DRAFT ENVIRONMENTAL IMPACT REPORT

VOLUME I

THE VERANDA SHOPPING CENTER

CITY OF CONCORD

SCH #2016012057

LSA

May 2016

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City of Concord
Planning Division
1950 Parkside Drive, MS/53
Concord, California 94519-2578
fax: (925) 671-3381

Telephone: (925) 671-3128

NOTICE OF AVAILABILITY
DRAFT ENVIRONMENTAL IMPACT REPORT

PROJECT TITLE: **The Veranda Shopping Center**

STATE CLEARINGHOUSE NUMBER: **2016012057**

LEAD AGENCY: **City of Concord**

PROJECT LOCATION: 2001-2003 Diamond Boulevard, Concord, Contra Costa County (APN: 126-440-001). The project site is located on the west side of the City of Concord and is generally bounded by Diamond Boulevard to the northeast, Galaxy Way to the northwest, Interstate 680 (I-680) to the southwest, and Willow Way and the Willows Shopping Center to the southeast. Regional access to the project site is provided by I-680 and State Route 242 (SR-242) via Willow Pass Road to the south and Concord Avenue to the north. A sign ordinance amendment proposed by the project applicant could potentially apply to other commercially zoned properties with freeway frontage along I-680 in the City where a multi-tenant shopping center (at least 300,000 square feet in size) could be developed.

EXISTING SITE CHARACTERISTICS: The 30-acre project site currently contains office buildings, parking, landscaping, and related improvements developed between 1970 and 1984 as a regional office for Chevron Corporation. At full occupancy, the office buildings at the site housed over 2,500 employees. As of January 2016 when environmental review commenced, approximately 400 Chevron employees worked at the site. The buildings were vacated in April 2016. Four office buildings with approximately 619,000 square feet of floor area are located in the center of the site, and surface parking lots with approximately 1,690 parking spaces surround the buildings. A wireless telecommunications facility is also located on the site. The project site is not on a list of hazardous waste sites enumerated pursuant to Government Code Section 65962.5.

PROJECT DESCRIPTION: The project applicant, CenterCal Properties, LLC, proposes to develop a commercial shopping center (project) at the project site. The existing office buildings, paving, landscaping, utilities, and other improvements would be demolished and replaced by new buildings, landscaping, amenities and related infrastructure for the shopping center. The proposed commercial buildings would have a maximum combined total floor area of up to 375,000 square feet. Buildings would generally be one-story and up to 60 feet in height. Up to 1,500 parking spaces would be provided in surface parking lots consistent with Development Code requirements. The ultimate floor area, site plan configuration, and architectural style of the project would be refined through the City's design and site review and approval process. Anticipated uses include a grocery store, theater, restaurants (including drive-through restaurants), general retail, general office / medical office, health club, and financial services. The project includes text amendments to the City's sign ordinance to allow freeway oriented signage (pylon signs up to 60 feet high, and wall signs) at the project site and other commercially zone properties in the City with frontage along I-680, under limited circumstances.

SIGNIFICANT ENVIRONMENTAL EFFECTS OF THE PROJECT: Prior to the incorporation of mitigation measures, the Draft EIR identifies that the project would result in significant environmental effects to the following environmental topics:

Aesthetics
Air Quality
Biological Resources
Geology, Soils, and Seismicity
Greenhouse Gas Emissions
Transportation and Circulation

With the incorporation of recommended mitigation measures, all of project's environmental effects would be reduced to less-than-significant levels for all environmental topics with the exception of Transportation and Circulation, where impacts would remain significant and unavoidable.

The Draft EIR examines a reasonable range of alternatives to the project, including the CEQA-mandated No Project Alternative, a Reduced Project Alternative and three other potentially feasible alternatives capable of reducing or avoiding some of the environmental effects of the proposed project.

DRAFT EIR PUBLIC REVIEW AND COMMENT PERIOD: The Draft EIR and its technical studies are available during the CEQA-required 45-day public review and comment period from **Friday, May 13 to Monday, June 27, 2016** at the following locations:

Concord Planning Division
1950 Parkside Drive MS/53
Concord, CA 94519

Concord Library
2900 Salvio Street
Concord, CA 94519

Written comments regarding the conclusions of the Draft EIR must be received no later than 5:00 p.m. on **Monday, June 27, 2016**. The comments should be addressed to:

Frank Abejo, Senior Planner
Concord Planning Division
1950 Parkside Drive MS/53
Concord, CA 94519
Frank.Abejo@cityofconcord.org
(925) 671-3128

SCHEDULED PUBLIC MEETING: The Planning Commission will conduct a Study Session on **Wednesday, June 1, 2016 at 6:30 p.m. at the City Council Chamber, 1950 Parkside Drive,** to discuss the project and to solicit written and oral comments regarding the Draft EIR. The Planning Commission is scheduled to hold a public hearing on **July 20, 2016** to continue its review of the project and make a recommendation to the City Council.

DRAFT ENVIRONMENTAL IMPACT REPORT

VOLUME I

THE VERANDA SHOPPING CENTER

CITY OF CONCORD

SCH #2016012057

Submitted to:

Frank Abejo, Senior Planner
Concord Planning Division
1950 Parkside Drive MS/53
Concord, California 94519

Prepared by:

LSA Associates, Inc.
157 Park Place
Point Richmond, California 94801
510.236.6810

Project No. CYR1502

LSA

May 2016

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Appendix A: Notice of Preparation (NOP) and NOP Correspondence
Appendix B: Initial Study
Appendix C: Air Quality Modeling Data
Appendix D: Arborist Report
Appendix E: Cultural and Paleontological Resources Study
Appendix F: Geotechnical Engineering Report
Appendix G: Phase I/II Report
Appendix H: Noise Monitoring and Modeling Data
Appendix I: Transportation Impact Study (TIS) and TIS Appendices
Appendix J: Economic Impact Analysis
Appendix K: Alternatives Trip Generation and Traffic Impacts Comparison
Appendix L: Sign Ordinance Amendment (Draft)

1.0 INTRODUCTION

A. PURPOSE OF THE EIR

In compliance with the California Environmental Quality Act (CEQA), this Draft Environmental Impact Report (EIR) describes the potential environmental impacts of the proposed Veranda Shopping Center project (proposed project or project) in the City of Concord. This EIR also evaluates proposed text amendments to the Concord Municipal Code (sign ordinance amendment) to permit freeway oriented signage at the project site and elsewhere within the City under certain limited circumstances, as described more fully in Chapter 3.0 (Project Description). This EIR is designed to fully inform City decision-makers, responsible agencies, and the general public of the proposed project and the potential environmental impacts of project approval as required under CEQA, and recommends a set of feasible mitigation measures to reduce or avoid potentially significant impacts. The EIR also examines a reasonable range of potential alternatives to the proposed project in accordance with the requirements of CEQA.

The City of Concord is the lead agency for environmental review of the proposed project. This EIR will be used by City planning staff, the Planning Commission, the City Council, and the public in their review of the proposed project. It may also be used by other agencies whose discretionary approval may also be required to allow the proposed project to be constructed (see Chapter 3.0, Project Description).

B. PROPOSED PROJECT

The proposed project consists of an application for various entitlements/approvals to redevelop a 30-acre site into a commercial shopping center with up to 375,000 square feet (sf) of floor area. To proceed with the proposed project, the applicant would need to obtain use permits, site and design review, and tree removal permits as well as approval of the proposed text amendments to the City's sign ordinance. The sign ordinance amendment would allow freeway oriented signage under limited circumstances (i.e., subject to location and size constraints) subject to specified findings and conditions of approval as part of a master sign program and use permit. The freeway oriented signage that would be permitted if the text amendment is approved would include pylon signs up to 60 feet high (including electronic reader boards) and wall signs on building elevations, similar to that proposed by the applicant for the project site. For more information on the proposed project, refer to Chapter 3.0, Project Description.

The 30-acre project site currently contains office buildings, parking, landscaping and related improvements developed between 1970 and 1984 as a regional office for Chevron Corporation. At full occupancy, the office buildings at the site housed over 2,500 employees. As of January 2016 and based on currently available information, approximately 400 Chevron employees worked at the site. Four office buildings with approximately 619,000 sf of floor area are located in the center of the site, and surface parking lots with approximately 1,690 parking spaces surround the buildings. A wireless telecommunications facility is also located on the site. In order to provide a conservative analysis, for

the purposes of evaluating the potential environmental impacts associated with the proposed sign ordinance amendment, this DEIR also considers, as appropriate, other locations that could potentially seek similar freeway oriented signage under the modified ordinance (should the Council ultimately approve the proposed sign ordinance text amendments). These other locations would include other commercially zoned properties with freeway frontage along I-680 in the City where a multi-tenant shopping center (at least 300,000 sf in size) could be developed.

C. EIR SCOPE

The City of Concord circulated a Notice of Preparation (NOP) that included a list of potential environmental effects that could result from the proposed project. The NOP was published on January 27, 2016, and was distributed to local, regional, and State agencies, adjacent property owners, and other interested parties on the City's distribution list for environmental notices.

Comments received by the City on the NOP were taken into account during the preparation of the EIR. Comments were received from the following agencies, businesses, and members of the public:

State Agencies

- California Department of Transportation (Caltrans) District 4
- Native American Heritage Commission

Local Agencies

- City of Pleasant Hill
- Central Contra Costa Sanitary District
- Contra Costa County Airport Land Use Commission
- Contra Costa Environmental Health Division
- Contra Costa County Fire Protection District
- Contra Costa County Flood Control and Water Conservation District
- Contra Costa County Water District

Private Individuals / Organizations

- Brenden Theaters
- David Deutscher, Deutscher Properties

The NOP and written comments received in response to the NOP are included in Appendix A.

1. Topics Addressed in This EIR

This Draft EIR focuses on the areas of concern identified in the NOP and comments received on the NOP, as well as all other environmental topic/issue areas required under CEQA for purposes of providing adequate disclosure of the project's potential environmental impacts. The following environmental topics are addressed in this EIR:

A. Aesthetics
B. Air Quality
C. Biological Resources
D. Cultural and Paleontological Resources
E. Geology, Soils, and Seismicity
F. Greenhouse Gas Emissions
G. Hazards and Hazardous Materials
H. Hydrology and Water Quality
I. Land Use and Planning Policy
J. Noise
K. Public Services and Utilities
L. Transportation and Circulation
M. Economic Impact Analysis (including an environmental evaluation of the CEQA topic of "urban decay").

2. Topics Not Addressed in EIR

The following topics were considered but not addressed in this EIR because it was determined based on an Initial Study that the proposed project would not cause significant impacts related to these topics: agricultural and forestry resources, mineral resources, population and housing, and recreation. (See also discussion in Initial Study in Appendix B.)

a. Agricultural and Forestry Resources. The project site is within an urbanized area and already developed with a substantial amount of urban uses including office buildings, parking, landscaping, and other site improvements and contains no agricultural or forestry resources. As a result, agricultural and forestry resource impacts would be less than significant and, as such, are not further analyzed in this EIR.

b. Mineral Resources. According to the City's General Plan Parks and Open Space Element, the project site is not underlain by valuable mineral resources and, therefore, project implementation would not result in the loss of known or locally important mineral resources. As a result, mineral resource impacts would be less than significant and, as such, are not further analyzed in this EIR.

c. Population and Housing. Development of the proposed project is not expected to substantially increase the demand for housing by employees due to the size of the proposed project, the type of uses proposed, and the projected construction time. Although the proposed project would provide a substantial number of jobs in the retail, restaurant, and service sectors, it is anticipated that most workers will already be housed in the City or vicinity (and would not move to the area as a result of employment at the project site) and therefore any increase in population created by the proposed project would not constitute a significant growth-inducing impact nor adversely affect local population. The office use at the project site employed over 2,500 when the buildings were fully occupied. The proposed shopping center project would provide fewer jobs than the current office use. Employees would likely be drawn from the existing local population. In addition, the project would be constructed in an urbanized area and, thus, would not result in growth-inducing effects by requiring the extension of utilities into an undeveloped area. The site's General Plan designation of West Concord Mixed Use does not permit residential uses. Further, development of the proposed project would not result in the displacement of residences given the existing on-site non-residential

uses. Therefore, impacts on population and housing would be less than significant and, as such, are not further analyzed in this EIR.

d. Recreation. The project site is designated for commercial, office, and industrial development such as the proposed commercial shopping center; the project does not propose development of residential or recreational uses, with the exception of a fitness facility as a possible tenant. Since no residential uses are planned for or permitted at this site, there would be no significant demand for recreational facilities. However, employees of the proposed commercial development (who are anticipated to be drawn from the local existing population) may periodically use City parks and other public facilities for leisure time activities, the nearest of which is the Iron Horse Trail. The proposed project's impact on public park facilities would be minimal and would not require the expansion of existing recreational facilities or the construction of new recreational facilities. Therefore, impacts on recreational resources are considered less than significant and are not further analyzed in the EIR.

D. REPORT ORGANIZATION

This EIR is organized into the following chapters:

- *Chapter 1.0 – Introduction*: Discusses the overall EIR purpose, provides a summary of the proposed action and environmental review process, identifies potentially significant issues and concerns, and summarizes the organization of the EIR.
- *Chapter 2.0 – Summary*: Provides a summary of the impacts that would result from implementation of the proposed project, and describes feasible mitigation measures recommended to reduce or avoid significant impacts.
- *Chapter 3.0 – Project Description*: Provides a description of the project objectives, project site, site development history, required approval process, and details of the project itself.
- *Chapter 4.0 – Setting, Impacts, and Mitigation Measures*: Describes the following for each environmental technical topic: existing conditions (setting), potential environmental impacts and their level of significance, and feasible mitigation measures recommended to mitigate identified 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). The significance of each impact is categorized before and after implementation of any recommended mitigation measure(s).
- *Chapter 5.0 – Alternatives*: Provides an evaluation of a reasonable range of potential alternatives to the proposed project.
- *Chapter 6.0 – CEQA-Required Assessment Conclusions*: Provides the required analysis of any growth-inducing impacts, significant irreversible changes, effects found not to be significant, unavoidable significant effects, and cumulative impacts.
- *Chapter 7.0 – Report Preparation*: Identifies preparers of the EIR, references used, and the persons and organizations contacted.

  Appendices (Volume II): The appendices contain the NOP and comments on the NOP and the Initial Study, technical calculations, reports, and other documentation prepared in conjunction with this EIR.

2.0 SUMMARY

A. PROJECT UNDER REVIEW

This EIR has been prepared to evaluate the environmental impacts of the proposed Veranda Shopping Center (project) in the City of Concord and Contra Costa County.

The proposed project consists of an application for various entitlements/approvals to redevelop a 30-acre site into a commercial shopping center with up to 375,000 square feet (sf) of floor area. To proceed with the proposed project, the applicant would need to obtain use permits, site and design review, and tree removal permits as well as approval of the proposed text amendments to the City's sign ordinance. The sign ordinance amendment would allow freeway-oriented signage under limited circumstances (i.e., subject to location and size constraints) subject to specified findings and conditions of approval as part of a master sign program and use permit. The freeway-oriented signage that would be permitted if the text amendment is approved would include pylon signs up to 60 feet high (including electronic reader boards) and wall signs on building elevations, similar to that proposed by the applicant for the project site. For more information on the proposed project, refer to Chapter 3.0, Project Description.

The 30-acre project site currently contains office buildings, parking, landscaping and related improvements developed between 1970 and 1984 as a regional office for Chevron Corporation. At full occupancy, the office buildings at the site housed over 2,500 employees. As of January 2016 and based on currently available information, approximately 400 Chevron employees worked at the site. Four office buildings with approximately 619,000 sf of floor area are located in the center of the site, and surface parking lots with approximately 1,690 parking spaces surround the buildings. A wireless telecommunications facility is also located on the site. In order to provide a conservative analysis for the purposes of evaluating the potential environmental impacts associated with the proposed sign ordinance amendment, this DEIR also considers, as appropriate, other locations that could potentially seek similar freeway-oriented signage under the modified ordinance (should the City Council ultimately approve the proposed sign ordinance text amendments). These other locations would include other commercially zoned properties with freeway frontage along I-680 in the City where a multi-tenant shopping center (at least 300,000 sf in size) could be developed.

A more detailed description of the proposed project is provided in Chapter 3.0, Project Description.

B. SUMMARY OF IMPACTS AND MITIGATION MEASURES

This summary provides an overview of the analysis contained in Chapter 4.0, Setting, Impacts, and Mitigation Measures. CEQA requires a summary to include discussion of 1) environmental topics addressed in the EIR, 2) significant impacts, 3) recommended mitigation measures, and 4) alternatives to the project.

1. Environmental Topics Addressed in the EIR

An Initial Study was prepared to identify topics for analysis in in the EIR. The Initial Study is included in Appendix B. As a result of the Initial Study analysis, topics "focused out" of this EIR analysis include: Agricultural Resources; Mineral Resources; Recreation; and Population and Housing. These topics are analyzed in the Initial Study (Appendix B) and are not evaluated in detail this EIR. Chapter 1.0, Introduction includes a brief discussion of each of these topics.

The environmental topics evaluated in Chapter 4.0 of this EIR include Aesthetics; Air Quality; Biological Resources; Cultural and Paleontological Resources; Geology, Soils, and Seismicity; Greenhouse Gas Emissions; Hazards and Hazardous Materials; Hydrology and Water Quality; Land Use and Planning Policy; Noise; Public Services and Utilities; Transportation and Circulation; and Economic Impact Analysis.

A Notice of Preparation was circulated for to solicit input from agencies and the general public regarding the scope of the EIR. Issues raised by the public and agencies during the scoping process and/or potential areas of controversy include: transportation and circulation; Native American consultation; wastewater and recycled water service; compatibility with Buchanan Field Airport; environmental health department permits; emergency vehicle access; drainage, flooding, and stormwater impacts; water services; economic impacts.

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" (CEQA Guidelines Section 15382).

Development of the proposed project has the potential to generate environmental impacts in a number of environmental topics areas. Impacts to the following topics, as addressed in Chapter 4.0 of this EIR, would be less than significant for the project: Cultural and Paleontological Resources; Hazards and Hazardous Materials; Hydrology and Water Quality; Land Use and Planning Policy; Noise; Public Services and Utilities; and Economic Impact Analysis. Impacts in the areas listed below, which are specifically addressed in Chapter 4.0 of this EIR, would be potentially significant for the project. Each of the impacts identified in these environmental topics would be reduced to a less-than-significant level if the mitigation measures noted in this EIR are implemented: Aesthetics; Air Quality; Biological Resources; and Geology, Soils, and Seismicity.

3. Significant Unavoidable Impacts

As discussed in Chapters 4.0 of this EIR, all significant impacts could be mitigated to less-than-significant levels with the implementation of the recommended mitigation measures, with the exception of the following transportation and circulation impacts:

TRANS-2: The proposed project would result in unacceptable operations (from LOS D to LOS E in the PM peak hour) at the intersection of Pacheco Boulevard and Center Avenue (#27) under Existing Conditions.

TRANS-3: The proposed project would contribute to the SR-242 Northbound segment north of Concord Avenue operating below the LOS standard during the PM peak hour under Existing Conditions.

TRANS-5: The additional traffic generated by the proposed project would result in unacceptable operations at the intersection of Contra Costa Boulevard and Concord Avenue (#30) during the Saturday peak hour under Near-Term Conditions.

TRANS-8: The additional traffic generated by the proposed project would result in unacceptable operations at the intersection of Contra Costa Boulevard and Concord Avenue (#30) during the Saturday peak hour under Cumulative Conditions.

TRANS-9: The proposed project would contribute to the SR-242 Northbound segment north of Concord Avenue operating below the LOS standard during the PM peak hour under Cumulative Conditions.

TRANS-10: The proposed project would contribute to the SR-242 southbound segment at the off-ramp to Concord Avenue operating below the LOS standard during the AM peak hour under Cumulative Conditions.

TRANS-19: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at Contra Costa Boulevard and I-680 Southbound Ramps (#29) during the AM peak hour under Existing Conditions and the PM peak hour during Cumulative Conditions.

TRANS-20: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at Contra Costa Boulevard and Concord Avenue (#30) during the AM peak hour under Existing Conditions.

TRANS-21: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at I-680 Northbound Ramps and Willow Pass Road (#36) during the AM peak hour under Existing Conditions and Near-Term Conditions.

TRANS-24: The additional traffic generated by the project would result in unacceptable average arterial speeds on southbound Contra Costa Boulevard between Chilpancingo Parkway and Taylor Boulevard during the AM peak hour under Cumulative Conditions.

TRANS-25: The additional traffic generated by the project would contribute to unacceptable average arterial speeds on northbound Contra Costa Boulevard between 2nd Avenue to Chilpancingo Parkway during the PM peak hour under Cumulative Conditions.

Each of the above significant impacts is discussed in detail in 4.L, Transportation and Circulation. Mitigation proposed to reduce each of the above impacts is also listed in Table 2-1 below.

4. Alternatives to the Project

a. Project Alternatives and Principal Characteristics. The following alternatives to the project are considered in this EIR:

(1) Alternative 1: No Project (No Build). The No Project (No Build) Alternative assumes that the environmental setting of the site would remain essentially unchanged, and the project site would continue to be used as an office campus. The only difference between this alternative and the existing setting evaluated as the CEQA environmental baseline in this Draft EIR[1] is that this alternative assumes re-leasing and full occupancy of the existing 619,000 sf of office buildings at the project site with new office tenants. Under this alternative, the project site would not be redeveloped and would remain in its existing condition. The existing office buildings, improvements, and landscaping would remain and continue to be maintained. Because this would be a continuation of the existing office use of the project site, a sign ordinance amendment would not be requested and freeway-oriented signs would not be constructed at the project site and other potential sites along I-680.

