

D. EFFECTS FOUND NOT TO BE SIGNIFICANT

Meeting between 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 Emerald Views Residential Development EIR. The Notice of Preparation (NOP) was published on November 11, 2007, and public scoping sessions were held on November 28, 2007 in front of the Oakland City Council, and December 10, 2007 in front of the Landmarks Preservation Board, 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.

Those 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; and Mineral Resources.

1. Agricultural Resources

The project site currently contains a historic garden that has been in place since the early twentieth-century. The site is surrounded by commercial uses to the north and residential uses to the west and south. No agricultural or farmland uses are located within or adjacent to the project site.

2. Mineral Resources

The project site is located in an urbanized area of Oakland, and no known mineral resources are located within or near the site. Mineral resource extraction activities have not taken place within or around the project site during recent history.

VII. REPORT PREPARATION

A. REPORT PREPARATION

LSA Associates, Inc. *Report Production and Management; Project Description; Land Use; Planning Policy; Population and Housing; Transportation and Circulation; Air Quality; Noise and Vibration; Aesthetics, Shadow and Wind; Utilities and Infrastructure;* and *Public Services and Recreation.*

2215 Fifth Street
Berkeley, CA 94710

David Clore, AICP, Principal
Shannon Allen, AICP, Principal/Project Manager
Amy Paulsen, AICP, Associate
Amy Fischer, Senior Planner *(Air Quality and Noise)*
Phil Ault, Air Quality/Noise Specialist *(Air Quality and Noise)*
Jason Paukovits, Senior Air Quality/Global Climate Change Planner *(Air Quality and Global Climate Change)*
Ron Brugger, Senior Air Quality Specialist *(Air Quality)*
Charis Cronan, Word Processing
Patty Linder, Graphics and Production

LSA Associates, Inc. *Archeological and Paleontological Resources* and *Biological Resources.*
157 Park Place
Point Richmond, CA 94801

Christian Gerike, Principal
E. Timothy Jones, Cultural Resources Manager
Timothy Milliken, Botanist
Matt Ricketts, Senior Wildlife Biologist

Baseline Environmental Consulting. *Soils, Geology, and Seismicity***;** *Hydrology and Water Quality* and *Public Health and Hazards.*
5900 Hollis Street, Suite D
Emeryville, CA 94608

Yane Nordhav, R.G., Principal
Bruce Abelli-Amen, PG, Hydrogeologist
Ralph Russell, Environmental Specialist

AECOM. *Transportation, Circulation and Parking.*
2101 Webster Street, Suite 1900
Oakland, CA 94612

Tim Erney, AICP, PTP, Transportation Engineering Department Manager
Jeffrey Chan, PTP, Senior Transportation Planner II

Carey & Co., Inc. *Cultural and Historic Architectural Resources.*
Carey & Co. Inc.
Old Engine Co. No. 2
460 Bush Street
San Francisco, CA 94108
Hisashi "Bill" Sugaya, AICP, Preservation Planner
Matthew Davis, Preservation Planner
Karen McNeill, PhD, Historian

Environmental Vision. *Visual Resources* and *Shade and Shadow.*
2550 9th Street
Berkeley, CA 94710
Marsha Gale, Principal
Chuck Comwall, Principal

Donald Ballanti, Certified Consulting Meteorologist. *Wind.*
1424 Scott Street
El Cerrito, CA 94530

B. PRIMARY CITY CONTACTS

City of Oakland
Community & Economic Development Agency
250 Frank Ogawa Plaza
Oakland, CA 94612

Heather Klein, Planner III, Planning and Zoning Division
Eric Angstadt, Deputy Director, Community and Economic Development Agency, Environmental Review Officer

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