(2) Alternative 2: New Office Buildings. The New Office Buildings Alternative assumes redevelopment of the site and construction of 619,000 sf of modern office buildings intended to cater to the needs of the current office market. Under this alternative, all of the existing office buildings would be demolished and replaced with new modern office buildings that would better cater to the current demands market for office space in Concord. Most of the existing parking lots and improvements such as on-site utilities and landscaping would also be removed and replaced. However, this alternative assumes that the majority of the mature trees around the perimeter of the site that are in moderate to good condition would be preserved with the new development. Because this is an office use, a sign ordinance amendment would not be requested and freeway-oriented signs would not be constructed at the project site and potential other sites along I-680.

(3) Alternative 3: Reduced Project. The Reduced Project Alternative assumes redevelopment of the site with a shopping center similar to the proposed project, but with a reduced size of 300,000 sf. The project would include a movie theater and grocery store (key tenants of the proposed project) plus 220,000 sf of other shopping center tenants (retail, restaurants, etc.) similar to those proposed for the project. Because this project assumes redevelopment of the site and operation of a shopping center, it would have similar construction and operational characteristics as the proposed project, albeit somewhat reduced given the overall reduction in square footage. Consistent with the proposed project, this alternative assumes that a sign ordinance amendment would be requested and that freeway-oriented signage would be constructed at the project site and potentially other sites along I-680.

(4) Alternative 4: Revised Project. The Revised Project Alternative assumes redevelopment of the site with buildings totaling 375,000 sf of floor area. The alternative would have a grocery store and 255,000 sf of shopping center tenants similar to the proposed project. However, the movie theater

[1] The CEQA baseline in the Draft EIR evaluates occupancy of the site with approximately 400 employees given that this was the circumstance at the time environmental review commenced; the buildings were fully vacated in April 2016. The CEQA baseline also assumes that 795 trees exist on the project site for the same reason. Because 93 trees were removed along the freeway frontage in late January 2016, the No Project (No Build) Alternative assumes that 702 trees would remain on the site.

would be eliminated and an 85,000 sf office building would be located on the site. Because this alternative assumes redevelopment of the site and operation of a shopping center and office building, it would have similar construction and operational characteristics as the proposed project. Consistent with the proposed project, this alternative assumes that a sign ordinance amendment would be requested and that freeway-oriented signage would be constructed at the project site and allowed at potentially other sites along I-680.

(5) Alternative 5: Big Box Retail. The Big Box Retail Alternative assumes redevelopment of the site with one very large "big box" retailer such as an Ikea, Costco, or a combination of several "big box" retailers, totaling 450,000 sf of floor area. No small individual retail or restaurant tenants would be located on the site. Because this alternative assumes redevelopment of the site with a new commercial building or buildings, it is assumed to have similar construction characteristics as the proposed project, albeit somewhat greater given the overall increase in square footage. Operational characteristics are assumed to be similar to big box retail uses and would be somewhat different than a shopping center made of a mix of many smaller commercial tenants. Consistent with the proposed project, this alternative assumes that a sign ordinance amendment would be requested and that freeway-oriented signage would be constructed at the project site and potentially other sites along I-680.

b. Environmentally Superior Alternative. CEQA requires the identification of the environmentally superior alternative in an EIR (CEQA Guidelines Section 15126.6(e)(2)). The alternatives analysis in Chapter 5.0 concludes that that Alternative 1: No Project (No Build) would have the least number of impacts and, therefore, would be the environmentally superior alternative. This alternative assumes that the project site would not be redeveloped, but that the existing buildings would be re-occupied by office tenants.

Under CEQA, if the No Project alternative is the environmentally superior alternative, the EIR must identify an environmentally superior alternative from among the other alternatives. Pursuant to the analysis above, Alternative 2: New Office Buildings Alternative would result in fewer environmental impacts than the other "build alternatives" (Alternatives 3, 4, and 5). Like the No Project (No Build) Alternative, Alternative 2 assumes 619,000 sf of office use at the site, and would result in the same number of total daily and weekend trips as Alternative 1, which is substantially less than the proposed project or Alternatives 3, 4, or 5. As such, this alternative would result in fewer traffic impacts (though some traffic impacts would remain significant and unavoidable). Alternative 2 would also result in fewer air quality, greenhouse gas, and noise impacts than the other build alternatives due to its reduced number of vehicle trips.

The complete alternatives analysis is discussed in detail in Chapter 5.0 of this EIR.

C. SUMMARY TABLE

Table 2-1 identifies the impacts and mitigation measures for the project. The information in this table is organized to correspond with environmental issues discussed in Chapter 4.0. Information in this table is provided in four columns: 1) impacts, 2) level of significance prior to mitigation measures, 3) mitigation measures, and 4) level of significance after mitigation. For a complete description of potential impacts and recommended mitigation measures, please refer to the specific discussions in Chapter 4.0.

Table 2-1: Summary of Impacts and Mitigation Measures

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
A. Aesthetics			
AES-1: Installation of freeway-oriented signage at qualifying sites along the I-680 freeway in Concord could substantially degrade the visual character of the City as seen by motorists on I-680.	S	AES-1: Use permit applications for freeway-oriented signage at commercial properties shall be reviewed by the Planning Department on a case-by-case basis to determine compliance with identified criteria set forth in the sign ordinance. In addition to other requirements specified in the sign ordinance amendment potentially allowing such signage under specified circumstances, individual applications shall identify all trees to be removed as part of the project. An arborist report shall be submitted for any application that proposes tree removal, and a tree removal permit shall be submitted for the removal of any protected trees. A lighting plan and study shall be included with the application, which shall provide sufficient information as to the proposed illumination, which shall be designed to avoid causing glare that could significantly impact motorists or nearby residential properties. The application shall include visual simulations depicting existing and proposed daytime and nighttime views of the proposed signage. The merits of individual applications shall, among other things, take into consideration the cumulative visual impacts of other freeway-oriented signage in accordance with the requirements set forth in the sign ordinance (i.e., specified findings).	LTS
B. Air Quality			
AIR-1: Demolition and construction period activities could generate significant dust, exhaust, and organic emissions.	S	AIR-1: Consistent with guidance from the BAAQMD, the project applicant shall ensure the following Basic Construction Mitigation Measures are implemented through all construction contracts and specifications for the project: • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. • All haul trucks transporting soil, sand, or other loose material off-site shall be covered. • 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. • All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph). • All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.	LTS

Table 2-1 *continued*

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
		• Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage on this measure shall be provided for construction workers at all access points. • All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator. • A publicly visible sign shall be posted showing the telephone number and name of the person to contact at the City of Concord regarding dust complaints. This person shall respond and take corrective action within 48 hours. The air district's phone number shall also be visible to ensure compliance with applicable regulations.	
C. Biological Resources			
BIO-1: The proposed project could affect protected or special-status species, including nesting birds and roosting bat species.	S	BIO-1a: Prior to construction activities on the project site, a qualified biologist shall conduct a pre-activity survey to determine if and how bats are using the buildings or trees on the site. • A pre-activity bat survey shall be conducted in the cavities of the large trees and at the office buildings by a qualified biologist to determine if nursery or roost sites are present. The pre-activity survey shall be conducted no more than 7 days prior to project-related construction activities (including tree removal) as well as no more than 7 days prior to any building demolition or site clearing. Bat surveys would be conducted during all times of the year, but maternity roosts are more likely to be present from May through July. If bats are found roosting at the site, the following measures shall be implemented: o If feasible, demolition, site clearing or construction will not occur within 50 feet from identified bat roosting sites. o Staging areas, construction equipment, and construction vehicles will be placed at least 100 feet from identified bat roosting sites. o A qualified biologist shall determine the species of bats present and the type of roost (i.e., day roost, night roost, maternity roost, hibernation site). o If the bats are identified as common species, and that the roost is not being used as a maternity roost or hibernation site, the bats may be evicted from its roost site using methods developed by a qualified	LTS

Table 2-1 *continued*

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
		biologist experienced in developing and implementing bat mitigation and exclusion plans. o If special-status bat species are found to be present or if the roost is determined to be a maternity roost or hibernation site for any species of bat, then a qualified biologist experienced in developing bat mitigation and exclusion plans shall develop a mitigation plan to compensate for the lost roost site. Removal of the roost shall only occur once the mitigation plan has been implemented and only when bats are not present in the roost. o The mitigation plan shall detail the methods of excluding bats from the roost and the plans for a replacement roost. One replacement roost shall be provided for each roost impacted. The mitigation plan shall be submitted to the City of Concord and California Department of Fish and Wildlife for approval, to the extent required by applicable laws and regulations, prior to implementation. The plan shall include: 1) a description of the species targeted for mitigation; 2) a description of the existing roost or roost sites; 3) methods to be used to exclude the bats if necessary; 4) methods to be used to secure the roost site to prevent its reuse prior to construction; 5) the location for a replacement roost structure; 6) design details for the construction of the replacement roost; 7) monitoring protocols for assessing replacement roost use; 8) a schedule for excluding bats, demolishing the existing roost, and construction of the replacement roost; and 9) contingency measures that shall be implemented if the replacement roosts do not function as designed. o The replacement roost shall be constructed prior to demolition of the existing roosts. o Special-status bats or a maternity roost/hibernation site shall not be disturbed until the California Department of Fish and Wildlife approves the mitigation plan. <u>BIO-1b:</u> To the extent feasible, vegetation removal activities shall occur during the non-nesting season for birds (September 1 to January 31). For any demolition, site clearing or construction activities conducted during the nesting season, a qualified biologist shall conduct a preconstruction nest survey of all trees or other suitable nesting habitat in and within 250 feet of the limits of work. The survey shall be conducted no more than 7 days prior to the start of work. If the survey indicates the presence of nesting birds, the biologist shall determine an appropriately sized buffer around the nest in	

Table 2-1 *continued*

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
		which no work shall be allowed until the young have successfully fledged, or until the nest is no longer active. The size of the nest buffer shall be determined by the biologist and shall be based on the nesting species and its sensitivity to disturbance. In general, buffer sizes of up to 250 feet for raptors and 50 feet for other birds will be used to prevent disturbance to nesting birds. These buffers may be increased or decreased depending on the bird species and the level of disturbance in the vicinity of the nest. If necessary, the qualified biologist will consult with the California Department of Fish and Wildlife for determining the size of the nest buffer. If buffer zones are established around active nests, periodic monitoring will be conducted to ensure construction is not impacting the nesting bird. If signs of stress are observed during monitoring, the buffer's size will be increased as determined necessary and monitoring will continue.	
D. Cultural and Paleontological Resources			
There are no significant cultural and paleontological resources impacts.			
E. Geology, Soils, and Seismicity			
GEO-1: Implementation of the proposed project could expose people or structures to strong seismic shaking and related seismically induced hazards.	S	GEO-1: Prior to the issuance of grading and building permits, final design plans for the project shall incorporate the recommendations of the project geotechnical investigation report (GeoDesign, 2015).	LTS
GEO-2: Construction of structures in areas of unstable geologic units, including expansive soils, could impact structure integrity.	S	GEO-2: As a condition of approval for grading permits, excavation and shoring activities shall be conducted under the supervision of a certified engineering geologist and/or registered civil engineer who has competence in the field of soils and shoring systems. The geologist or engineer will observe construction to ensure that the work is carried out in accordance with recommendations in the geotechnical report. If subsurface conditions encountered during construction are different from those encountered during the geotechnical investigation, the geologist or engineer will provide appropriate construction modifications, as warranted. After the area is cleared, but before building foundations are constructed, the geologist or engineer will evaluate the suitability of fill material beneath proposed building foundations and determine whether over excavation and replacement of fill at the project site will be necessary. Adherence to recommendations of the supervising geologist or engineer will be a condition of approval for the grading permit.	LTS

Table 2-1 *continued*

F. Greenhouse Gas Emissions			
GHG-1: Demolition and construction activities associated with the project would produce substantial greenhouse gas emissions.	S	GHG-1a: Implement Mitigation Measure AIR-1. GHG-1b: The Applicant shall ensure the following measures are implemented through all construction contracts and specifications for the project: • The idling time of diesel powered construction equipment shall be minimized to 2 minutes. • Low VOC (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings) shall be used. • All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control Technology for emission reductions of NOx and PM. • All contractors shall use equipment that meets the ARB's most recent certification standard for off-road heavy-duty diesel engines. • The project contractor shall use construction equipment that utilizes cleaner fuel and equipment.	LTS
GHG-2: Long-term operation of the project could generate substantial greenhouse gas emissions from area and mobile sources as well as indirect emissions from sources associated with energy consumption, potentially in conflict with the City's Citywide Climate Action Plan (CAP).	S	GHG-2: Prior to the issuance of a building permit, the applicant shall submit to the Planning Division a Greenhouse Gas Reduction Plan referencing construction plans details and specifications to document implementation and compliance with the following applicable Citywide CAP strategies. Implementation of the following Citywide CAP strategies is considered to be applicable, feasible, and effective in reducing greenhouse gas emissions generated by the project: • BE1: Design the proposed commercial buildings pursuant to the applicable provisions of Title 24, Part 11 (Tier 1), to the extent deemed feasible by the Building Official. • BE10: Implement a construction emissions reduction plan, as required by Mitigation Measure GHG-1b. • BH1: Ensure all appliances and fixtures installed in project buildings are water efficient in accordance with Title 24, Part 11, Tier 1, to the extent deemed feasible by the Building Official. • BH2: Implement water-efficient outdoor irrigation consistent with CMC 18.165 and CMC 18.170. • BH3: Incorporate best-in-class water use metering and monitoring for all project buildings. • BH4: Utilize recycled water for outdoor water irrigation, to the extent feasible, as permitted by the plumbing code	LTS

Table 2-1 *continued*

		• TL5: Provide bicycle parking facilities. • TL9: Install street tree species approved by City staff pursuant to CMC 18.165. • TL12: Incorporate Transportation Demand Management (TDM) measures as required by Mitigation Measure TRANS-3. • TL19: Install trees in the parking lots so that 50 percent shading of pavement is achieved within 10 years, pursuant to CMC 18.165. • TL20: Install paving with Solar Reflectance Index (SRI) values greater than conventional paving. • TL23: Provide preferred parking spaces for EVs and /or carpool vehicles, as required by Mitigation Measure TRANS-3. • TL24: Provide a restroom and shower facility for employees as required by Mitigation Measure TRANS-3. • TL25: Provide preferred parking spaces for EVs and /or carpool vehicles, as required by Mitigation Measure TRANS-3.	
G. Hazards and Hazardous Materials			
There are no significant hazards and hazardous materials impacts.			
H. Hydrology and Water Quality			
There are no significant hydrology and water quality impacts.			
I. Land Use and Planning Policy			
There are no significant land use and planning policy impacts.			
J. Noise			
There are no significant noise impacts.			
K. Public Services and Utilities			
There are no significant public services and utilities impacts.			
L. Transportation and Circulation			
TRANS-1: The additional traffic generated by the proposed project would result in unacceptable operation at the intersection of Diamond Boulevard and Signalized Site Driveway (#4) during the Saturday peak hour under Existing Conditions.	S	TRANS-1: Implement the following geometric and signal timing improvements: • Modify intersection traffic signal design and add a second northbound left-turn lane by removing one northbound through lane and extend the queue storage to at least 300 feet. The west leg median will need to also be modified to accommodate two lanes of northbound turning traffic; • Reconfigure the eastbound approach to have an exclusive left turn, shared left and through lane, and exclusive right turn lane; • Convert southbound and northbound left turn lanes from permissive signal phasing to protected signal phasing; • Convert eastbound and westbound movements to run separately (split phasing);	LTS

Table 2-1 *continued*

		• Provide an eastbound right-turn overlap signal phase to run concurrently with the northbound left-turn movement. Northbound U-turns to be prohibited; • Install a crosswalk and pedestrian signal head across the southern leg of the intersection; and • Implement a signal timing improvement project along Diamond Boulevard within the signal's coordination group (between the Willows Shopping Center access intersection and Galaxy Way) by funding actual cost.	
TRANS-2: The proposed project would result in unacceptable operations (from LOS D to LOS E in the PM peak hour) at the intersection of Pacheco Boulevard and Center Avenue (#27) under Existing Conditions.	S	TRANS-2: Implement a signal timing improvement project along Pacheco Boulevard within the signal's coordination group (between Center Avenue and 2nd Avenue) by funding actual cost. The City of Concord is to work with Contra Costa County to implement the signal timing project as necessary.	SU
TRANS-3: The proposed project would contribute to the SR-242 Northbound segment north of Concord Avenue operating below the LOS standard during the PM peak hour under Existing Conditions.	S	TRANS-3: Develop and implement a Transportation Demand Management (TDM) Plan that would discourage single occupant vehicle trips. The TDM Plan shall consist of the following measures: • Participate with other businesses and landowners in the County Connection bus line to support the provision of local commuter service to and from the BART station and the project site on Route 91X; • Provide a minimum of 10 designated parking spaces for carpools and/or electric vehicles. Install conduit necessary to facilitate potential future charging station(s) in accordance with applicable City requirements; and • Provide designated bicycle parking and storage, as well as lockers, and showers/changing facilities for project employees as well as additional bicycle parking throughout the project site in accordance with applicable City requirements.	SU
TRANS-4: The additional traffic generated by the proposed project would result in unacceptable operations at the intersection of Diamond Boulevard and Signalized Site Driveway (#4) during the Saturday peak hour under Near-Term Conditions.	S	TRANS-4: Implement Mitigation Measure TRAF-1.	LTS
TRANS-5: The additional traffic generated by the proposed project would result in unacceptable operations at the intersection of Contra Costa Boulevard and Concord Avenue (#30) during the Saturday peak hour under Near-Term Conditions.	S	TRANS-5: Implement a signal timing improvement project along Contra Costa Boulevard within the signal's coordination group (between I-680 SB Off-Ramp/Target Intersection and Taylor Boulevard) by funding actual cost. In order to maintain signal coordination, synchronization hardware shall be installed at the intersections of I-680 SB Off-Ramp/Target and Concord Avenue on Contra Costa Boulevard by funding actual cost. The City of Concord is to work with the City of Pleasant Hill to implement the signal timing improvement project and install synchronization hardware as necessary.	SU

Table 2-1 *continued*

TRANS-6: The additional traffic generated by the proposed project would result in unacceptable operations at the intersection of Diamond Boulevard and Signalized Site Driveway (#4) during the Saturday peak hour under Cumulative Conditions.	S	TRANS-6: Implement Mitigation Measure TRANS-1.	LTS
TRANS-7: The additional traffic generated by the proposed project would result in unacceptable operations at the intersection of Diamond Boulevard and Willow Pass Road (#7) during the Saturday peak hour under Cumulative Conditions.	S	TRANS-7: Implement a signal timing improvement project along Willow Pass Road within the signal's coordination group (between Diamond Boulevard and Franquette Avenue) by funding actual cost.	LTS
TRANS-8: The additional traffic generated by the proposed project would result in unacceptable operations at the intersection of Contra Costa Boulevard and Concord Avenue (#30) during the Saturday peak hour under Cumulative Conditions.	S	TRANS-8: Implement Mitigation Measure TRANS-5.	SU
TRANS-9: The proposed project would contribute to the SR-242 Northbound segment north of Concord Avenue operating below the LOS standard during the PM peak hour under Cumulative Conditions.	S	TRANS-9: Implement Mitigation Measure TRANS-3.	SU
TRANS-10: The proposed project would contribute to the SR-242 southbound segment at the off-ramp to Concord Avenue operating below the LOS standard during the AM peak hour under Cumulative Conditions.	S	TRANS-10: Implement Mitigation Measure TRANS-3.	SU
TRANS-11: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at Diamond Boulevard and Concord Avenue (#1) during the PM peak hour under Existing and Near-Term Conditions.	S	TRANS-11: Implement a signal timing project at this intersection by funding actual cost. Modifications at this signal may require signal retiming at other intersections within the signal's coordination group (along Diamond Boulevard and Concord Avenue between Burnett Avenue and Market Street) in order to maintain signal coordination. If signal timing changes at other intersections within the signal's coordination group are required to maintain signal coordination, it shall be funded at actual cost.	LTS
TRANS-12: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at Diamond Boulevard and Burnett Avenue (#2) during the Saturday peak hour under Existing and Cumulative Conditions.	S	TRANS-12: Implement a signal timing project at this intersection by funding actual cost. Modifications at this signal may require signal retiming at other intersections within the signal's coordination group (along Diamond Boulevard and Concord Avenue between Burnett Avenue and Market Street) in order to maintain signal coordination. If signal timing changes at other intersections within the signal's coordination group are required to maintain signal coordination, it shall be funded at actual cost.	LTS
TRANS-13: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at Diamond Boulevard and Galaxy Way (#3) during the PM and Saturday peak hours under Existing, Near-Term, and Cumulative Conditions.	S	TRANS-13: Implement the following geometric and signal timing movements: • Extend the eastbound left turn lane to at least 165 feet; • Extend the northbound left turn lane to at least 225 feet; • Extend the southbound left turn lane to at least 100 feet; • Modify intersection traffic signal design to accommodate an 8-phase traffic signal. All left turns are to be converted from permissive signal	LTS

Table 2-1 *continued*

		phasing to protected signal phasing; • Modify the eastbound approach to have two left turn lanes and a shared through and right lane; and • Implement Mitigation Measure TRANS-1, specifically: Implement a signal timing improvement project along Diamond Boulevard within the signal's coordination group (between the Willows Shopping Center access intersection and Galaxy Way) by funding actual cost.	
TRANS-14: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at Diamond Boulevard and Signalized Site Driveway (#4) during the PM and Saturday peak hours under Existing, Near-Term, and Cumulative Conditions.	S	TRANS-14: Implement Mitigation Measure TRANS-1.	LTS
TRANS-15: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at Diamond Boulevard and Willow Way (#5) during the PM and Saturday peak hours under Cumulative Conditions.	S	TRANS-15: Implement one of the following improvements: • Modify intersection traffic signal design and geometrics for an 8-phase signal to include the following: o Convert all left turns from permissive signal phasing to protected signal phasing; o Modify the westbound approach to have two exclusive left lanes and a shared right and through lane; o Modify the eastbound approach to have one exclusive left lane and a shared right and through lane; and o Implement Mitigation Measure TRANS-1, specifically: Implement a signal timing improvement project along Diamond Boulevard within the signal's coordination group (between the Willows Shopping Center access intersection and Galaxy Way) by funding actual cost. • Modify intersection traffic signal design and geometrics for a split phase signal to include the following: o Convert the northbound and southbound left turn lanes from permissive signal phasing to protected signal phasing; o Provide separate eastbound and westbound signal phases (split phase); o Modify the westbound approach to have an exclusive left lane, a shared left and through lane, and an exclusive right lane; and o Implement Mitigation Measure TRANS-1, specifically: Implement a signal timing improvement project along Diamond Boulevard within the signal's coordination group (between the Willows Shopping Center access intersection and Galaxy Way) by funding actual cost.	LTS
TRANS-16: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at Diamond Boulevard and Willows Shopping Center (#6) during the Saturday peak hour under Cumulative Conditions.	S	TRANS-16: Implement Mitigation Measure TRANS-1, specifically: Implement a signal timing improvement project along Diamond Boulevard within the signal's coordination group (between the Willows Shopping Center access intersection and Galaxy Way) by funding actual cost.	LTS

Table 2-1 *continued*

TRANS-17: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at Market Street and Willow Pass Road (#9) during the Saturday peak hour under Near-Term Conditions.	S	TRANS-17: Implement a signal timing project at this intersection by funding actual cost. Modifications at this signal may require signal retiming at other intersections within the signal's coordination group (along Willow Pass Road and Clayton Road between Market Street and Galindo Street and along Concord Avenue between Harrison/Bonifacio Street and Laguna Street) in order to maintain signal coordination. If signal timing changes at other intersections within the signal's coordination group are required to maintain signal coordination, it shall be funded at actual cost.	LTS
TRANS-18: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at Galindo Street and Willow Pass Road (#11) during the Saturday peak hour under Existing Conditions.	S	TRANS-18: Implement a signal timing improvement project at this intersection by funding actual cost. Modifications at this signal may require signal retiming at other intersections within the signal's coordination group (along Willow Pass Road and Clayton Road between Market Street and Galindo Street and along Concord Avenue between Harrison/Bonifacio Street and Laguna Street) in order to maintain signal coordination. If signal timing changes at other intersections within the signal's coordination group are required to maintain signal coordination, it shall be funded at actual cost.	LTS
TRANS-19: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at Contra Costa Boulevard and I-680 Southbound Ramps (#29) during the AM peak hour under Existing Conditions and the PM peak hour during Cumulative Conditions.	S	TRANS-19: Implement Mitigation Measure TRANS-5.	SU
TRANS-20: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at Contra Costa Boulevard and Concord Avenue (#30) during the AM peak hour under Existing Conditions.	S	TRANS-20: Implement Mitigation Measure TRANS-5.	SU
TRANS-21: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at I-680 Northbound Ramps and Willow Pass Road (#36) during the AM peak hour under Existing Conditions and Near-Term Conditions.	S	TRANS-21: Implement a signal timing improvement project at this intersection by funding actual cost. The City of Concord is to work with Caltrans to implement the signal timing project as necessary.	SU
TRANS-22: The addition of project traffic would result in westbound left turn queue at Galaxy Way and the eastern Project Driveway which does not have left turn queue storage during the AM, PM, and Saturday peak hours for the Existing, Near-Term, and Cumulative Conditions.	S	TRANS-22: Build a left turn lane for the westbound approach with queue storage of at least 50 feet.	LTS
TRANS-23: The addition of project traffic would result in westbound left turn queue at Galaxy Way and the western Project Driveway which does not have left turn queue storage during the AM, PM, and Saturday peak hours for the Existing, Near-Term, and Cumulative Conditions.	S	TRANS-23: Build a left turn lane for the westbound approach with queue storage of at least 50 feet.	LTS

Table 2-1 *continued*

TRANS-24: The additional traffic generated by the project would result in unacceptable average arterial speeds on southbound Contra Costa Boulevard between Chilpancingo Parkway and Taylor Boulevard during the AM peak hour under Cumulative Conditions.	S	TRANS-24: Implement Mitigation Measures TRANS-3 and TRANS-5.	SU
TRANS-25: The additional traffic generated by the project would contribute to unacceptable average arterial speeds on northbound Contra Costa Boulevard between 2nd Avenue to Chilpancingo Parkway during the PM peak hour under Cumulative Conditions.	S	TRANS-25: Implement Mitigation Measures TRANS-2, TRANS-3 and TRANS-5.	SU
TRANS-26: The project is projected to have a significant increase in the number of vehicles on Diamond Boulevard which increases delay at several of the intersections along Diamond Boulevard. This increase in delay along Diamond Boulevard could affect the performance of The County Connection bus routes using Diamond Boulevard.	S	TRANS-26: Implement Mitigation Measures described in TRANS-1, TRANS-11, TRANS-12, TRANS-13, and TRANS-15.	LTS
TRANS-27: The increase in pedestrian activity expected as a result of the project may lead to more pedestrians crossing Diamond Boulevard to access destinations such as Seafood City located across the street. The intersection of Diamond Boulevard and the Signalized Site Driveway provides only one crosswalk across the north leg.	S	TRANS-27: Implement Mitigation Measures described in TRANS-1, specifically: • Install a crosswalk and pedestrian signal head across the southern leg of the intersection.	LTS
TRANS-28: Demolition and construction activities associated with the proposed project would result in an increase in truck traffic to and from the site and could lead to unsafe conditions near the project site.	S	TRANS-28: As a condition of project approval, the project applicant shall submit a Traffic Control Plan for the City's approval prior to issuance of the grading and building permits. The Traffic Control Plan shall specifically designate travel routes for large vehicles and also stipulate that site access points be monitored and controlled by flaggers for large construction vehicle ingress and egress. Furthermore, the plan shall include provisions for regular street sweeping near the site. The following recommendations shall be considered in the plan: • Warning signs indicating frequent truck entry and exit should be posted on Diamond Boulevard and Galaxy Way. • Debris and mud on Diamond Boulevard, Galaxy Way, and other nearby streets caused by trucks shall be monitored daily and a street cleaning program shall be instituted. • Truck drivers shall be notified of and required to use the most direct route between the site and area freeways or other approved truck routes.	LTS
M. Economic Impacts			
There are no significant economic impacts.			

Source: LSA Associates, 2016.

3.0 PROJECT DESCRIPTION

This chapter describes the Veranda Shopping Center Project (proposed project or project) that is proposed by CenterCal Properties, LLC (Applicant) and is evaluated by the City of Concord (City) in this Environmental Impact Report (EIR). As described more fully below, the Applicant proposes to replace the existing office buildings, parking, landscaping, and other improvements at the project site with a commercial shopping center. This EIR also evaluates text amendments to the Concord Municipal Code (sign ordinance amendment) proposed by the Applicant to permit freeway oriented signage at the project site and elsewhere within the City under limited circumstances.

A. PROJECT SITE

The following discussion describes the geographic context of the project site and provides a brief overview of existing land uses within and around the site. In order to provide a conservative analysis, for the purposes of evaluating the potential environmental impacts associated with the proposed sign ordinance amendment, this Draft EIR also considers, as appropriate, other locations that could potentially seek similar freeway oriented signage under the modified ordinance (should the City Council ultimately approve the proposed sign ordinance amendment). These other locations would include other commercially zoned properties with freeway frontage along I-680 in the City where a multi-tenant shopping center (at least 300,000 sf in size) could be developed.

1. Location

The project site is located at 2001-2003 Diamond Boulevard in the City of Concord, Contra Costa County. The approximately 30-acre project site (APN 126-440-001) is located on the west side of the City and is generally bounded by Diamond Boulevard to the northeast, Galaxy Way to the northwest, Interstate 680 (I-680) to the southwest, and Willow Way and the Willows Shopping Center to the southeast. Regional access to the project site is provided by I-680 and State Route 242 (SR-242) via Willow Pass Road to the south and Concord Avenue to the north. Refer to Figure 3-1, Project Location and Regional Vicinity Map, and Figure 3-2, Aerial Photo.

2. Surrounding Land Uses

A variety of commercial and office uses surround the project site, including office and government services, retail, hotel, education, restaurants, and automobile sales and repair. The Willows Shopping Center abuts the project site to the southeast. Buchanan Field, a regional airport owned and managed by Contra Costa County, is less than 0.5 mile north of the project site (north of Concord Avenue) and is within the City's Sphere of Influence (but outside of the City's municipal boundaries). Buchanan Field Golf Course, also operated by Contra Costa County, is located on the south side of the airport property adjacent to Concord Avenue.

The Iron Horse Regional Trail, a Class I multi-use trail and the Walnut Creek drainage channel are located approximately one-quarter mile east of the project site, behind the Hilton Hotel and the Home Depot properties, and south of the Willows Shopping Center. Waterworld California, a large

commercial water park open from May through October, is located on the east side of the Walnut Creek drainage channel. SR-242 is located approximately one-half mile east of the project site, and merges with I-680 south of Willow Pass Road.

I-680 abuts the project site to the southwest, and the Sunvalley Shopping Center, a large regional shopping mall, is located to the west of the freeway and south of the project site. A large commercial district is located in the vicinity of this mall, generally along Contra Costa Boulevard. The City of Pleasant Hill is west of Contra Costa Boulevard and I-680. Residential neighborhoods and Diablo Valley College are located between Golf Club Road and Taylor Boulevard/Sunvalley Boulevard, west and southwest of the project site.

3. Site Characteristics

The approximately 30-acre project site currently contains office buildings, parking, landscaping, and other improvements developed between 1970 and 1984 as a regional office for Chevron Corporation. The site is generally level, with the exception of landscaped berms around the site perimeter and landscaped areas around the buildings. The site elevation is approximately 26 feet above mean sea level, and the buildings are constructed on or surrounded by an approximately 4-foot-high pad. Four buildings with a total of approximately 619,000 square feet of floor area[1] are located in the center of the project site, as described in Table 3.A-1. Surface parking lots with a total of approximately 1,690 parking spaces surround the buildings. The one- to four-story buildings have glass and concrete façades with a contemporary architectural style. Mechanical equipment serving these buildings is located in Building 4. Landscaped courtyards are located adjacent to the buildings, and Building 3 includes three enclosed courtyards. A wireless telecommunications facility is located on the rooftop of Building 3.

Table 3.A-1: Existing Buildings

Building #	Use Description	Approx. Size (sq. ft.)	Construction
1 1A	Vacant shell, since 2010 remodel Data center and fitness center in partial basement	134,500[2]	Two-story, steel-frame concrete Addition to Building 1, built in 1980
2 (2003 Diamond Blvd.)	Office	96,500	Two-story, steel-frame concrete, built in 1971
3 (2001 Diamond Blvd.)	Office with a cafeteria and central open atrium	388,000	Four-story, steel-frame concrete, built in 1982; building height is approximately 65 feet
4	Mechanical systems including central boiler and water cooled chiller system	10,000	One-story concrete-block masonry, built in 1984
Total		**619,000 (office use)** **10,000 (mechanical)**	

Source*: Phase I and II Environmental Site Assessment, Northgate Environmental Management, Inc., November 17, 2015.*

[1] This figure does not include square footage from the existing mechanical systems.

[2] Total square footage of Buildings 1 and 1A (an addition to Building 1).

The primary entrance driveway to the project site is a signalized intersection located at the center of the Diamond Boulevard frontage. A small gated driveway for emergency vehicles is also located on Diamond Boulevard near Willow Way. Two secondary driveways are located on Galaxy Way, one at mid-block and the other at the rear of the site.

Landscaping, primarily consisting of turf and trees, covers approximately 19 percent of the project site. Mature trees are planted in landscape strips around the perimeter of the project site and along the main entrance driveway. Trees and landscaping are also planted adjacent to the on-site buildings and within the parking lots. 795 trees were located on the site at the commencement of environmental review in January 2016. However, in late January 2016, the Applicant removed approximately 93 trees located along the freeway frontage, including 3 protected trees. Therefore, a total of 702 trees now exist on the project site, including 58 protected trees. For the purposes of a conservative analysis, this Draft EIR considers the number of trees existing at the project site at the commencement of the environmental analysis, 795 (including 61 protected trees). Refer to Figure 3-3a-3f, Site Photos.

Based on information provided to the Applicant from Chevron, at full occupancy, the office buildings at the project site housed over 2,500 employees. As of the commencement of environmental review in January 2016 and based on currently available information, approximately 400 Chevron employees worked at the site. The office buildings were fully vacated in April 2016.

4. General Plan and Zoning

The project site is within the Central Concord planning subarea (known as Planning Subarea 1) in the City of Concord 2030 General Plan. The General Plan land use designation for the project site is West Concord Mixed Use (WCMU), and the corresponding zoning designation is West Concord Mixed Use (WMX). Surrounding properties are within the same General Plan land use designation and zoning district, with the exception of the Sunvalley Shopping Center, which is within the Regional Commercial (RC) zoning district and General Plan land use designation.

B. PROJECT OBJECTIVES

The objectives of the proposed project include the following:

- Redevelop an underutilized site near major transportation and transit corridors to eliminate outmoded uses and build an economically viable commercial shopping center that will contribute to the City's short-term and long-term economic vitality by generating increased sales tax and other revenues;
- Establish land uses that are complementary to existing uses in the vicinity, including, among others, a high-quality grocery store, a theater, restaurants, and other community-serving commercial uses, which also ensures a diverse mix of on-site tenants and uses (including entertainment uses) to encourage customers to shop and stay at the center;
- Develop a high-quality, diverse shopping center to replace outdated buildings with upgraded building and site improvements that incorporate updated conservation standards, water quality features and other measures, as well as extensive landscaping and other amenities that promote a vibrant shopping experience on-site and also benefit surrounding developments; and

- Utilize the project's advantageous location near major transportation facilities to facilitate access, enhance connectivity, and minimize, as feasible, traffic and other related impacts on surrounding roadways.

C. PROPOSED PROJECT

1. Demolition, Site Clearance, and Project Construction

a. Demolition of Existing Improvements. All existing buildings, utilities, trees, landscaping and other on-site improvements would be demolished to clear the project site. Demolition and site clearance activities are anticipated to take approximately 3 to 4 months. Prior to demolition of the buildings, any hazardous building materials such as asbestos and lead would be identified and tested and then removed and disposed of in the appropriate landfills in accordance with applicable laws and regulations. It is anticipated that trees would be cut with chain saws and/or removed with bulldozers, and removed to a compost facility. It is also anticipated that the buildings would be demolished by being dismantled; certain demolition debris may be re-used on-site (as feasible) or otherwise would be removed and disposed of in a local landfill in accordance with applicable laws and regulations. During demolition, the perimeter of the project site would be surrounded by temporary fencing screened with a dark green fabric to secure the site, limit waste and dust from blowing off-site, and to minimize views into the construction site. This temporary fencing would also be maintained during project construction, as discussed further below.

b. Construction of Proposed Project. The combination of demolition (as described above) and construction of the project are anticipated to take a total of approximately 12 to 18 months. While timing to construct is dependent on a variety of factors, for purposes of this analysis, it is assumed that after demolition is complete, construction would commence in September 2016 and end in September 2017. The project would be constructed in a single phase.

2. Project Characteristics

a. Proposed Buildings and Uses. The Applicant proposes to construct a commercial shopping center at the project site. The proposed commercial buildings would have a maximum combined total floor area of up to 375,000 square feet and a floor area ratio (FAR) of 29 percent.

The ultimate floor area, site plan configuration, and architectural style of the project would be refined through the City's design and site review and approval process and would conform to all applicable standards of the Development Code. Anticipated uses include a grocery store, theater, restaurants (including drive-through restaurant), general retail, general office/medical office, health club, and financial services. While the ultimate tenant mix and actual square footage for each specific type of use would depend on market and other considerations, Table 3.C-1 lists the conceptual floor areas envisioned for the shopping center by the type of use for purposes of a conservative analysis.[3]

[3] The ultimate tenant mix as well as the actual square footage attributed to each specific type of use would depend on market and other considerations, but it shall be consistent with the analysis set forth herein and shall not result in any new or more severe significant impacts than have already been evaluated in this EIR.

Table 3.C-1: Conceptual Uses and Estimated Floor Area

Land Use	Approximate Floor Area (sq. ft.)
Grocery Store	35,000
Restaurant, Full Service	45,000
Restaurant, Limited Service	40,000
Restaurant with Drive Through	5,000
Retail Sales, General	165,000
Offices, Professional, Medical, and Dental	5,000
Fitness Facility, Health Club	30,000
Bank/Financial Services	5,000
Theater, Auditorium	45,000
Total Floor Area (Maximum)	**375,000**

As shown in the conceptual site plan, the majority of the commercial buildings would be situated at the rear of the project site in an L-shaped configuration abutting I-680 and the Willows Shopping Center property. Several smaller multi-tenant commercial buildings would be located along the Diamond Boulevard frontage adjacent to the central site entrance and at the corners of the site. The proposed grocery store would be located adjacent to the Galaxy Way/Diamond Boulevard intersection. The conceptual Site Plan is provided in Figure 3-4.

The proposed buildings would generally be one story and 30 to 40 feet in height, with additional height associated with architectural elements such as towers (non-occupiable area) and parapet walls (up to 20 feet high), resulting in a maximum structure height of 60 feet. Some buildings may include a second story or mezzanine within the maximum 60-foot height. Preliminary Building Elevations are included in Figures 3-5a–5e.

b. Landscaping. New landscaping compatible with the new shopping center layout would be installed throughout the project site. Landscaped parking lots would occupy the center of the site. Bio treatment planters would be included throughout the parking lot to capture and treat stormwater runoff. Approximately 20 percent of the project site would be landscaped with vegetation, consistent with Development Code standards. Landscaping would include approximately 700 new trees. The conceptual landscape plans call for the new trees to be large specimen-size trees (36-inch, 48-inch, or larger box size), which would accelerate the transition to mature landscaping on the site. Approximately 6 percent of the landscaped area is described as, “enhanced common area” with outdoor amenities for customers. For example, a landscaped plaza is proposed at the southwest corner of the site in front of the theater building. Amenities in the plaza may include a play area, water feature, a multi-purpose platform, and outdoor seating.

All of the existing on-site trees are proposed for removal due to a combination of factors, including conflicts with the proposed shopping center layout, construction of landscaping for stormwater treatment in place of existing landscaping, age, poor health, and tree type. Approximately 61 of the trees existing on-site as of the date the environmental review commenced are considered protected trees pursuant to the City’s tree preservation and protection ordinance due to species type or a trunk

diameter over 24 inches.[4] Thus, the project would require the issuance of a tree permit to allow for the removal and replacement of the protected trees. As discussed more fully in Chapter 4.C Biological Resources, the project is anticipated to plant at least 183 trees (a 3:1 replacement ratio) to replace the protected trees to be removed as a condition of the required tree removal permit.

c. Signage. Signage for the commercial center would be subject to the review and approval of a master sign program that would detail the location, type, and size for all tenant and project identification signs, along with drawings showing the permitted options for the type and placement of each sign indicating font style, letter size, colors, materials, and method of construction; provisions for logos; methods of illumination; materials; construction details; and criteria for tenants and approval process for future signs. The proposed master sign program for the shopping center includes a variety of freestanding monument signs at the site perimeter of the site and driveways, with smaller internal directional signage. The monument signs would complement the architectural design of the shopping center. Building signage for tenants would also be included in the master sign program. Figures 3-6a- 6c shows the locations and types of signs in the proposed master sign program.

The proposed master sign program also includes signage that is intended to be viewed from the freeway. The freeway oriented signage proposed at the project site includes both highway pylon signs and wall signs with text and graphics, as described in more detail below:

- **Highway Pylon Signs.** Three highway pylon signs are proposed along the rear of the project site, adjacent to the freeway at the southwest, northwest, and central portions of the frontage (shown on Figure 3-6a, Sign Program- Sign Locations). Each highway pylon would be up to 60 feet tall, designed in an architectural style that complements the other monument signs within the shopping center, but at a larger scale. The signs would be designed to complement the proposed shopping center architecture (e.g., stucco, wood style trellis). Conceptual plans for the proposed signs depict the shopping center name that would be at the top of the sign, with major tenant names in the middle, and the City of Concord name and/or logo in the lower portion of the sign. One of the three pylon signs (most likely the middle sign) is proposed to have an electronic reader board (digital screen) in place of the tenant names. The electronic reader board would have the same capabilities for display as a television or computer screen, but messages would be limited to advertising for the shopping center tenants (and potentially public service announcements and other community messages) in accordance with all applicable laws and regulations.
- **Wall Signs.** Wall signs with shopping center tenant names and large graphic images are proposed on the rear of the buildings facing the freeway. The large graphic images on wall signs could include images such as enlarged movie posters or shopping center lifestyle graphics with an appearance similar to billboards or murals.

Sign Ordinance Amendment. In order to allow the proposed freeway oriented signage, a text amendment to the City's sign ordinance (Municipal Code Section 18.180) (sign ordinance amendment) would require approval by the City Council. This sign ordinance amendment would allow freeway oriented signage under limited circumstances (i.e. subject to location and size constraints) subject to specified findings and conditions of approval as part of a master sign program and use permit. The freeway oriented signage that would be permitted by the text amendment would include pylon signs up to 60 feet high (including electronic reader boards) and wall signs on building

[4] HortScience, 2016. Arborist Report, Chevron Facility. April.

elevations, similar to that proposed by the Applicant for the project site. The draft text of the sign ordinance amendment proposed by the Applicant is included in Appendix L).

If the proposed text amendment to permit freeway oriented signage were approved, it would also potentially allow for freeway oriented signage at a limited number of other locations in the City, to the extent such applications were submitted by other property owners and approved by the City. These other locations are limited in nature because they would otherwise need to meet the requirements of the amended sign ordinance including: having frontage along I-680 in the City; be commercially zoned; and be large enough in size to accommodate a multi-tenant shopping center of at least 300,000 square feet. Based on these criteria, properties in the vicinity of the project site that could be eligible for freeway oriented signs include the Willows Shopping Center and the Sunvalley Shopping Center.

As stated above, there are a limited number of other potential sites that could conceivably benefit from the sign ordinance amendment proposed as part of this project. Because no applications for freeway oriented signage for other properties are currently on file, it would be speculative to evaluate in detail the potential environmental impacts of any such applications (given that both the location(s) as well as substantive content are unknown as of the writing of this Draft EIR). Nevertheless, for purposes of a conservative analysis, this EIR evaluates the environmental effects of the proposed sign ordinance amendment to the extent appropriate based on the currently available information, as follows. The potential effects of the specific freeway oriented signage proposed for the shopping center project are evaluated in detail, while the potential effects of freeway oriented signage at other sites is evaluated at a programmatic level because there are no proposals at other sites. Applications for freeway oriented signage at other qualifying sites in the City would be subject to review and approval of a use permit application and master sign program which are discretionary applications requiring environmental review by the City. For the purposes of the programmatic analysis of the sign ordinance amendment included within this EIR, it is assumed that freeway oriented signage, including several additional large highway pylon signs, could eventually be installed at properties along the I-680 freeway in the City, including properties adjacent to the project site.

d. Access, Circulation, and Parking. Vehicular access to the project site would be from Diamond Boulevard and Galaxy Way, which connect with I-680 at Willow Pass Road to the south and Concord Avenue to the north. Existing driveways on Diamond Boulevard and Galaxy Way would be utilized or modified, and two new driveways would be added to facilitate vehicular access. A total of three driveways would be located on the Diamond Boulevard frontage: the existing central signalized driveway with two inbound and two outbound lanes, plus two additional right-in/right-out driveways. On Galaxy Way, one additional driveway would be added to access the main drive aisle in front of the proposed buildings. The medians within Galaxy Way and Diamond Boulevard would be modified where necessary to facilitate access to the site.

A drive aisle would be located behind the proposed buildings along the southwest and southeast property lines to provide access to the rear of the buildings for truck deliveries, refuse collection, emergency access, and additional parking for employees and customers.

Parking would primarily be located within the central portion of the project site. The project would provide up to 1,500 parking spaces, as needed (depending on final square footage), to meet the project's parking demand, and consistent with Development Code requirements. Disabled spaces

would be provided in locations and at ratios required by the Americans with Disabilities Act (ADA) and other applicable laws and regulations. The project would provide approximately 29 motorcycle parking spaces to meet the City requirement of 1 space per 50 vehicle spaces. In addition, up to eight spaces designated for electric vehicles (EV) would be provided throughout the project site, which would be improved with electrical conduit to accommodate the potential future installation of charging stations.

The project would provide sufficient bicycle parking to satisfy the City's requirements, which is anticipated to necessitate parking for over 200 bicycles (which is consistent with the City's requirement to provide short-term parking (intended for customers) equivalent to 5 percent of the required parking, and long-term parking (intended for employees) equivalent to 10 percent of the required parking). Short-term bicycle parking would be provided in bike racks throughout the shopping center. Long-term bicycle parking for employees would be provided in a secure storage area behind the main plaza, adjacent to restroom and shower facilities for employees.

e. Infrastructure and Utilities. As described more fully above, the project site is currently developed with approximately 619,000 square feet of office uses and related improvements. These existing uses are currently connected to wet and dry utilities with to serve the proposed commercial shopping center. The proposed shopping center is a generally assumed to be a less intensive use than the existing office use, and no significant upgrades or changes to off-site utilities infrastructure are anticipated.

The following is additional information regarding existing and proposed on-site utility improvements:

- **Water.** Potable water service to the project site is currently provided by the Contra Costa Water District (CCWD). The existing office buildings are currently served by 1- to 4-inch water lines (domestic) and 1- to 1½-inch service lines. Reclaimed water service provides landscape irrigation water to the site via a main line in Diamond Boulevard. No new or expanded off-site water transmission or distribution facilities are planned, as the existing capacities, pressures, and fire flows are adequate to serve the project. On-site potable and reclaimed water lines and other water improvements would be removed and replaced with new water infrastructure that is sized to serve the project and upgraded, as needed, to reflect current City and other applicable requirements and standards. Project landscaping would be irrigated using reclaimed water.
- **Wastewater.** Wastewater service to the project site is currently provided by the Central Contra Costa Sanitary District (CCCSD). The existing office buildings are presently served by an 8-inch sanitary sewer lateral, connecting to a 12-inch sanitary sewer main in Diamond Boulevard. No new or expanded off-site wastewater conveyance or treatment facilities are planned, as the existing capacities are adequate to serve the project. On-site wastewater lines and other wastewater improvements would be removed and replaced with new wastewater infrastructure that is sized to serve the project and upgraded, as needed, to reflect current City and other applicable requirements and standards.
- **Stormwater.** Stormwater drainage and collection services to the project site are currently provided by the City. Currently stormwater runoff from much of the project site is discharged through storm drains at the northwest corner of the site, and runoff from smaller portions of the project site is discharged to a box culvert beneath Diamond Boulevard. The preliminary designs for the project include installing twin 24-inch storm drain pipes in Galaxy Way to connect to the

existing box culvert in Diamond Boulevard. Storm water from the eastern portion of the site near Diamond Boulevard would be pumped to the north and drain to Galaxy Way where the new twin 24-inch storm drain pipes are proposed. The south and west sides of the site would continue to drain to the existing twin 24-inch storm drain pipes at the northwest corner of the site discharging to the storm drain along the north side of I-680. No new or expanded off-site storm drainage facilities are planned, as the existing capacities are adequate to serve the project. However, it is anticipated that the existing on-site lines would be removed and replaced with new storm drainage infrastructure that is sized to serve the project and upgraded, as needed, to reflect applicable requirements and standards. Parking lots would include permeable paving and biotreatment planters to capture and treat stormwater runoff.

- **Gas, Electricity, and Telecommunications.** The existing on-site uses are served by Pacific Gas & Electric (PG&E) for gas and electrical uses, AT&T for telecommunications, and Comcast/Astound for cable providers. No new or expanded off-site dry utility improvements are planned, as the existing capacities are sufficient to serve the project. However, it is anticipated that existing dry utilities would be removed and replaced with new dry utility infrastructure that is sized to serve the project and upgraded, as needed, to reflect current City, PG&E, and other applicable requirements and standards.
- **Wireless Telecommunications Facility.** An entity separate from the Applicant currently operates an existing wireless telecommunications facility on the roof of one of the existing office buildings. The wireless facility would either be relocated to another permanent location, such as the rooftop of another building in the vicinity, or it would be integrated into the design of the new shopping center facility in accordance with applicable City and other requirements and standards and subject to a mutually acceptable agreement between the wireless operator and the respective property owner. If another permanent site for the facility has not been secured prior to demolition of the existing buildings, a temporary wireless facility would operate at the project site under a temporary permit from the City pursuant to applicable City requirements.

f. Energy Use and Conservation. The proposed project would be required to comply with all applicable updated Title 24 standards for building construction including exterior lighting requirements. Among other features, these may include, for example, requirements for indoor lighting efficiency, skylights in stores with controls to shut off lights when daylight is available, cool roof coating requirements, duct insulation, and efficient space conditioning. The project would include various conservation features in compliance with all applicable updated Title 24 standards, which may include, for example, the following energy conservation features: cool roof; high efficient windows; high efficiency domestic water heaters; LED lights; day light sensors that dim lighting when natural light is available; sky lights to bring in natural light; all interior and exterior lights shut off 100 percent after hours (except for emergency lighting); occupancy sensors in offices, storage and bathrooms; HVAC systems have alarms that notify operations staff if economizer is faulty; and thermostats would be programmed and locked and would not deliver conditioned air after hours.

g. Security and Safety. The following security features are anticipated to be incorporated into the project:

- Private security staff would monitor and patrol the shopping center 24/7;

- Facilities would be monitored by a security service through a central station that would be able to dispatch additional security personnel or City police to the site as necessary;
- A private on-site security vehicle would patrol the shopping center; and
- Security lighting would be provided in parking lots, exterior building areas, and within building interiors.

3. Project Approvals

a. City of Concord. All uses contemplated for the proposed project are permitted or conditionally permitted by the City's existing General Plan and zoning designations; thus, no General Plan amendment or rezoning would be required to permit the proposed project. However, the project would require a number of other discretionary and ministerial approvals from the City including:

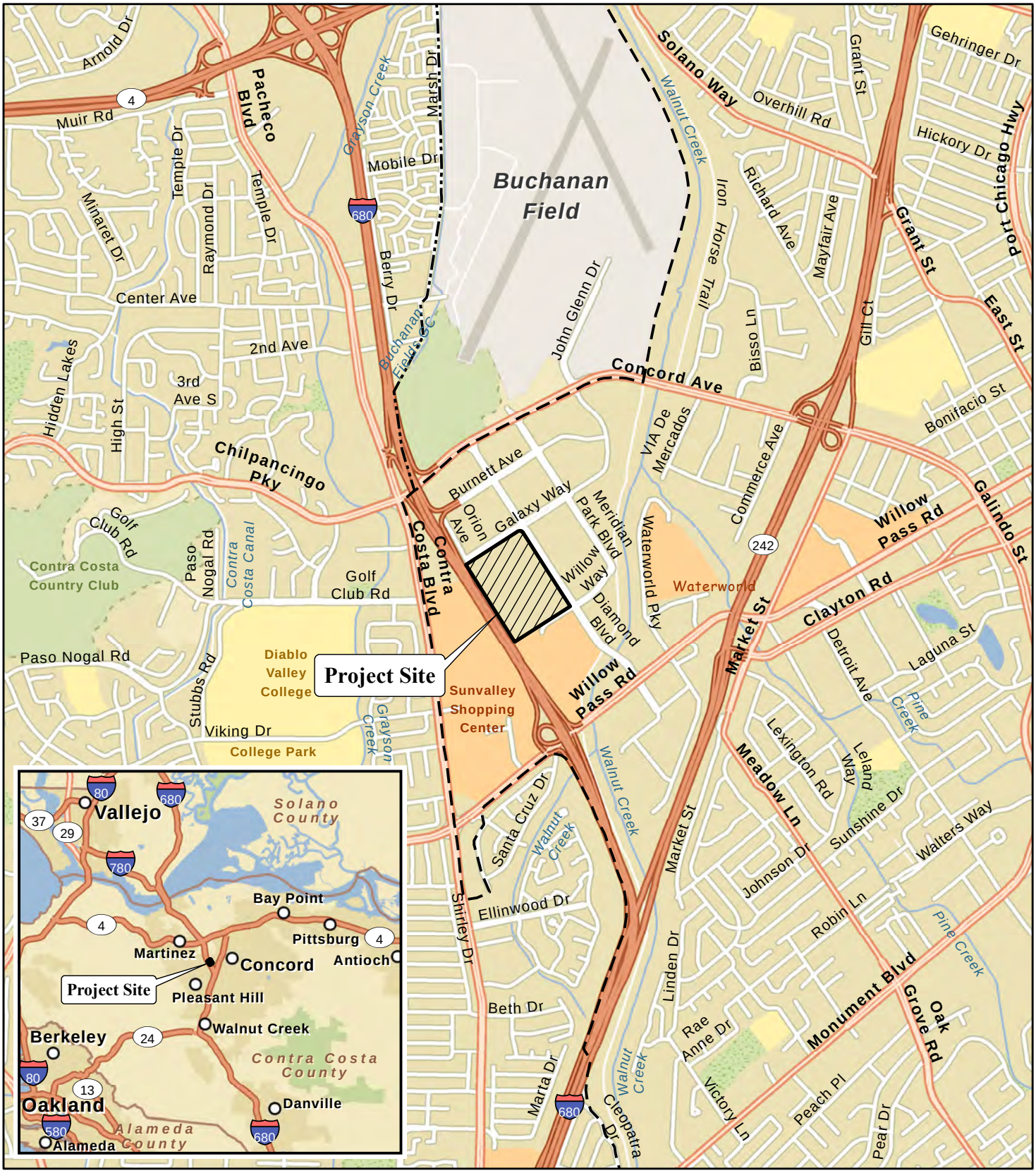
- **Use permits.** A variety of use permits may be required depending on the mix of uses that the project would ultimately entail (e.g., a movie theater, a drive-through restaurant, bank with a drive-through feature, sales of alcoholic beverages, and wireless facility).
- **Design and site review.** The project would be subject to design and site review.
- **Tree removal permit.** The project would entail the removal and replacement of a number of protected trees from the project site, requiring the issuance of a tree removal permit.
- **Master sign program.** Signage for the project would be subject to review and approval by the Planning Division pursuant to a master sign program.
- **Text amendment to Concord Municipal Code.** The project includes proposed text amendments to Concord Municipal Code Section 18.180 to permit the proposed freeway-oriented signage pursuant to a master sign program and use permit process.
- **Demolition, grading, and building permits.** In addition to the above discretionary permits, ministerial demolition, grading, and building permits would need to be issued by the City's Building Division following review and approval of the detailed demolition, grading, and building construction plans.
- **Encroachment permits from the Department of Public Works.** In addition to the above discretionary permits, ministerial encroachment permits for work conducted within the City's right-of-way would be needed to be issued by the City's Public Works Department.

b. Other Required Approvals and Permits

The following agencies that may require permits for one or more components of the proposed project include:

- **Bay Area Air Quality Management District –** Air Quality permit for demolition.
- **Contra Costa County Airport Land Use Commission –** Review and determination of consistency with the Contra Costa Airport Land Use Compatibility Plan.
- **Contra Costa County Fire Protection District –** Review and determination of consistency with all applicable fire codes.

- **Contra Costa Water District –** Review and determination of water meter and backflow device requirements.
- **Caltrans –** Outdoor Advertising Permit.



LSA

LEGEND

- Project Site
- Concord City Limit
- Concord Sphere of Influence

0 1000 2000
FEET

SOURCE: ESRI StreetMap North America (2012).

I:\CYR1502\GIS\Maps\EIR\Figure 3-1_Project Location and Regional Vicinity.mxd (2/18/2016)

FIGURE 3-1

The Veranda Shopping Center

Project Location and Regional Vicinity Map

LSA

FIGURE 3-2

LEGEND

Project Site

(1) Building Number

N

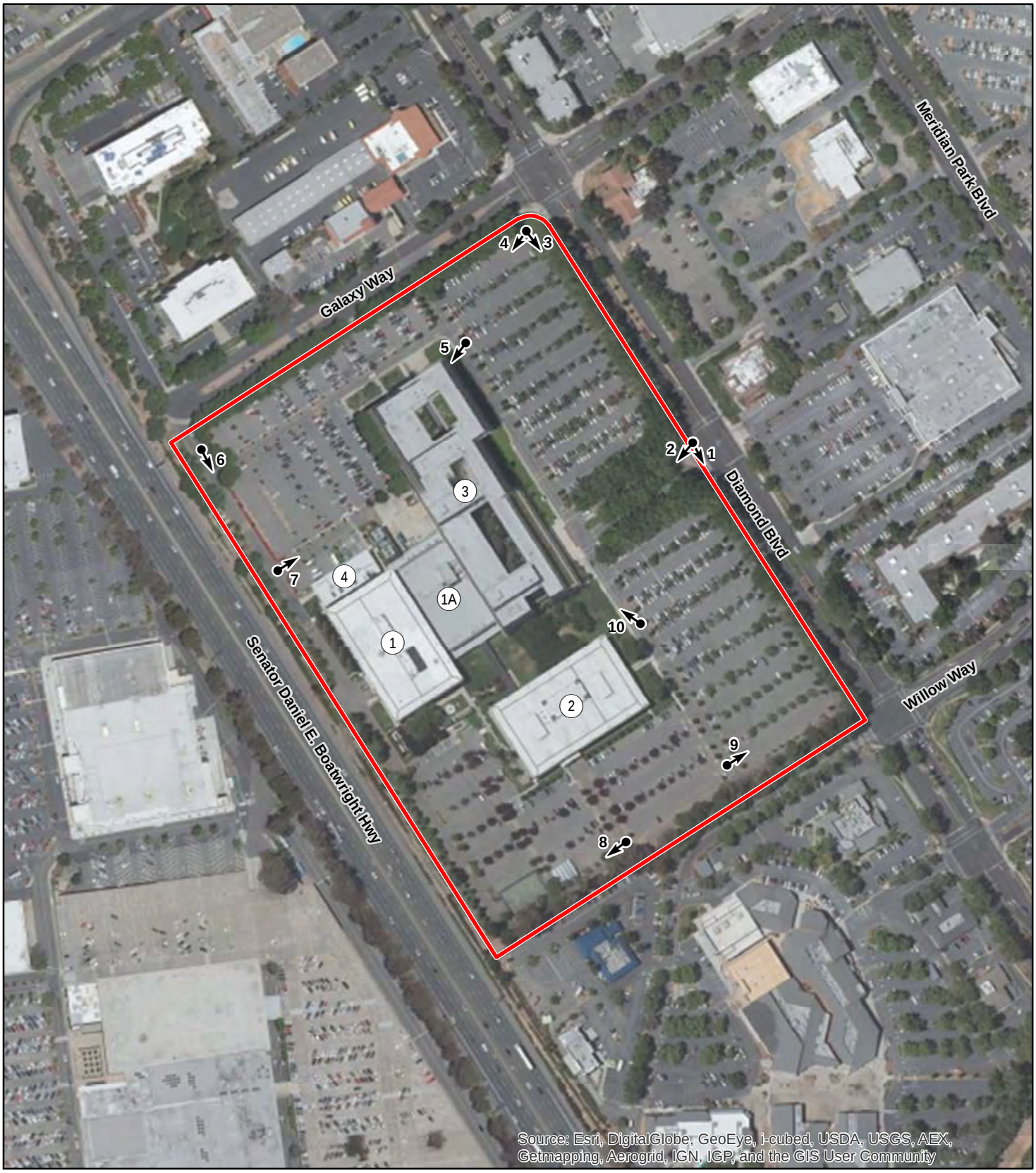
0 250 500
FEET

The Veranda Shopping Center

Aerial Photo

SOURCE: Esri World Imagery (2014).

I:\CYR1502\GIS\Maps\EIR\Figure 3-2_Aerial Photo.mxd (2/18/2016)



LSA

FIGURE 3-3a

LEGEND

Project Site

1 Photo Number and Direction

(1) Building Number

N

0 150 300
FEET

The Veranda Shopping Center

Site Photos - Photo Location Map

SOURCE: Esri Imagery Service (6/12/2014).

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Photo 1, View of main site entrance at Diamond Boulevard, looking southeast

Photo 2, View from main entrance driveway looking southwest

LSA

FIGURE 3-3b

The Veranda Shopping Center

Site Photos

Photo 3, View of street trees along Diamond Boulevard, looking southeast

Photo 4, View southwest from northeast corner of site

LSA

FIGURE 3-3c

The Veranda Shopping Center

Site Photos

Photo 5, View of north building elevation, looking southwest

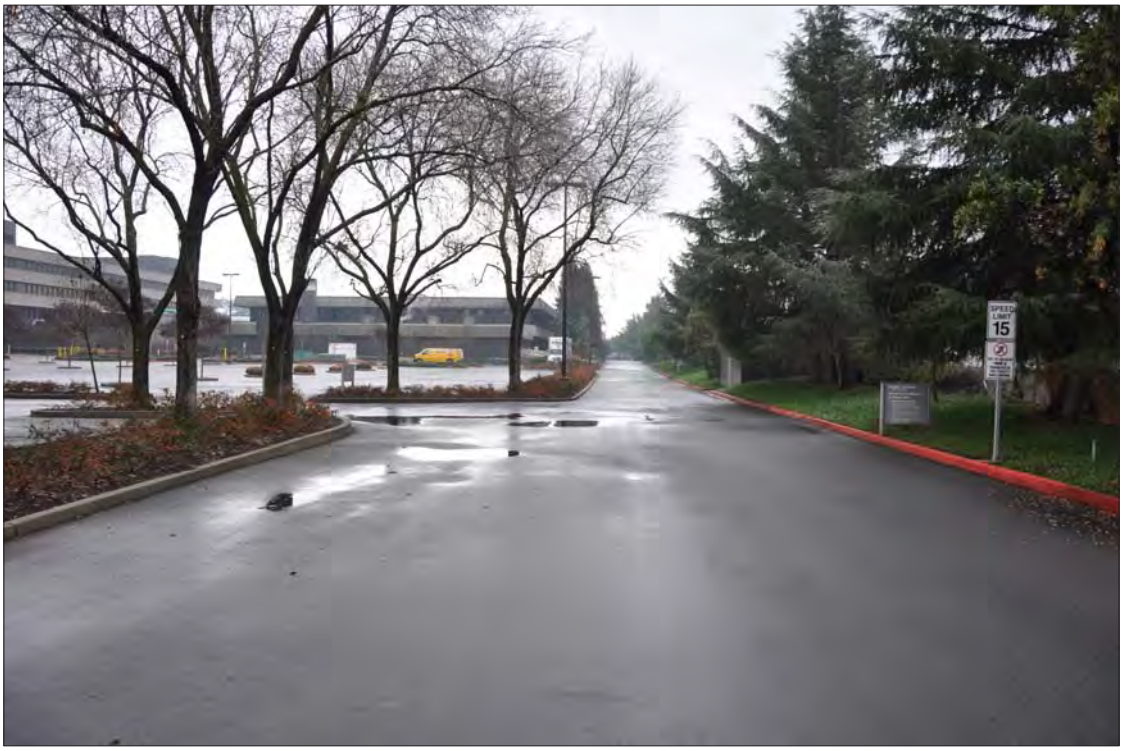

Photo 6, View along rear access road between project site and I-680 freeway, looking southeast

LSA

FIGURE 3-3d

The Veranda Shopping Center

Site Photos

Photo 7, View of rear of buildings, looking northeast

Photo 8, View along southeastern property line looking toward southwest corner of the site

LSA

FIGURE 3-3e

The Veranda Shopping Center

Site Photos

Photo 9, View along southeastern property line, looking toward southeast corner of the site

Photo 10, View of central landscaped courtyard looking northwest

LSA

FIGURE 3-3f

The Veranda Shopping Center

Site Photos

LSA

FIGURE 3-4

N

0 100 200
FEET

SOURCE: Architects Orange (2/11/2016)

The Veranda Shopping Center

Site Plan

P:\CYR1502\g\EIR\Figure 3-4_Site Plan.cdr (2/17/2016)

LSA

FIGURE 3-5a

The Veranda Shopping Center

Building Elevations – Main Entrance, Diamond Boulevard

SOURCE: Architects Orange (2/11/2016)

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LSA

FIGURE 3-5b

The Veranda Shopping Center

Building Elevations – Street View, Southeast Corner

SOURCE: Architects Orange (2/11/2016)

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LSA

FIGURE 3-5c

The Veranda Shopping Center

Building Elevations – Street View, Northeast Corner

SOURCE: Architects Orange (2/11/2016)

P:\CYR1502\g\EIR\Figure 3-5c_Building Elevations – Street View, Northeast Corner.cdr (2/18/2016)

LSA

FIGURE 3-5d

The Veranda Shopping Center

Building Elevations – Plaza Bird's Eye View

SOURCE: Architects Orange (2/11/2016)

P:\CYR1502\g\EIR\Figure 3-5d_Building Elevations – Plaza Bird's Eye View.cdr (2/18/2016)

LSA

FIGURE 3-5e

The Veranda Shopping Center

Building Elevations – Freeway View, Northbound I-680

SOURCE: Architects Orange (2/18/2016)

P:\CYR1502\g\EIR\Figure 3-5e_Building Elevations – Freeway View, Northbound I-680.cdr (2/18/2016)

LSA

SITE MONUMENT SIGNAGE
- A1 Primary Project Entry Monument
- A2 Entry Column with Tenant
- A3 Tenant Pylon
- A4 Highway Pylon
- A5 Wall Identity

VEHICULAR SIGNAGE
- C1 Vehicular Directional

FIGURE 3-6a

N

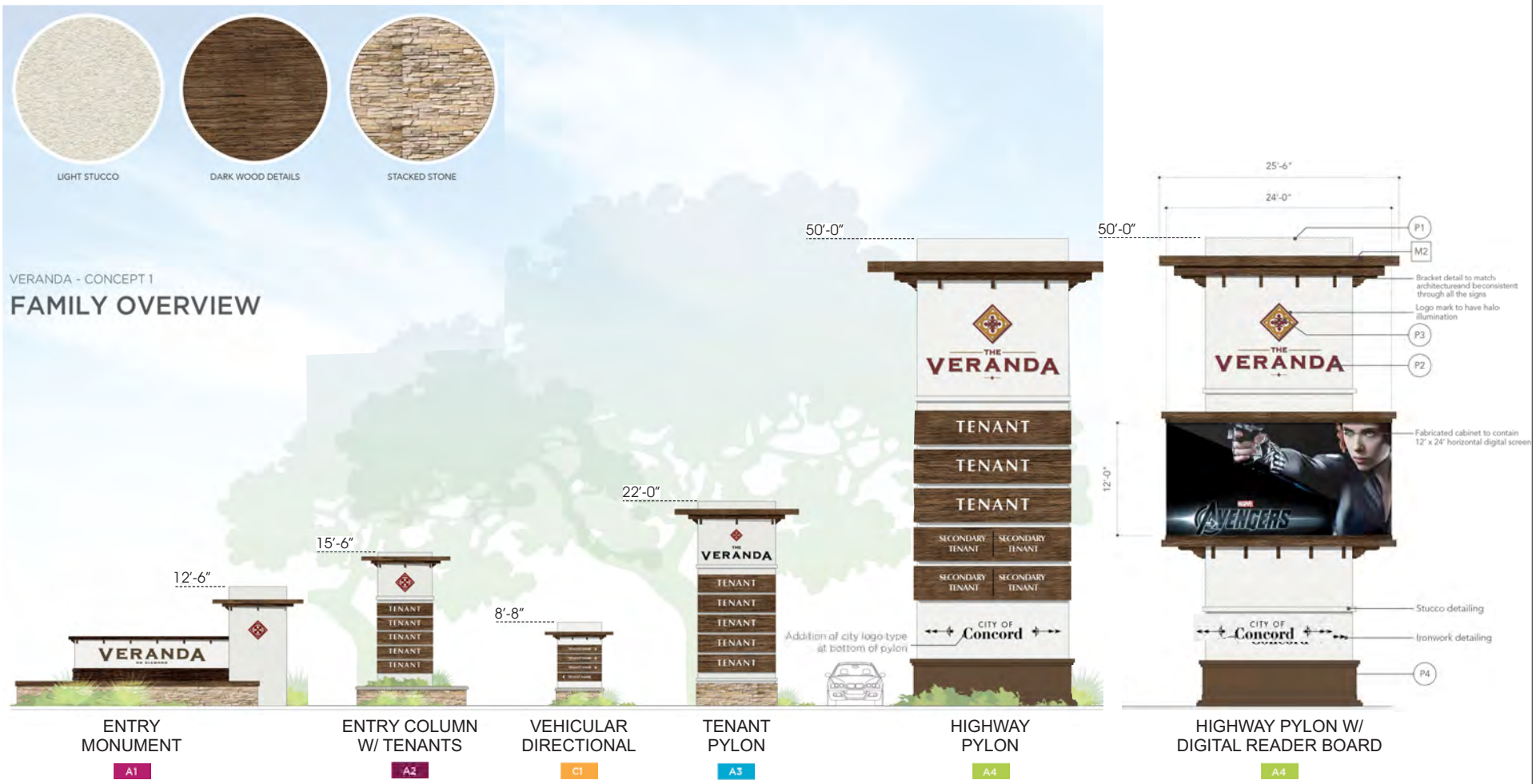
0 90 180
FEET

SOURCE: rsmdesign

The Veranda Shopping Center

Sign Program - Sign Locations

P:\CYR1502\g\EIR\Figure 3-6a_Sign Program - Sign Locations.cdr (5/2/2016)



LSA

FIGURE 3-6b

0 1/32 1/16
INCHES

SOURCE: rsmdesign

The Veranda Shopping Center

Sign Program - Sign Types

P:\CYR1502\g\EIR\Figure 3-6b_Sign Program - Sign Types.cdr (5/2/2016)

LSA

FIGURE 3-6c

The Veranda Shopping Center

Sign Program - Freeway Oriented Signs

SOURCE: Architects Orange (2/11/2016)

P:\CYR1502\g\EIR\Figure 3-6c_Sign Program - Freeway Oriented Signs.cdr (3/24/2016)

4.0 SETTING, IMPACTS, AND MITIGATION MEASURES

This chapter contains an analysis of each potentially significant environmental issue that has been identified in the Notice of Preparation (NOP) prepared for The Veranda Shopping Center project (proposed project or project) and, as such, constitutes the major portion of the Draft EIR. Sections A through L of this chapter describe the environmental setting of the proposed project site (and vicinity as appropriate) as it relates to each specific issue. The impacts resulting from implementation of the proposed project and feasible mitigation measures that would reduce identified significant impacts, if necessary, are also presented in each of the sections.

DETERMINATION OF SIGNIFICANCE

Under CEQA, a significant effect is defined as a substantial, or potentially substantial, adverse change in the environment.[1] The CEQA Guidelines direct that this determination be based on scientific and factual data. Each topical section of this chapter is prefaced by a summary of criteria of significance. These criteria have been developed in a cooperative process with City and LSA staff using the CEQA Guidelines and applicable City policies (to the extent appropriate), such as the City of Concord General Plan, and any applicable regional, State or federal regulations or policies.

1. Issues Addressed in the Draft EIR

The following environmental issues are addressed in this chapter:

A. Aesthetics
B. Air Quality
C. Biological Resources
D. Cultural and Paleontological Resources
E. Geology, Soils, and Seismicity
F. Greenhouse Gas Emissions
G. Hazards and Hazardous Materials
H. Hydrology and Water Quality
I. Land Use and Planning Policy
J. Noise
K. Public Services and Utilities
L. Transportation and Circulation
M. Economic Impact Analysis (including an environmental evaluation of the CEQA topic of "urban decay")

[1] Public Resources Code 21068.

Preliminary analysis determined that the proposed project would not result in significant impacts to agricultural and forestry resources; mineral resources; population and housing, or recreation (see Initial Study [Appendix B] and Chapter 1.0, Introduction). Consequently, these issues are not examined in this chapter of the EIR.

2. Format of Issue Sections

Each environmental topic considered in Chapter 4.0 is comprised of two primary sections: 1) Setting; and 2) Impacts and Mitigation Measures. An overview of the general organization and the information provided in the two sections is provided below.

a. Setting. The Setting section for each environmental topic generally provides a description of the applicable physical setting for the proposed project and its surroundings (e.g., existing land uses, existing soil conditions, existing traffic conditions). Each section begins by describing the regional context of the City of Concord and then provides more specific information about the project site and vicinity, as appropriate. An overview of regulatory considerations (local, regional, State, and federal) that are applicable to the specific environmental topic is also provided.

According to CEQA Guidelines Section 15125(a), the environmental setting consists of "the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published…" At the time the Notice of Preparation (NOP) for the project was published (January 27, 2016), the project site was developed with existing office buildings, parking lots, landscaping, and related improvements, although the office uses were not fully occupied. Based on information provided to the Applicant from Chevron Corporation, at full occupancy, the office buildings at the project site housed over 2,500 employees, and approximately 400 Chevron employees worked at the site in January 2016. The office buildings were fully vacated in April 2016.

Approximately 795 trees were located on the site at the commencement of environmental review in January 2016. However, in late January 2016, the Applicant removed approximately 93 trees located along the freeway frontage, including 3 protected trees. Therefore, a total of 702 trees now exist on the project site, including 58 protected trees. For the purposes of a conservative analysis, this Draft EIR considers the number of trees existing at the project site at the commencement of the environmental analysis, 795 (including 61 protected trees).

For purposes of a conservative analysis, this EIR assumes that the existing improvements and conditions in place when the NOP was published constitute the environmental setting for the environmental analysis, including the occupancy of the buildings by approximately 400 employees. In accordance with CEQA Guidelines Section 15125(a), these on-site conditions represent the "baseline" against which project impacts are measured in this EIR, as described more fully in each section analyzing a specific environmental topic area.

b. Impacts and Mitigation Measures. The Impacts 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 identifies impacts related to implementation of the proposed project and mitigation measures, if required. The impacts of the proposed project are delineated into separate categories according to the significance criteria: less-than-significant impacts, which do not require mitigation measures, and significant impacts, which do

require mitigation measures. Each environmental topic section also includes a discussion of cumulative impacts as it relates to that topic.

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:

AES:	Aesthetics
AIR:	Air Quality
BIO:	Biological Resources
CULT:	Cultural and Paleontological Resources
GEO:	Geology, Soils, and Seismicity
GHG:	Greenhouse Gas Emissions
HAZ:	Hazards and Hazardous Materials
HYD:	Hydrology and Water Quality
LU:	Land Use and Policy Planning
NOISE:	Noise
PUB:	Public Services and Utilities
TRANS:	Transportation and Circulation
ECON:	Economic Impact Analysis

Impacts are also categorized by type of impact as follows: Less-than-Significant (LTS); Significant (S); and Significant and Unavoidable (SU). These notations are provided following each impact and each mitigation measure to identify their significance before and after mitigation.

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A. AESTHETICS

This section assesses the project's potential environmental impacts on aesthetic resources. Information in this section is used to evaluate the potential impacts of the project with respect to the significance criteria set forth in the Impacts and Mitigation Measures section.

1. Setting

This subsection describes the existing visual and aesthetics resources on the project site and in the surrounding area. Photographs of the project site and visual simulations using conceptual architectural elevations are included in this section for describing the existing setting and developing an informed assessment and analysis of the potential impacts of the project on visual and aesthetic resources.

a. Regional Visual Character. The project site is located in the City of Concord, within Contra Costa County. The City is located within two flat river valleys, the Ygnacio Valley and Clayton Valley, which are separated by Lime Ridge. The City is bordered by the Los Medanos Hills to the east, Mt. Diablo foothills to the southeast, Walnut Creek to the southwest, and the Suisun Bay to the north. The Los Medanos Hills range in peak elevation from 800 to 1,400 feet, and the foothills surrounding Mt. Diablo range in peak elevation from 1,200 to 1,700 feet. In flatland areas of the City, views of the surrounding hills are prominent. Mt. Diablo is visible from many locations throughout the City, while the Suisun Bay is only visible from some areas of higher elevation in the northern portion of the City. The City is traversed by several creek corridors with dense vegetation and mature trees. No State designated scenic highways are located in the City.

b. Neighborhood Visual Character. The 30-acre project site lies within the western portion of the City. The project site is bounded by Diamond Boulevard to the northeast, Galaxy Way to the northwest, I-680 to the southwest, and Willow Way and the Willows Shopping Center to the southeast. Figure 4.A-1 is an aerial view of the project site and the immediate surroundings. The visual character surrounding the project site is representative of a developed urban area containing a mix of commercial and office uses including office and government services, retail, hotel, education, restaurant, and automobile sales and repair. In the vicinity of the project site, the Buchanan Field Airport and Buchanan Field Golf Course are located to the north, the Iron Horse Regional Trail and Walnut Creek drainage channel are located to the east behind the Hilton Hotel and Home Depot properties, the Sunvalley Shopping Center and Diablo Valley College are located to the west and south, and the Willows Shopping Center is located immediately south of the project site. The closest residential neighborhood to the project site is located approximately 0.25 mile southwest, west of Contra Costa Boulevard (across the I-680 freeway). Buildings within the project vicinity vary in height from one to 11 stories and are varied in architecture and colors, with no distinguishable or consistent architectural theme.

c. Project Site Visual Character. The site is relatively flat, with the exception of landscaped berms around the site perimeter and landscaped areas around the buildings. The site elevation is approximately 26 feet above mean sea level (amsl), and the buildings are constructed on or surrounded by an approximately 4-foot-high pad. The project site is developed with four existing office buildings, surface parking lots, landscaping, and other associated improvements. The four existing office buildings range from one to four stories in height and consist of glass and concrete facades with a contemporary but dated architectural style. The four buildings have a total area of approximately 619,000 square feet (sf) and are located in the center of the project site. Surface

parking lots with a total of approximately 1,690 parking spaces surround the buildings. The location of the buildings in the center of the project site sets them back from the views of passing motorists and pedestrians on adjacent roadways. Landscaped courtyards are located adjacent to the buildings. Mature ornamental trees are planted in landscape strips around the perimeter of the project site and along the main entrance on Diamond Boulevard. Trees and landscaping are also planted adjacent to the on-site buildings and within the parking areas. These perimeter trees, when combined with the trees on the interior of the project site, shield views of the existing buildings and interior of the property from passing motorists and pedestrians along adjacent roadways.[1]

d. Views from the Project Site. Views from sidewalks surrounding the project site and from the interior surface parking lots are limited due to the existing developments that surround the site on all sides. Views of the surrounding hills from the ground level are largely limited due to street trees, parked cars, traffic, and existing structures, as well as the distance from the project site.

e. Views of the Project Site. Views of the project site from the surrounding area are generally limited due to existing development surrounding the project site. Other than from adjacent roadways, direct open views of the site are generally unavailable. Photographs were taken to analyze the various existing views of the project site that would be potentially affected by the project. The analysis section describes the existing views of the project site from six viewpoints. A photograph location map (Figures 4.A-1 and 4.A-2) indicates the location of each viewpoint, and photos of the existing views are provided in Figures 4.A-3 to 4.A-8.

f. Existing Lighting and Glare. The project site is located in an urban area with a nighttime ambient light environment consisting of artificial lighting. Lighting sources on the project site and in the surrounding area include interior and exterior building lighting, security/courtesy lighting for parking areas, vehicle headlights, and street lighting. Daytime sources of glare on the project site and in the surrounding area include reflections from light-colored surfaces, windows, and metal details on cars traveling on nearby roadways. The nearest light-sensitive land uses are residential uses located approximately 0.25 mile southwest of the project site, west of Contra Costa Boulevard and across the I-680 freeway.

g. Regulatory Framework. The following section summarizes the applicable regulatory framework related to aesthetics, including State and local plans, policies, and standards.

(1) State

State Scenic Highways. The California Streets and Highways Code Sections 260–284 establishes the State Scenic Highway Program, with the goal of preserving and enhancing the natural beauty of California along designated highway segments. The program, managed by the Caltrans Landscape Architecture Program, identifies both Eligible and Officially Designated State Scenic Highways. In the development of official scenic highways, Caltrans is to give special attention both to the impact of the highway on the landscape and to the highway's visual appearance. The standards for

[1] In late January 2016, approximately 93 trees located at the rear of the site along the freeway frontage were removed, including 3 protected trees. Therefore, a total of 702 trees now exist on the project site, including 58 protected trees. For the purpose of a conservative analysis, this Draft EIR considers the number of trees existing at the project site at the commencement of the environmental analysis, 795 trees (including 61 protected trees).

official scenic highways also require that local governmental agencies have taken such action as may be necessary to protect the scenic appearance of the scenic corridor, the band of land generally adjacent to the highway right-of-way, including, but not limited to, (1) regulation of land use and intensity (density) of development; (2) detailed land and site planning; (3) control of outdoor advertising; (4) careful attention to and control of earthmoving and landscaping; and (5) the design and appearance of structures and equipment.[2]

Outdoor Advertising Act. The State Outdoor Advertising Act, Business and Professions Code Section 5200 et seq., regulates outdoor advertising adjacent to State highways. Caltrans requires the review of an Outdoor Advertising Permit for outdoor advertising adjacent to State highways for compliance with the requirements of the Act, which limits the content, the placement and size of outdoor advertising signs such as billboards. Off-premise outdoor advertising is prohibited adjacent to designated Landscaped Freeway segments. However, Section 5442(c) exempts the advertising of "goods manufactured or produced, or services rendered, on the property upon which the advertising display is placed."

(2) Local

General Plan Policies. Concord General Plan policies related to visual and aesthetic resources are listed and discussed in Table 4.I-1 in Section 4.I, Land Use and Planning Policy.

City of Concord Community Design Guidelines. The City of Concord Community Design Guidelines was established by the City to aid in the process of planning new development to ensure consistency with the character of the City. The City of Concord Community Design Guidelines are flexible and are the City's recommended desirable design principles for projects in the City.

Downtown Concord Specific Plan. The Concord Downtown Specific Plan (Specific Plan) was adopted in 2014 and provides a comprehensive plan for both short and long-term strategies to revitalize the Downtown area to accommodate future growth and employment combined with a transportation and urban design vision for the future. The Specific Plan includes design guidelines for the Downtown area. The project is outside of the Downtown area and thus not subject to the Specific Plan's design guidelines.

Concord Municipal Code. Title 18, Development Code, of the Concord Municipal Code includes development standards as well as design guidelines for development projects within the City. The project site is within the Downtown District and is zoned West Concord Mixed Use (WMX). The WMX district allows new shopping centers as an allowable use, subject to the issuance of conditional use permits for certain specified uses. The Development Code includes development standards for height, setbacks, signage, landscaping, lighting, and grading.

2. Impacts and Mitigation Measures

The following section presents a discussion of the impacts related to aesthetics that could result from implementation of the project. The section begins with the criteria of significance and establishes the thresholds to determine if an impact is significant. The latter part of this section presents the impacts

[2] California Streets and Highways Code Section 261.

associated with implementation of the proposed project and the recommended feasible mitigation measures, if required.

a. Criteria of Significance. Pursuant to CEQA Guidelines Appendix G, Environmental Checklist Form, the project would have a significant visual and aesthetic impact if it would:

- Have a substantial adverse effect on a scenic vista.
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State 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 that would adversely affect day or nighttime views in the area.

b. Less-than-Significant Impacts. The following less-than-significant impacts associated with the project have been identified.

(1) Scenic Vistas and Scenic Resources. As stated in the Initial Study (Appendix B), the project would not result in a substantial adverse effect on a scenic vista because there are no scenic vistas within the vicinity of the project site. In addition, the project involves the redevelopment of a previously developed site located in a fully developed and urbanized area. The project site does not contain any historic buildings or rock outcroppings, so there would be no impact to these scenic resources as a result of implementation of the project. Views from the project site and its vicinity are limited due to the relatively flat topography and the trees and buildings in the area. The project would not substantially damage any scenic resources within a State-designated Scenic Highway because there are no officially designated State Scenic Highways in the project vicinity. The portion of I-680 adjacent to the project site (north of Walnut Creek within the City limits) is not identified as an Eligible or Officially Designated State Scenic Highway, and no Eligible or Officially Designated State Scenic highways are located in City. The nearest State-designated Scenic Highway segments are I-680 south of SR-24, and SR-24 west of I-680. Therefore, because no State-designated Scenic Highways are located within the vicinity of the project site, implementation of the project would not result in an impact to scenic resources within a State Scenic Highway, and no mitigation is required.

(2) Visual Character. The project's effect on the visual character of the site and vicinity is evaluated below. The project would demolish the existing office buildings, parking lots, trees, landscaping, and utilities, and construct a shopping center with a maximum floor area up to 375,000 sf, with up to 1,500 parking spaces, and associated landscaping, utilities, and related improvements. Freeway-oriented signage, including wall signs and highway pylon signs with digital reader boards, is also proposed, subject to approval of a sign ordinance amendment, master sign program and related use permit. The sign ordinance amendment would also allow freeway-oriented signage elsewhere within the City under limited circumstances (i.e., related to location, sizing and other requirements) subject to the identified criteria specified in the amendment.

Temporary Impacts (Construction). Construction activities often contrast with and disrupt the general order and existing aesthetic character of a given location or area; however, such impacts are considered temporary and no longer exist upon completion of construction and the maturation of landscaping at a project site. The total duration of the combined construction phases (demolition,

excavation, building construction, and landscaping, etc.) of the project is anticipated to take a total of approximately 12 to 18 months. Trees planted as part of project landscaping would take several years to mature. Although temporary in nature and common for most construction sites, construction activities associated with the project could have the potential to give the project site a visually unappealing quality during certain phases of the construction. On-site demolition, excavation, and construction activities would be visible to adjacent land uses, particularly travelers along adjacent roadways. Temporary fencing with a dark green screen fabric would be placed along the perimeter of the site to screen demolition and construction activities from the street level. As a result, views of most demolition and construction activities would be largely blocked by perimeter fencing. Construction of the project would require the removal of 795[3] trees located along the perimeter and within the interior of the project site. The effects of tree removal would create a recognizable change in the appearance of the project site as the street trees are a prominent visual feature of the site as viewed from adjacent streets. This change in views of the site would not be out of character with the existing urban landscape surrounding the site and would be temporary. Therefore, since impacts during construction activities would be temporary and would cease upon completion of construction, the project would not substantially alter the character of views currently experienced by off-site viewers. For these reasons, construction activities would not substantially degrade the existing visual character and quality of the site and its surroundings, and no mitigation is required.

Permanent Impacts (Operation). The project site is located in a developed and urbanized area of the City consisting of a mix of commercial (including retail) and office uses. No distinguishable or consistent architectural style exists within the project vicinity. Currently, the project site is developed with four existing office buildings up to four stories high located in the center of the site, surface parking lots surrounding the buildings, and ornamental mature trees located around the perimeter and within the interior of the site. Other than a small monument sign at the main entrance driveway, no commercial signage currently exists at the site. The existing trees and landscape berms bordering the perimeter of the project site, and trees in the parking lots partially obscure views of the existing on-site buildings from motorists and pedestrians passing the site on adjacent roadways (refer to Figures 4.A-3 through 4.A-8 for photographs of the site from the adjacent streets).

Conceptual elevations of the project are depicted on Figures 3-5a–5e in Chapter 3.0, Project Description, and identify the intended architectural style and aesthetic quality for the proposed structures. While the final design of the structures may be further refined as part of the development process in accordance with standard City procedures, the orientation of structures is not expected to change, and thus the renderings provided in this EIR are sufficient to assess the effect the project would have on the visual character and quality of the site and its surroundings. The proposed architectural style of the buildings would be a contemporary Spanish/Santa Barbara style including open arcades and verandas. The exterior colors of the proposed structures would be based in the earth tone family, including light grays, natural wood colors, whites, off-whites, and tans. In addition, the project would include a variety of pedestrian-friendly visual enhancements, including windows, courtyards, plazas, and pathways, designed to enliven the site with minimal visual clutter. The proposed buildings would generally be one story and 30 to 40 feet in height. A variety of architectural

[3] Ninety-three trees were removed in late January 2016; therefore, 702 additional trees would be removed when demolition and site clearance activities commence.

elements are proposed to be incorporated into the building design such as towers and parapet walls, resulting in a maximum height of 60 feet.

As discussed above, the project would require the removal of 795[4] trees located along the perimeter and within the interior of the project site. The effects of tree removal would create a recognizable change in the appearance of the project site, because the street trees are a prominent visual feature of the site as viewed from adjacent streets.

Consistent with the City's development standards, approximately 20 percent of the site would be landscaped with trees, shrubs, groundcover, decorative hardscape, and open space amenities. Approximately 700 new trees would be planted on the site, consistent with Development Code requirements. The conceptual landscape plans call for the new trees to be large specimen-size trees (36-inch, 48-inch, or larger box size), which would accelerate the transition to mature landscaping on the site. New trees can grow substantially within several years and would eventually become a prominent visual feature of the site. Parking lots with trees and landscaped planters would occupy the center of the site and would provide shading of parking areas. Trees would be planted along the southwest border of the site and would provide landscape buffering of the project site from passing motorists along I-680, although this landscaping would be maintained to permit visibility of the signage. Overall, the architectural features and landscaping for the project are intended to provide a visually appealing commercial shopping center that is attractive to customers, as well as to pedestrians and motorists in the project vicinity.

The project includes a master sign program that describes the location and type of signage proposed throughout the shopping center for on-site tenants as well as identification signage for the shopping center. The location and type of the shopping center's identification and directional signage are exhibited in Figures 3-6a to 3-6c. Representative tenant signage is shown on the building elevations, Figures 3-5a to 3-5e. The master sign program includes a variety of monument signs at different scales that reflect their location, at the perimeter or interior of the site, and purpose (advertising or directional).

- **Visual Simulations – Existing versus Proposed Visual Character.** The following section describes the existing views of the project site and the corresponding visual simulations that were created for purposes of this EIR using Google street view photographs of the existing site conditions. The visual simulations highlight the proposed building designs, and landscaping is rendered as partially transparent and immature. Also, street improvements that may be required adjacent to the project site, such as turn lanes or median changes, are not depicted in the simulations. Therefore, the simulations should not be considered entirely accurate photorealistic simulations representative of future conditions with the project, but rather as an appropriately realistic representation of the project's aesthetic features. Figure 4.A-1 is an aerial photograph of the project site in the existing condition, while Figure 4.A-2 is an aerial photograph of the project site overlaid by the proposed shopping center site plan. Both figures show the locations of the photo viewpoints.

[4] Ninety-three trees were removed in late January 2016; therefore, 702 additional trees would be removed when demolition and site clearance activities commence.

Viewpoint 1: View from Diamond Boulevard and Willow Way Entrance

Existing Condition: Viewpoint 1 (Figure 4.A-3) depicts the project site facing southwest at the intersection of Diamond Boulevard and Willow Way. This vantage point was selected because it represents the view of the project site for motorists traveling southwest on Willow Way toward the existing Willows Shopping Center driveway, located across Willow Way from the project site. As shown, mature ornamental trees border Willow Way along the southeastern side of the project site. The parking lot can be seen from this viewpoint; however, the trees located along the perimeter and interior of the site obscure the views of the existing office buildings.

Proposed Condition: As shown on Figure 4.A-3, the prominent mature ornamental trees along the project frontage of Willow Way would be removed and replaced with a substantial number of new trees and other landscaping, consistent with the Development Code requirements. When initially planted, new trees would be much smaller than the existing mature vegetation, as shown in the view. New buildings and a landscaped seating area would be located at the southeastern corner of the project site. The proposed buildings would be highly visible to motorists and pedestrians on Diamond Boulevard or Willow Way due to the removal of the mature vegetation, replacement with smaller, immature trees, and the new buildings' locations at the perimeter of the site. Views of the buildings would be partially screened as new trees and landscaping mature.

Viewpoint 2: View from Diamond Boulevard and Willow Way at the Eastern Corner

Existing Condition: Viewpoint 2 (Figure 4.A-4) depicts the project site facing west toward the eastern corner of the site at the Diamond Boulevard and Willow Way intersection. As shown, the mature ornamental trees bordering the perimeter of the project site obscure the views of the existing office buildings.

Proposed Condition: As shown on Figure 4.A-4, the existing dominant view of mature ornamental trees located along the perimeter of the project site would be removed and replaced with buildings and landscaping associated with the shopping center. The new buildings at the perimeter of the site would be highly visible to motorists and pedestrians on Diamond Boulevard and Willow Way. Views of the buildings would be partially screened as new trees and landscaping mature.

Viewpoint 3: View from Diamond Boulevard Entrance

Existing Condition: Viewpoint 3 (Figure 4.A-5) depicts the project site facing southwest at the main entrance to the site on Diamond Boulevard. This vantage point was selected because it is the primary access point and represents the view for drivers or pedestrians exiting the shopping center on the east side of Diamond Boulevard. As shown, mature ornamental trees border the perimeter of the project site as well as both sides of the Diamond Boulevard entrance into the interior of the site. The surface level parking spaces and the existing buildings are slightly visible through the trees.

Proposed Condition: As shown on Figure 4.A-5, the mature ornamental vegetation along the frontage of Diamond Boulevard and along both sides of the main entrance would be removed. A monument sign would be located in the median at the main entrance driveway. New buildings

and landscaping would border both sides of the main entrance and would be highly visible to motorists and pedestrians on Diamond Boulevard due to the removal of the mature vegetation and the buildings' location adjacent to Diamond Boulevard. The parking area north of the entry buildings would be visible from the street through the perimeter trees, similar to the existing condition.

Viewpoint 4: View from Diamond Boulevard and Galaxy Way at the Northern Corner

Existing Condition: Viewpoint 4 (Figure 4.A-6) depicts the project site facing south from the intersection of Diamond Boulevard and Galaxy Way. Mature ornamental trees border the perimeter of the project site and obscure most views of the interior of the site, though a break in the trees at the corner allows a limited view of the buildings and parking area within the site.

Proposed Condition: As shown on Figure 4.A-6, the mature ornamental vegetation along the perimeter of the site would be removed and the proposed grocery store building would be visible at the northern corner of the project site. The building would be highly visible to motorists and pedestrians on Diamond Boulevard and Galaxy Way. Views of the building would be partially screened as new trees and landscaping mature.

Viewpoint 5: View from Northbound I-680

Existing Condition: Viewpoint 5 (Figure 4.A-7) depicts the project site facing north on I-680. This vantage point was selected because it represents the view of the project site for motorists traveling northbound on I-680. As shown, mature trees border the perimeter of the project site and obscure views of the existing office buildings. A vegetated landscaped strip is located between I-680 and the project site.[5]

Proposed Condition: As shown on Figure 4.A-7, the existing mature trees would be replaced with new trees. If the proposed pylon signs are approved, one of the three proposed highway pylon signs would be located at the southern corner of the project site and would be the most dominant feature in the view due to its size and proximity to the viewpoint. The rear wall of the proposed shopping center buildings, located along the perimeter of the project site, would be in the background. Signage, including text and graphics on the rear of the buildings, would also be a prominent visual element of this view. The two additional proposed highway pylon signs are only minimally visible in this view. The highway pylon signs as well as the new buildings would be highly visible to motorists traveling along I-680 due to the removal of the mature vegetation and its replacement with newer vegetation that would be maintained by the shopping center management to ensure visibility of the highway-oriented signage. The views may ultimately be modified to a certain extent depending on the ultimate location of the highway pylon sign(s) and related digital reader board (digital screen) (see applicant's proposed master sign program).

[5] Most of the trees shown bordering the freeway on the project site were removed in late January 2016, when a total of 93 trees were removed from the project site, including 3 protected trees.

Viewpoint 6: View from Southbound I-680

Existing Condition: Viewpoint 6 (Figure 4.A-8) depicts the project site as experienced by motorists traveling southbound on I-680. As shown, mature trees border the perimeter of the project site and obscure views of the existing office buildings.

Proposed Condition: As shown on Figure 4.A-8, the mature trees along the perimeter of the project site would be removed and replaced with new trees. The highway pylon signs and the new buildings would be highly visible to motorists traveling along I-680. The views may ultimately be modified to a certain extent depending on the ultimate location of the middle highway pylon sign with a digital screen (see applicant's proposed master sign program).

As described above, the existing visual character of the project site would be changed from an office use dominated by a perimeter parking lot and landscaping to a commercial shopping center with more visible buildings and signage. The buildings and signage associated with the commercial shopping center would be substantially more visible when compared to the existing views of the project site primarily due to the siting of buildings at the perimeter of the site and due to removal of the existing mature trees. Most of the commercial buildings would be situated at the rear of the project site in an L-shaped configuration abutting I-680 and the Willows Shopping Center. Smaller single-tenant and multi-tenant commercial buildings would be located along Diamond Boulevard adjacent to the main site entrance and at each corner of the site. The mature ornamental trees would no longer be the dominant visual feature on the project site; given the retail nature of the project, the proposed shopping center buildings would be the dominant visual features. These changes to views of the project site would be substantial and noticeable to drivers and pedestrians familiar to the area. However, the commercial character of the project site would not be unique to the area, as the site is surrounded by other commercial uses with a variety of architectural styles. Further, the project includes a unified architectural style and substantial landscaping that would eventually mature to soften views of the buildings. While the proposed shopping center would be a change to the visual character of the area, it would not substantially degrade the visual character or quality of the site and its surroundings. Therefore, this impact is considered less than significant, and no mitigation is required.

Text Amendment to Allow Freeway-Oriented Signs. The proposed master sign program includes signage that is intended to be viewed from the freeway and is currently prohibited by the Municipal Code Section 18.180.080.G. In order to allow the proposed freeway-oriented signage, a text amendment to the Municipal Code (sign ordinance amendment) would require approval by the City Council. The freeway-oriented signage proposed at the project site includes both highway pylon signs and wall signs with text and graphics. On-site freeway-oriented signs proposed for the Veranda Shopping Center are described below. Potential off-site freeway-oriented signs that could be allowed elsewhere are discussed in the Cumulative Impacts section.

- **On-Site Freeway-Oriented Signs.** Approval of the proposed sign ordinance amendment and related master sign program would allow the proposed freeway-oriented signage to be constructed as part of the proposed shopping center. The freeway-oriented signage would change the visual character of the project site as seen from the freeway, from a view dominated by existing landscaping to one dominated by buildings and commercial signage as shown in Figures 4.A-7 and 4.A-8. This change would be noticeable to drivers familiar with the area, as views along this

portion of the I-680 freeway are primarily dominated by mature trees adjacent to the freeway,[6] with buildings generally set back from the right-of-way. However, the resulting commercial visual character of the project would not be uncommon for regional commercial centers and would be somewhat similar to views of other commercial sites in the immediate vicinity. South of the project site, the Willows Shopping Center has two existing 55 foot tall pylon signs with tenant names that are visible from I-680. In addition, a freestanding Krispy Kreme building constructed directly adjacent to the freeway has an illuminated wall sign that faces the freeway. Also, a Caltrans digital message sign is located adjacent to the Willows Shopping Center on I-680 north of Willow Pass Road. On the west side of I-680, a parking structure and wall at the rear of the Sunvalley Shopping Center is a prominent visual element somewhat screened by trees in the foreground. Major tenants of the Sunvalley Shopping Center have freeway-oriented signs (including Macy's, JC Penny's, Nordstrom Rack), but these existing signs are more distant and less visible than the signage proposed by the project. Furthermore, the proposed signage would not exceed the maximum height of the buildings on the project site (i.e., no taller than 60 feet); would be designed to be visually compatible with the other architectural features of the project; would be required to be considered in the context of a broader master sign program to ensure consistency, coherence and high quality in overall design; and would be required to satisfy numerous findings under the related use permit process prior to approval. In summary, the freeway-oriented signage proposed at the project site would be a noticeable change to the area where freeway views are more dominated by mature landscaping, would add to the visual clutter and commercial character of the area, but would not substantially degrade the visual character of the area. Therefore, the impact of freeway-oriented signs proposed for the shopping center project site is considered less than significant, and no mitigation is required.

(3) Light and Glare. Potential light and glare impacts of the project are discussed below.

Light. The potential impacts of lighting from the project are discussed below.

Temporary Impacts (Construction). No light-sensitive uses are located immediately adjacent to the project site. Lighting required during the construction period could generate light spillover in the vicinity of the project site. However, construction activities would only occur during daylight hours and any construction-related illumination would be used for safety and security purposes only (in compliance with the City's Municipal Code outdoor lighting requirements) and would only occur for the duration required for the temporary construction period. With adherence to the existing City's Municipal Code regulations, light from construction activities would not substantially impact surrounding uses, alter the character of off-site areas surrounding the construction area, or interfere with the performance of an off-site activity. Therefore, construction of the project would not create a new source of substantial light that would adversely affect day or nighttime views in the area, and light impacts associated with construction would be less than significant. No mitigation is required.

Permanent Impacts (Operation). No light-sensitive residential uses are located immediately adjacent to the project site. The closest light-sensitive uses surrounding the project site include the residential neighborhoods located approximately 0.25 mile to the west of the project site between

[6] 93 trees along the freeway frontage were removed in late January 2016 following commencement of the environmental review. For the purposes of this analysis, the trees are presumed to exist, as shown in the photos,

Golf Club Road and Taylor Boulevard/Sunvalley Boulevard. However, these light-sensitive uses are located across from I-680, Sunvalley Shopping Center, and Contra Costa Boulevard from the project site; thus, light spillover form the project site would not occur and would not be substantial due to the distance from the project site.

Existing nighttime lighting on the project site and in the surrounding area would include interior and exterior building lighting, security/courtesy lighting for parking areas, vehicle headlights, and street lighting. The proposed shopping center would generate more light on-site than the existing office buildings and parking lots when compared to typical shopping centers which require more illumination due to their evening hours of operation and commercial use. Light sources associated with the project would include building identification and retail business signs, parking lot lighting, architectural and landscape lighting, security and wayfinding lighting provided at vehicle entry points and areas of circulation, exterior lighting at building entrance areas, and pedestrian and other security lighting along pathways and in courtyards and plazas. All exterior lighting would comply with the City's outdoor lighting requirements included in the City's Municipal Code. Lighting would generally be aimed toward a structure and directed downward to prevent spillover onto adjacent properties and lighting of the night sky.

Although the project would increase the overall intensity of on-site land uses and associated lighting compared to the existing condition, the increase in lighting would not signify substantial increases in light intensity at off-site locations. The project site is located within a highly developed area of the City that currently generates lighting levels similar to the project that are typical of an urban area. Lighting for signage would be subject to compliance with the specifications of a master sign program with uniform lighting standards to prevent potential impacts. If the proposed sign ordinance amendment is approved, a master sign program would also be necessary. The master sign program would require approval by the City pursuant to the City's sign ordinance. Lighting along the rear of the site abutting the freeway would illuminate wall signs, graphics, and pylon signs and would include architectural accent lighting for the buildings. In addition, the highway pylon sign in the middle of the project site could include a digital reader board (similar to a large television screen) with changeable messages and graphics (subject to meeting specified criteria). The increase in illumination along the freeway frontage would be substantial compared to the existing condition, which has no substantial lighting other than minimal security lighting. However, the increase in lighting on the project site and along the freeway would not result in a new source of light that would adversely affect nighttime views in the area because no substantial nighttime views exist in the immediate vicinity, and also because commercial lighting and vehicle light on the freeway is already substantial. Therefore, the increase in lighting from the project is considered less than significant, and no mitigation is required.

Glare. The potential impacts of glare from the project are discussed below.

Temporary Impacts (Construction). Daytime glare can result from natural sunlight reflecting from a shiny surface that would interfere with the performance of an off-site activity, such as the operation of a motor vehicle. Construction activities are not anticipated to result in flat, shiny surfaces that would reflect sunlight or cause other natural glare. Minor glare from sunlight on construction equipment and vehicle windshields is not anticipated to impact visibility in the area as the construction site would be fenced and shielded from pedestrian and motorist views. In addition, pursuant to City requirements, it is not anticipated that construction vehicles would be operating at

night and thus, would not create nighttime sources of glare. Therefore, impacts due to glare generation and interference with the performance of an off-site activity or adverse effects on views would be less than significant during construction. No mitigation is required.

Permanent Impacts (Operation). Daytime glare can result from natural sunlight reflecting from a shiny surface that would interfere with the performance of an off-site activity, such as the operation of a motor vehicle. Reflective surfaces can be associated with window glass and polished surfaces. The finished facades of the project's buildings would primarily consist of materials that have low reflectivity (white and gray stucco), and low-reflective glass in the buildings' windows. While the project's building accents may include metal or other highly polished surfaces around building entrances, such accents would be small relative to the size of the facade. Therefore, the reflection toward oncoming motorists from the building materials used in the project's buildings would be minimal.

Nighttime glare-sensitive uses include vehicles traveling along adjacent roadways. Nighttime glare-producing components of the project would include lighting from illuminated signage, exterior building lighting, parking lot lighting, and vehicle headlights. Lighting for signage would be subject to a master sign program to prevent potential glare and light impacts. All other exterior lighting would be aimed against the structures and directed downward to prevent glare.

Overall, the nighttime glare produced by the signage, exterior lighting, and vehicular headlights would be similar to the existing nighttime glare produced by the surrounding commercial and office uses under the existing condition. Therefore, impacts due to glare would be less than significant during operation of the project. No mitigation is required.

c. Cumulative Impacts. Implementation of the project, combined with the development of other past, present and reasonably foreseeable future projects in the area, would not result in a cumulatively considerable impact to aesthetics. Other cumulative projects identified in the area (see Table 6.E-1) would redevelop properties with new commercial uses, and would not substantially change the visual character of the commercial area in the vicinity of the project site given the already highly urbanized nature.

The proposed sign ordinance amendment, if approved, could potentially allow for freeway oriented signage at a limited number of other locations in the City along I-680 in the vicinity of the project site in the event and to the extent property owner(s) sought and obtained approval from the City of a master sign program and related use permit after satisfying all specified criteria (i.e., located only along I-680; commercially zoned property that can accommodate a minimum of 300,000 sf for a multi-tenant shopping center, etc.). Visual impacts resulting from the installation of additional freeway oriented signage in addition to that proposed at the Veranda Shopping Center project site, when combined with freeway oriented signage at other nearby properties, has the potential to result in a cumulatively significant impact to the visual character of the City in the vicinity of the project site, as discussed below.

<u>Impact AES-1</u>: Installation of freeway-oriented signage at qualifying sites along the I-680 freeway in Concord could substantially degrade the visual character of the City as seen by motorists on I-680. (S)

If the proposed text amendment to permit freeway-oriented signage were approved, it would also potentially allow for freeway-oriented signage at a limited number of other locations in the City, to the extent such applications were submitted by other property owners and approved by the City. These other locations are limited in nature because they would otherwise need to meet the requirements of the amended sign text ordinance including: having frontage along I-680 in the City; be commercially zoned; and be large enough in size to accommodate a multi-tenant shopping center of at least 300,000 sf. Based on these criteria, potential sites in the vicinity of the project site that could potentially be eligible for freeway-oriented signs include the Willows Shopping Center and Sunvalley Shopping Center. The text amendment would impose strict limitations on the number, size, and location of freeway-oriented signage in order to minimize the potential visual clutter associated with such a change. The potential effect of freeway-oriented signage at other sites is evaluated at a programmatic level in this EIR because there are no proposals for such signage at other sites and thus any analysis beyond a programmatic one would be speculative at this time. If other property owner(s) sought to obtain approval of freeway oriented signage, not only would the applicant be required to satisfy the above-referenced requirements to qualify, the applicant would be required to obtain approval of a master sign program and related use permit. Further, these entitlements are discretionary in nature, thereby triggering environmental review under CEQA. Accordingly, it is assumed that any such application(s) would be subject to further project-specific CEQA review at the time the application(s) were submitted.

As noted above, applications for freeway-oriented signage at any other qualifying sites along I-680 would be subject to review and approval of a use permit application and a master sign program which are discretionary applications requiring environmental review by the City. For the purposes of the programmatic analysis of the sign ordinance amendment included within this EIR**,** this analysis assumes that up to five additional highway pylon signs up to 60 feet tall could ultimately be approved and constructed along I-680 within the City (in addition to the three proposed at the project site). The pylon signs could include digital message signs, illuminated signs, and indirect lighting (subject to additional potential restrictions as a result of any applicable Caltrans permitting process). Freeway-oriented wall signs with text and graphics could also be permitted at these other sites. Most of the I-680 freeway frontage in Concord is currently planted with mature trees. This analysis assumes that applications for freeway-oriented signs would also propose the removal of significant numbers of mature trees, to allow the signs to be seen by motorists traveling at highway speeds.

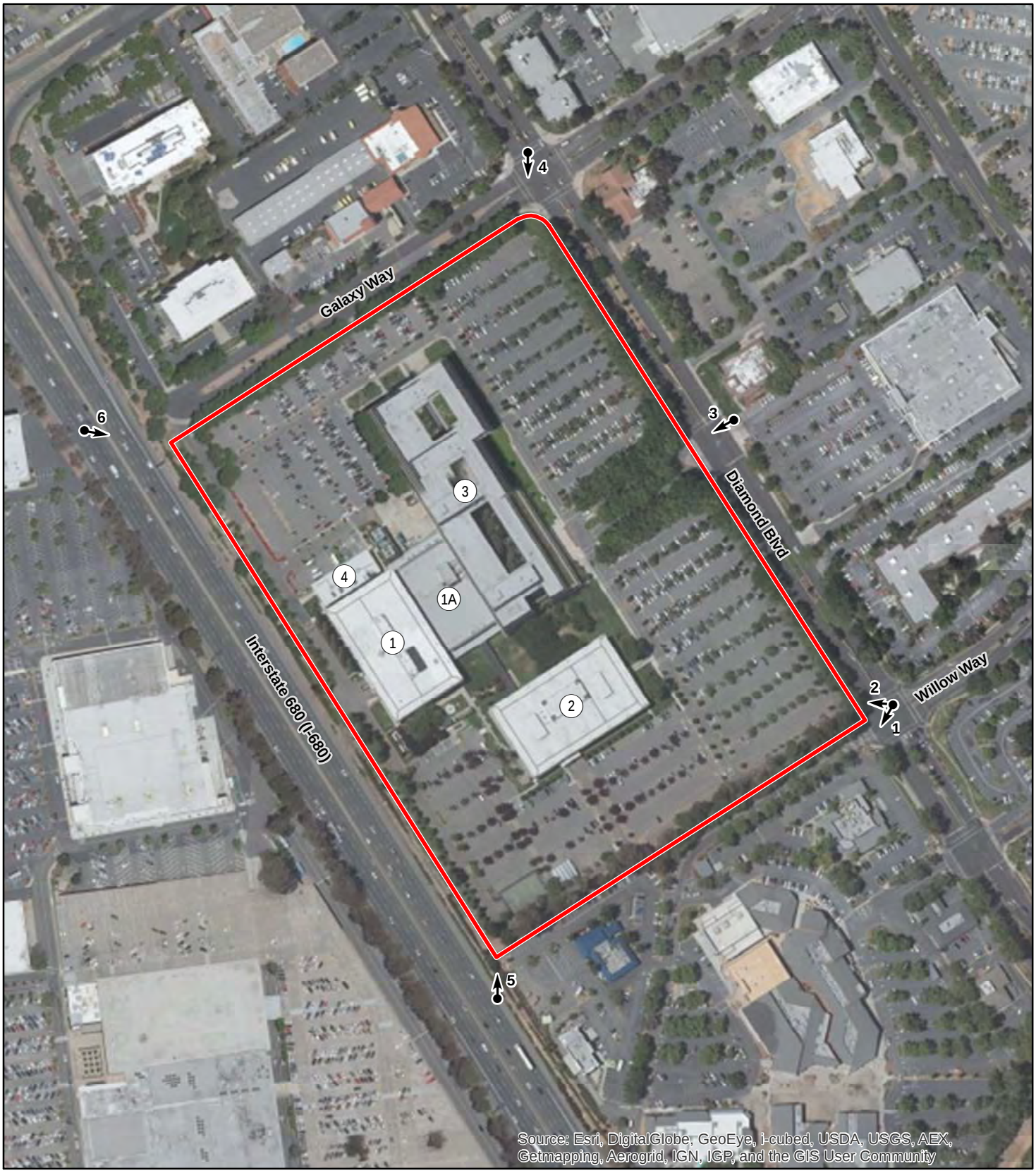
The addition of a total of 52 new highway pylon signs, plus freeway-oriented wall signs, at the Sunvalley Shopping Center and Willows Shopping Center adjacent to the I-680 freeway in the City (along with the assumed three new signs associated with the project, resulting in up to 8 total highway pylon signs) would substantially change the visual character of this area of City as viewed from the freeway, resulting in views dominated by commercial signage and visual clutter. This character would be reinforced by the removal of substantial numbers of trees to allow the visibility of the signs at substantial distances as viewed by motorists traveling at highway speeds. Nighttime views would also change substantially and be dominated by commercial illumination. These changes would substantially degrade the visual character of the City as viewed by motorists on the I-680 freeway where signage would be installed, resulting in a significant aesthetic impact.

However, to address the above concerns, discretionary review of each proposed application for freeway-oriented signage through the master sign program and use permit process would allow for site-specific review of proposed signage and provide the opportunity to consider the visual impacts of

each application, including, among other items, tree removal, illumination, and visual clutter, and would require the City to make numerous specific findings prior to approving any such signage.

> Mitigation Measure AES-1: Use permit applications for freeway-oriented signage at commercial properties shall be reviewed by the Planning Department on a case-by-case basis to determine compliance with identified criteria set forth in the sign ordinance. In addition to other requirements specified in the sign ordinance amendment potentially allowing such signage under specified circumstances, individual applications shall identify all trees to be removed as part of the project. An arborist report shall be submitted for any application that proposes tree removal, and a tree removal permit shall be submitted for the removal of any protected trees. A lighting plan and study shall be included with the application, which shall provide sufficient information as to the proposed illumination, which shall be designed to avoid causing glare that could significantly impact motorists or nearby residential properties. The application shall include visual simulations depicting existing and proposed daytime and nighttime views of the proposed signage. The merits of individual applications shall, among other things, take into consideration the cumulative visual impacts of other freeway-oriented signage in accordance with the requirements set forth in the sign ordinance (i.e., specified findings). (LTS)

Implementation of Mitigation Measure AES-1 would reduce the aesthetic impacts of proposed freeway-oriented signage to less than significant.



LSA

FIGURE 4.A-1

LEGEND

Project Site

1 Viewpoint and Direction

(1) Building Number

N

0 150 300
FEET

The Veranda Shopping Center

Visual Simulations Viewpoint Locations Map

SOURCE: Esri Imagery Service (6/12/2014).

I:\CYR1502\GIS\Maps\EIR\Figure 4.A-1_Visual Simulations Viewpoint Locations Map.mxd (2/26/2016)

LSA

LEGEND

1 Viewpoint and Direction

FIGURE 4.A-2

N

0 200 400

FEET

SOURCE: Architects Orange (2/11/2016)

The Veranda Shopping Center

Aerial Photograph and Contextual Site Plan

P:\CYR1502\g\EIR\Figure 4.A-2_Aerial Photograph and Contextual Site Plan.cdr (4/22/2016)

Viewpoint 1: Existing view from Diamond Blvd and Willow Way entrance, looking southwest

Viewpoint 1: Visual simulation of the project

LSA

FIGURE 4.A-3

The Veranda Shopping Center

Visual Simulation
Viewpoint 1 (Diamond Blvd and Willow Way Entrance)

Viewpoint 2: Existing view from Diamond Blvd and Willow Way, looking west

Viewpoint 2: Visual simulation of the project

LSA

FIGURE 4.A-4

The Veranda Shopping Center

Visual Simulation

Viewpoint 2 (Diamond Blvd and Willow Way – East Corner)

Viewpoint 3: Existing view from Diamond Blvd entrance, looking southwest

Viewpoint 3: Visual simulation of the project

LSA

FIGURE 4.A-5

The Veranda Shopping Center

Visual Simulation
Viewpoint 3 (Diamond Blvd Entrance)

Viewpoint 4: Existing view from Diamond Blvd and Galaxy Way, looking south

Viewpoint 4: Visual simulation of the project

LSA

FIGURE 4.A-6

The Veranda Shopping Center

Visual Simulation
Viewpoint 4 (Diamond Blvd and Galaxy Way – North Corner)

Viewpoint 5: Existing view from northbound I-680, looking north

Viewpoint 5: Visual simulation of project

LSA

FIGURE 4.A-7

The Veranda Shopping Center

Visual Simulation
Viewpoint 5 (I-680 Northbound)

Viewpoint 6: Existing view from southbound I-680, looking east

Viewpoint 6: Visual simulation of project

LSA

FIGURE 4.A-8

The Veranda Shopping Center

Visual Simulation
Viewpoint 6 (I-680 Southbound)

B. AIR QUALITY

This section assesses the project's potential environmental impacts on air quality in accordance with the requirements of CEQA, using the methodologies and assumptions contained in the Bay Area Air Quality Management District's (BAAQMD) *Air Quality CEQA Guidelines*[1]. Information in this section is used to evaluate the potential impacts of the project with respect to the significance criteria set forth in the Impacts and Mitigation Measures section. Air quality modeling results are included in Appendix C.

1. Setting

The following discussion provides an overview of existing air quality conditions in the region and the City of Concord. Ambient air quality standards and the regulatory framework are summarized, and climate, air quality conditions, and typical air pollutant types and sources are also described.

a. Air Quality Standards. Pursuant to the federal Clean Air Act of 1970, the U.S. Environmental Protection Agency (USEPA) established national ambient air quality standards (NAAQS). The NAAQS were established for major pollutants, termed "criteria" pollutants. Criteria pollutants are defined as those pollutants for which the federal and State governments have established ambient air quality standards, or criteria, for outdoor concentrations in order to protect public health.

Both the USEPA and the California Air Resources Board (ARB) have established ambient air quality standards for common 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 the health and welfare of the populace with a reasonable margin of safety. These ambient air quality standards regulate maximum levels of contaminants that represent safe levels that avoid specific adverse health effects associated with each criteria pollutant.

Federal standards include both primary and secondary standards. Primary standards set limits to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.[2]

b. Criteria Pollutants and Health Effects. Health effects of criteria pollutants and potential sources are described below and summarized in Table 4.B-1. The standards would have to be exceeded by a large margin or for a prolonged period of time for the health effects to occur. Table 4.B-2 shows both the State and federal standards for these criteria pollutants; the California Ambient Air Quality Standards (CAAQS) are more stringent than the NAAQS.

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

[2] U.S. Environmental Protection Agency, 2014. Website: www.epa.gov/air/criteria.html. October.

Table 4.B-1: Sources and Health Effects of Air Pollutants

Pollutants	Sources	Primary Effects
Carbon Monoxide (CO)	• Incomplete combustion of fossil fuels and other carbon-containing substances, such as motor exhaust. • Natural events, such as decomposition of organic matter.	• Reduced tolerance for exercise. • Impairment of mental function. • Impairment of fetal development. • Death at high levels of exposure. • Aggravation of some heart diseases (angina). • Dizziness. • Fatigue.
Nitrogen Dioxide (NO_2)	• Motor vehicle exhaust. • High temperature stationary combustion. • Atmospheric reactions. • Industrial processes.	• Aggravation of respiratory illness. • Reduced visibility. • Reduced plant growth. • Formation of acid rain.
Ozone (O_3)	• Atmospheric reaction of organic gases with nitrogen oxides in sunlight.	• Aggravation of respiratory and cardiovascular diseases. • Irritation of eyes. • Impairment of cardiopulmonary function. • Plant leaf injury. • Reduced tolerance for exercise.
Lead (Pb)	• Leaded gasoline. • Smelters. • Manufacture of lead storage batteries. • Contaminated soil.	• Impairment of blood functions and nerve construction. • Behavioral and hearing problems in children.
Suspended Particulate Matter ($PM_{2.5}$ and PM_{10})	• Stationary combustion of solid fuels. • Construction activities. • Industrial processes. • Atmospheric chemical reactions.	• Reduced lung function. • Aggravation of the effects of gaseous pollutants. • Aggravation of respiratory and cardiorespiratory diseases. • Increased cough and chest discomfort. • Soiling. • Reduced visibility. • Transportation of carcinogens.
Sulfur Dioxide (SO_2)	• Combustion of sulfur-containing fossil fuels. • Smelting of sulfur-bearing metal ores. • Industrial processes.	• Aggravation of respiratory diseases (asthma, emphysema). • Reduced lung function. • Irritation of eyes. • Reduced visibility. • Plant injury. • Deterioration of metals, textiles, leather, finishes, coatings, etc.
Toxic Air Contaminants	• Cars and trucks (especially diesels). • Industrial sources, such as chrome platers. • Neighborhood businesses, such as dry cleaners and service stations. • Building materials and products.	• Cancer. • Chronic eye, lung, or skin irritation. • Neurological and reproductive disorders.

Source: California Air Resources Board, 2015.

Table 4.B-2: Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]		Federal Standards[b]		
		Concentration[c]	Method[d]	Primary[c,e]	Secondary[c,f]	Method[g]
Ozone (O_3)	1-Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	–	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 ($PM_{2.5}$)[h]	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	12 µg/m^3	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)	–	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)[i]	Annual Arithmetic Mean	0.03 ppm (57 µg/m^3)	Gas Phase Chemiluminescence	53 ppb (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemilumi-nescence
	1-Hour	0.18 ppm (339 µg/m^3)		100 ppb (188 µg/m^3)	–	
Lead (Pb)[j,k]	30-Day Average	1.5 µg/m^3	Atomic Absorption	–	–	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	–		1.5 µg/m^3 (for certain areas)[k]	Same as Primary Standard	
	Rolling 3-Month Average[i]	–		0.15 µg/m^3		
Sulfur Dioxide (SO_2)[l]	24-Hour	0.04 ppm (105 µg/m^3)	Ultraviolet Fluorescence	0.14 ppm (for certain areas)[i]	–	Ultraviolet Fluorescence; Spectrophoto-metry (Pararosaniline Method)
	3-Hour	–		–	0.5 ppm (1,300 µg/m^3)	
	1-Hour	0.25 ppm (655 µg/m^3)		75 ppb (196 µg/m^3)	–	
	Annual Arithmetic Mean	–		0.030 ppm (for certain areas)[i]	–	
Visibility-Reducing Particles[m]	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[j]	24-Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

Table notes included on next page.

[a] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- 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 8-hour concentration measured at each site in a year, averaged over 3 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 1. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact USEPA 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 that 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 USEPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the USEPA.

[h] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM_{10} standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[i] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 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] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

[l] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standards to the California standards the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

[m] In 1989, the ARB converted both the general Statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the Statewide and Lake Tahoe Air Basin standards, respectively.

°C = degrees Celsius
ARB = California Air Resources Board
USEPA = United States Environmental Protection Agency
$\mu g/m^3$ = micrograms per cubic meter
mg/m^3 = milligrams per cubic meter
ppm = parts per million
ppb = parts per billion

Source: ARB, 2015.

(1) Ozone. Rather than being directly emitted, ozone (smog) is formed by photochemical reactions between oxides of nitrogen (NO_x) and reactive organic gases (ROG). Ozone is a pungent, colorless gas. 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, the elderly, and young children. Ozone levels peak during the summer and early fall months.

(2) Carbon Monoxide. CO is formed by the incomplete combustion of fossil fuels, almost entirely from automobiles. 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 it interferes with the transfer of oxygen to body tissues.

(3) Nitrogen Dioxide. NO_2 is a reddish brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, NO_2 also contributes to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition. NO_2 may be visible as a coloring component on high pollution days, especially in conjunction with high ozone levels. NO_2 decreases lung function and may reduce resistance to infection.

(4) 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.

(5) 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 10 microns or less in diameter, or PM_{10}. Fine, suspended particulate matter with an aerodynamic diameter of 2.5 microns or less, or $PM_{2.5}$, 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 byproducts of fuel combustion; through abrasion, such as tire or brake lining wear; or through fugitive dust (wind or mechanical erosion of soil). The particles 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.

(6) Lead. Leaded gasoline (phased out in the United States beginning in 1973), paint (on older houses and cars), smelters (metal refineries), the manufacture of lead storage batteries have been the primary sources of lead released into the atmosphere, and contaminated soil. Lead has multiple adverse neurotoxic health effects, and children are at special risk. Some lead-containing chemicals cause cancer in animals. Lead levels in the air have decreased substantially since leaded gasoline was eliminated. Ambient lead concentrations are only monitored on an as-warranted, site-specific basis in California. On October 15, 2008, the USEPA strengthened the national ambient air quality standard for lead by lowering it from 1.5 to 0.15 $\mu g/m^3$. The USEPA revised the monitoring requirements for lead in December 2010. These requirements increased the number of monitoring stations nationally, with a focus on airports and large urban areas.

(7) Toxic Air Contaminants. In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. These TACs are injurious in small quantities and are regulated by the USEPA and the ARB. Some examples of TACs include benzene,

butadiene, formaldehyde, and hydrogen sulfide. The identification, regulation, and monitoring of TACs is relatively recent compared to that for criteria pollutants.

TACs do not have ambient air quality standards, but are regulated by the USEPA, ARB, and BAAQMD. In 1998, the ARB identified particulate matter from diesel-fueled engines as a toxic air contaminant. The ARB has completed a risk management process that identified potential cancer risks for a range of activities using diesel-fueled engines.[3] High-volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic (e.g., distribution centers and truck stops) were identified as 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, and schools with a high volume of bus traffic. Health risks from TACs are a function of both concentration and duration of exposure.

Monitoring data and emissions inventories of TACs help the BAAQMD determine potential health risks to Bay Area residents. Ambient monitoring concentrations of TACs indicate that pollutants emitted primarily from motor vehicles (1,3-butadiene and benzene) account for slightly over 50 percent of the average calculated cancer risk from ambient air in the Bay Area.[4]

Unlike TACs emitted from industrial and other stationary sources noted above, most diesel particulate matter is emitted from mobile sources – primarily "off-road" sources such as construction and mining equipment, agricultural equipment, and truck-mounted refrigeration units, as well as trucks and buses traveling on freeways and local roadways.

Agricultural and mining equipment is not commonly used in urban areas of the Bay Area, while construction equipment typically operates for a limited time at various locations. As a result, the readily identifiable locations where diesel particulate matter is emitted in the City of Concord include high-traffic roadways and other areas with substantial truck traffic.

Although not specifically monitored, recent studies indicate that exposure to diesel particulate matter (DPM) may contribute significantly to a cancer risk (a risk of approximately 500 to 700 in 1,000,000) that is greater than all other measured TACs combined.[5] The technology for reducing diesel particulate matter emissions from heavy-duty trucks is well established, and both State and federal agencies are moving aggressively to regulate engines and emission control systems to reduce and remediate diesel emissions. The ARB anticipates that by 2020, average Statewide diesel particulate matter concentrations will decrease by 85 percent from levels in 2000 with full implementation of the ARB's Diesel Risk Reduction Plan,[6] meaning that the Statewide health risk from diesel particulate matter is expected to decrease from 540 cancer cases in 1,000,000 to 21.5 cancer cases in 1,000,000. The Bay Area cancer risk from diesel particulate matter will likely decrease by a similar factor by 2020.

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[3] California Air Resources Board, 2000. Stationary Source Division and Mobile Source Control Division. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.* October.

[4] Bay Area Air Quality Management District, 2007. *Toxic Air Contaminant Control Program Annual Report 2003 Volume 1.* August.

[5] Ibid.

[6] California Air Resources Board, 2000, op. cit.

In 2005, the ARB approved a regulatory measure to reduce emissions of toxic and criteria air pollutants by limiting the idling of new heavy-duty diesel vehicles. The regulations generally limit idling of commercial motor vehicles (including buses and trucks) within 100 feet of a school or residential area for more than 5 consecutive minutes or periods aggregating more than 5 minutes in any 1 hour.[7] Buses or vehicles also must turn off their engines upon stopping at a school and must not turn their engines on more than 30 seconds before beginning to depart from a school.

(8) Sensitive Receptors. Air quality does not affect every individual in the same way, and some groups are more sensitive to adverse health effects than others. As noted above, population subgroups sensitive to the health effects of air pollutants include the elderly and the young; those with higher rates of respiratory disease, such as asthma and chronic obstructive pulmonary disease; and those with other environmental or occupational health exposures (e.g., indoor air quality) that affect cardiovascular or respiratory diseases. Sensitive receptors are defined by the BAAQMD as "facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples include schools, hospitals, and residential areas." In addition, the City's General Plan describes sensitive receptors as facilities that house or attract children, the elderly, and people with illnesses. Compared to commercial and industrial areas, people generally spend longer periods of time at their residences, with associated greater exposure to ambient air quality conditions.

The closest sensitive receptors to the project site are single-family residential units located along Harvard Drive, approximately 1,000 feet west of the project site. This residential neighborhood is located due west of Contra Costa Boulevard and is also west of the I-680 freeway, the Sunvalley Mall, and other commercial uses. A senior housing project is also currently under construction on Civic Court, approximately 1,000 feet east of the project site.

c. Regulatory Framework. The BAAQMD is primarily responsible for regulating air pollution emissions from stationary sources (e.g., factories) and indirect sources (e.g., traffic associated with new development), as well as for monitoring ambient pollutant concentrations. The District's jurisdiction encompasses seven counties—Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa—and portions of Solano and Sonoma Counties. The ARB and the USEPA regulate direct emissions from motor vehicles.

(1) Federal Clean Air Act. The 1970 federal Clean Air Act authorized the establishment of national health-based air quality standards and also set deadlines for their attainment. The federal Clean Air Act Amendments of 1990 changed deadlines for attaining NAAQS as well as the remedial actions required for areas of the nation that exceed the standards. Under the Clean Air Act, State and local agencies in areas that exceed the NAAQS are required to develop State Implementation Plans to show how they will achieve the NAAQS by specific dates.

The Clean Air Act 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 would satisfy the Clean Air Act requirements.

[7] There are 12 exceptions to this requirement (e.g., emergency situations, military, adverse weather conditions, etc.), including when a vehicle's power takeoff is being used to run pumps, blowers, or other equipment; when a vehicle is stuck in traffic, stopped at a light, or under direction of a police officer; when a vehicle is queuing beyond 100 feet from any restricted area; or when an engine is being tested, serviced, or repaired.

(2) California Clean Air Act. In 1988, the California Clean Air Act 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 Clean Air Act provides air districts with 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 nonattainment district is required to adopt a Clean Air Plan (Plan) to achieve a 5 percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each nonattainment pollutant or its precursors. The Plan shows how a district would reduce emissions to achieve air quality standards. Generally, the State standards for these pollutants are more stringent than the national standards.

(3) California Air Resources Board Air Quality and Land Use Handbook. The ARB is the agency responsible for the coordination and oversight of State and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA), adopted in 1988. The CCAA requires that all air districts in the State achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. The CCAA specifies that districts should focus on reducing the emissions from transportation and air-wide emission sources, and provides districts with the authority to regulate indirect sources.

ARB is also primarily responsible for developing and implementing air pollution control plans to achieve and maintain the NAAQS. ARB is primarily responsible for Statewide pollution sources and produces a major part of the SIP. Local air districts provide additional strategies for sources under their jurisdiction. ARB combines this data and submits the completed SIP to U.S. EPA.

Other ARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control and air quality management districts), establishing CAAQS (which are more stringent than the NAAQS), determining and updating area designations and maps, and setting emissions standards for mobile sources, consumer products, small utility engines, and off-road vehicles. The ARB's Diesel Risk Reduction Plan is intended to substantially reduce diesel particulate matter emissions and associated health risks through introduction of ultra-low-sulfur diesel fuel – a step already implemented – and cleaner-burning diesel engines.

The ARB has developed an Air Quality and Land Use Handbook (Handbook) 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.[8] While not technically a matter to be evaluated under CEQA since it involves impacts of the existing environment on a project as opposed to the impacts of the project on the environment (i.e., "CEQA in reverse"), the ARB Handbook recommends that planning agencies strongly consider proximity to air pollution sources when finding new locations for air 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:

- Within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day;

[8] California Air Resources Board, 2005. *Air Quality and Land Use: A Community Health Perspective*. April.

- 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); or
- 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 its 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.

(4) Bay Area Air Quality Management District. The BAAQMD seeks to attain and maintain air quality conditions in the San Francisco Bay Area Air Basin through a comprehensive program of planning, regulation, enforcement, technical innovation, and education. The clean air strategy includes the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources. The BAAQMD also inspects stationary sources and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by law.

The BAAQMD is responsible for developing a Clean Air Plan that guides the region's air quality planning efforts to attain the California Ambient Air Quality Standards. The BAAQMD's *2010 Clean Air Plan* is the latest Clean Air Plan, which contains district-wide control measures to reduce ozone precursor emissions (i.e., ROG and NO_x), particulate matter, and greenhouse gas emissions.

The Bay Area *2010 Clean Air Plan* was adopted on September 15, 2010, by the BAAQMD's Board of Directors. The BAAQMD, in partnership with the Association of Bay Area Governments, the Bay Conservation and Development Commission, and the Metropolitan Transportation Commission, is in the process of producing an updated 2015 Clean Air Plan that will include Regional Climate Protection Strategies. The current Clean Air Plan includes the following:

- Updates 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;
- Provides a control strategy to reduce ozone, PM, air toxics, and greenhouse gases in a single, integrated plan;
- Reviews progress in improving air quality in recent years; and
- Establishes emission control measures to be adopted or implemented in the 2010 to 2013 timeframe.

(5) City of Concord. The City of Concord General Plan[9] addresses air quality in the Safety and Noise Chapter. Principles and policies addressing air quality call for the City to work with the BAAQMD to improve and maintain air quality that meets State and federal standards. The General Plan policies specifically applicable to air quality are discussed in Table 4.I-1 in Section 4.I, Land Use and Planning Policy.

[9] Concord, City of, 2007. *Concord 2030 General Plan*. October.

Additionally, the City's Municipal Code addresses odors in Chapter 18.150, General Development Standards, and in Chapter 18.200, Standards for Specific Uses. Chapter 18.150 establishes standards for all new and existing land uses to minimize operational impacts and promote compatibility with adjoining areas and uses. In addition, Chapter 18.15 states that all activities, processes, and uses shall not produce obnoxious or objectionable odors or fumes, perceptible without instruments, beyond the property line of the site. Chapter 18.200 states that restaurants shall provide measures including a scrubber, carbon filter, or similar equipment on the roof vent to control and to reduce odors to acceptable levels.

(6) Attainment Status. The ARB is required to designate areas of the State as attainment, nonattainment, or unclassified for all State standards. An *attainment* designation for an area signifies that pollutant concentrations did not violate the standard for the pollutant in that area. A *nonattainment* designation indicates that a pollutant concentration violated the standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. An *unclassified* designation signifies that data do not support either an attainment or nonattainment status. The California Clean Air Act divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The USEPA also designates areas as attainment, nonattainment, or unclassified. Table 4.B-3 provides a summary of the attainment status for the San Francisco Bay Area with respect to national and State ambient air quality standards.

Table 4.B-3: San Francisco Bay Area Attainment Status

	Averaging Time	California Standards [a]		National Standards [b]	
		Concentration	Attainment Status	Concentration [c]	Attainment Status
Ozone (O_3)	8-Hour	0.070 ppm (137µg/m^3)	Nonattainment [h]	0.075 ppm	Nonattainment [d]
	1-Hour	0.09 ppm (180 µg/m^3)	Nonattainment	Not Applicable	Not Applicable [e]
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	Attainment	9 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)	1-Hour	0.18 ppm (339 µg/m^3)	Attainment	0.100 ppm	Unclassified
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	Not Applicable	0.053 ppm (100 µg/m^3)	Attainment
Sulfur Dioxide (SO_2)	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	0.075 ppm (196 µg/m^3)	Attainment
	Annual Arithmetic Mean	Not Applicable	Not Applicable	0.030 ppm (80 µg/m^3)	Attainment [j]
Coarse Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	Nonattainment [g]	Not Applicable	Not Applicable
	24-Hour	50 µg/m^3	Nonattainment	150 µg/m^3	Unclassified
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m^3	Nonattainment [g]	15 µg/m^3	Attainment
	24-Hour	Not Applicable	Not Applicable	35 µg/m^3 [i]	Nonattainment

[a] California standards for ozone, carbon monoxide (except in the Lake Tahoe air basin), 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 the ARB determines would occur less than once per year on average. The Lake Tahoe CO standard is 6.0 ppm, a level one-third the national standard and two-thirds the State standard.

[b] National standards shown are the "primary standards" designed to protect public health. National standards other than for ozone, particulates, and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent 3-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than 1. The 8-hour ozone standard is attained when the 3-year average of the fourth 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 USEPA 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 for the national 8-hour ozone standard. USEPA lowered the national 8-hour ozone standard from 0.80 to 0.75 ppm (i.e., 75 ppb), effective May 27, 2008.

[e] The national 1-hour ozone standard was revoked by USEPA 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, the ARB established new annual standards for $PM_{2.5}$ and PM_{10}.
[h] The 8-hour California ozone standard was approved by the ARB on April 28, 2005 and became effective on May 17, 2006.
[i] On January 9, 2013, USEPA issued a final rule to determine that the Bay Area attains the 24-hour $PM_{2.5}$ national standard. This USEPA rule suspends key SIP requirement as long as monitoring data continue to show that the Bay Area attains the standard. Despite this USEPA action, the Bay Area will continue to be designated as nonattainment for the national 24-hour $PM_{2.5}$ standard until such time as the air district submits a redesignation request and a maintenance plan to USEPA and USEPA approves the proposed redesignation.
[j] On June 2, 2010, the USEPA 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. The existing 0.030 ppm annual and 0.14 ppm 24-hour SO_2 NAAQS, however, must be used until 1 year following USEPA initial designations of the new 1-hour SO_2 NAAQS.

Lead (Pb) is not listed in the above table because it has been in attainment since the 1980s.
ppb = parts per billion
ppm = parts per million
mg/m^3 = milligrams per cubic meter
$\mu g/m^3$ = micrograms per cubic meter

Source: Bay Area Air Quality Management District, Bay Area Attainment Status, 2015.

d. Existing Climate and Air Quality. Regional air quality, local climate and air quality in the project vicinity, and air pollution climatology are described below.

(1) Regional and Local Air Quality Conditions. The City of Concord is located in the Contra Costa County climate subregion in the San Francisco Bay Area. The proximity of the San Francisco Bay and Pacific Ocean has a moderating influence on the climate. The shallow San Francisco Air Basin is ringed by hills that taper into a number of sheltered valleys around the perimeter. Two primary atmospheric outlets exist. One is through the strait known as the Golden Gate, a direct outlet to the Pacific Ocean. The second extends to the northeast, along the west delta region of the Sacramento and San Joaquin Rivers.

Contra Costa County lies east of the San Pablo Bay, bounded by Alameda County to the south, San Joaquin County to the east, and Solano and Sacramento counties to the north. Contra Costa County is located in the East Bay, which consists of Contra Costa and Alameda Counties. Wind speeds are generally low throughout the region, and winds typically blow from northwest to southwest. However, strong afternoon gusts are common in the northern portion of the County around the Carquinez Strait. Annual rainfall averages between 18 and 23 inches across the County.[10]

Temperatures in the San Ramon Valley and Diablo Valley are warm in the summer and cool in the winter, due mostly to their distance from the moderating effect of water bodies and because the California Coast Range blocks marine air flow into the valleys. The Carquinez Strait region remains temperate due to its proximity to water and oceanic air flows.[11] Average winter temperatures are mild, with tule fog often occurring at night while average summer temperatures are usually warm during the day and mild overnight, with lower temperatures and higher winds along the western areas of the County abutting San Pablo Bay.

[10] BAAQMD, 2015. *Climate in Contra Costa County*. November.

[11] Ibid.

In eastern Contra Costa County, summer temperatures often approach triple digits in the afternoon, resulting in higher ozone levels that often exceed health standards. During the winter, $PM_{2.5}$ can be transported westward through the Carquinez Strait from the Central Valley where it adds to wood smoke, causing health standards to be exceeded.[12]

Two types of air pollutants affect air quality in Concord – criteria air pollutants and toxic air contaminants. The City also faces air quality issues relating to odors and nuisances such as dust and smoke. As explained more fully in Chapter 4.F, Greenhouse Gas Emissions of this Draft EIR, urban activities in the City generate greenhouse gases, which contribute to global climate change.[13]

Air quality is a function of both local climate and local sources of air pollution balancing the natural dispersal capacity of the atmosphere and emissions of air pollutants from human uses of the environment. Air quality conditions in the San Francisco Bay Area have improved significantly since the BAAQMD was created in 1955. Ambient concentrations of air pollutants and the number of days during which the region exceeds air quality standards have fallen dramatically. Exceedances of air quality standards occur primarily during meteorological conditions conducive to high pollution levels, such as cold, windless winter nights or hot, sunny summer afternoons.

Ozone levels, measured by peak concentrations and the number of days over the State 1-hour standard, have declined substantially as a result of aggressive programs by the BAAQMD and other regional, State, and federal agencies. The reduction of peak concentrations represents progress in improving public health; however, the Bay Area still exceeds the State standard for 1-hour ozone as well as the State and federal 8-hour standards. Levels of PM_{10} have exceeded State standards two of the last three years, and the area is considered a nonattainment area for this pollutant relative to the State standards. The Bay Area is an unclassified area for the federal PM_{10} standard.

No exceedances of the State or federal CO standards have been recorded at any of the region's monitoring stations since 1991. The Bay Area is currently considered a maintenance area for State and federal CO standards.

(2) Air Quality Monitoring Results. Pollutant monitoring results for the years 2012 to 2014 (which is the most current data available) at the 2975 Treat Boulevard ambient air quality monitoring station in Concord (the closest monitoring station to the project site), shown in Table 4.B-4, indicate that air quality near Concord has generally been good. As indicated in the monitoring results, only one violation of the State PM_{10} standard occurred during the 3-year period and no violations of the federal PM_{10} standard were recorded. $PM_{2.5}$ levels exceeded the federal standard once in 2013 but did not exceed standards in 2012 or 2014. One violation of the State 1-hour ozone standard, four violations of the State 8-hour ozone standard, and five violations of the federal 8-hour ozone standard occurred during the 3-year period at this monitoring station. The CO, SO_2, and NO_2 standards were not exceeded in this area during the 3-year period.

[12] Ibid.

[13] Concord, City of, 2007, op. cit.

Table 4.B-4: Ambient Air Quality at the Concord-2975 Treat Boulevard Monitoring Station

Pollutant	Standard	2012	2013	2014
Carbon Monoxide (CO)				
Maximum 1-hour concentration (ppm)		1.2	1.2	1.4
Number of days exceeded:	State: > 20 ppm	0	0	0
	Federal: > 35 ppm	0	0	0
Maximum 8-hour concentration (ppm)		0.8	1.0	1.1
Number of days exceeded:	State: > 9 ppm	0	0	0
	Federal: > 9 ppm	0	0	0
Ozone (O_3)				
Maximum 1-hour concentration (ppm)		0.093	0.074	0.095
Number of days exceeded:	State: > 0.09 ppm	0	0	1
Maximum 8-hour concentration (ppm)		0.086	0.062	0.081
Number of days exceeded:	State: > 0.07 ppm	2	0	2
	Federal: > 0.08 ppm	3	0	2
Coarse Particulates (PM_{10})				
Maximum 24-hour concentration ($\mu g/m^3$)		35.4	50.5	42.5
Number of days exceeded:	State: > 50 $\mu g/m^3$	0	1	0
	Federal: > 150 $\mu g/m^3$	0	0	0
Annual arithmetic average concentration ($\mu g/m^3$)		12.3	8.3	7.3
Exceeded for the year:	State: > 20 $\mu g/m^3$	No	No	No
	Federal: > 50 $\mu g/m^3$	No	No	No
Fine Particulates ($PM_{2.5}$)				
Maximum 24-hour concentration ($\mu g/m^3$)		32.2	36.2	30.6
Number of days exceeded:	Federal: > 35 $\mu g/m^3$	0	1	0
Annual arithmetic average concentration ($\mu g/m^3$)		6.6	7.6	6.7
Exceeded for the year:	State: > 12 $\mu g/m^3$	No	No	No
	Federal: > 12 $\mu g/m^3$	No	No	No
Nitrogen Dioxide (NO_2)				
Maximum 1-hour concentration (ppm)		0.039	0.044	0.048
Number of days exceeded:	State: > 0.250 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.008	0.009	0.008
Exceeded for the year:	Federal: > 0.053 ppm	No	No	No
Sulfur Dioxide (SO_2)				
Maximum 1-hour concentration (ppm)		0.008	0.011	0.029
Number of days exceeded:	State: > 0.25 ppm	0	0	0
Maximum 3-hour concentration (ppm)		ND	ND	ND
Number of days exceeded:	Federal: > 0.50 ppm	ND	ND	ND
Maximum 24-hour concentration (ppm)		0.003	0.002	0.004
Number of days exceeded:	State: > 0.04 ppm	0	0	0
	Federal: > 0.14 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.003	0.004	0.004
Exceeded for the year:	Federal: > 0.030 ppm	No	No	ND

ppm = parts per million
$\mu g/m^3$ = micrograms per cubic meter
ND = No data. There was insufficient (or no) data to determine the value.

Source: ARB and USEPA, 2015.

e. Air Quality Issues. Five key air quality issues – CO hotspots, vehicle emissions, fugitive dust, odors, and construction equipment exhaust – are described below.

(1) Local Carbon Monoxide Hotspots. Local air quality is most affected by CO emissions from motor vehicles. CO is typically the pollutant of greatest concern because it is created in abundance by motor vehicles and it does not readily disperse into the air. Because CO does not readily disperse, areas of vehicle congestion can create "pockets" of high CO concentration, called "hotspots." These pockets have the potential to exceed the State 1-hour standard of 20 ppm and/or the 8-hour standard of 9.0 ppm.

While CO transport is limited, it does disperse over time and 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 affecting local sensitive receptors (e.g., residents, schoolchildren, the elderly, and hospital patients). 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 concentrations, air quality modeling is recommended to determine a project's effect on local CO levels.

(2) Vehicle Emissions. Long-term air emission impacts are those associated with changes in automobile travel within the City. Mobile source emissions result from vehicle trips associated with increased vehicular travel. As is true throughout much of the United States, 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 are continually seeking ways to minimize the air quality impacts of growth and development in order to avoid further exceedances of the standards.

The BAAQMD has developed Transportation Control Measures to reduce vehicle emissions and promote public transportation and bicycle use. Strategies to reduce vehicle emissions include construction of complete streets in order to accommodate all modes of travel and meet mobility needs of all travelers including pedestrians, bicyclists, transit users, and motorists among others. In addition, sustainable transportation reduces the consumption of non-renewable resources and air pollutant emissions by increasing connectivity, encouraging the use of low-emission vehicles and carpools, vanpools, and shuttles. Reducing peak hour traffic reduces idling emissions associated with crowded roadways, improves safety for bicyclists and pedestrians and promotes the use of alternative transportation, thus reducing vehicle emissions.

(3) Fugitive Dust. Fugitive dust emissions are generally associated with demolition, land clearing, exposure of soils to the air, and cut and fill operations. Dust generated during construction varies substantially on a project-by-project basis, depending on the level of activity, the specific operations, and weather conditions. The ARB 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. A number of feasible control measures can be reasonably implemented to significantly reduce particulate emissions from construction. From the BAAQMD's perspective, if all of the control measures from its *CEQA Air Quality Guidelines* (depending on the size of the project) are implemented, particulate air pollution from construction activities would be considered a less-than-significant impact.

(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. Examples of land uses that have the potential to generate considerable odors include wastewater treatment plants, landfills, confined animal facilities, composting stations, food manufacturing plants, refineries, and chemical plants. While sources that generate objectionable odors must comply with air quality regulations, the public's sensitivity to locally produced odors often exceeds regulatory thresholds. Significant sources of odors are generally identified based on complaint histories received and compiled by the BAAQMD.

(5) Construction Equipment Exhaust. Construction activities cause combustion emissions from utility engines, heavy-duty construction vehicles, equipment hauling materials to and from construction sites, and motor vehicles transporting construction crews. Exhaust emissions from construction activities vary daily as construction activity levels change. The use of construction equipment results in localized exhaust emissions.

2. Impacts and Mitigation Measures

The following section presents a discussion of the impacts related to air quality that could result from implementation of the proposed project. The section begins with the criteria of significance and establishes the thresholds to determine if an impact is significant. The latter part of this section presents the impacts associated with implementation of the proposed project and the recommended feasible mitigation measures, if required.

a. Criteria of Significance. Numerous air quality modeling tools are available to assess air quality impacts of projects; however, certain air districts such as the BAAQMD have created guidelines and requirements to conduct air quality analysis. The analysis of air quality impacts for the proposed project follow the BAAQMD's *CEQA Air Quality Guidelines*.[14]

In June 2010, the BAAQMD adopted updated draft California Environmental Quality Act (CEQA) Air Quality Guidelines and finalized them in May 2011. These guidelines superseded previously adopted agency air quality guidelines of 1999 and were intended to advise lead agencies on how to evaluate potential air quality impacts.

In late 2010, the Building Industry Association filed a lawsuit in Alameda Superior Court, challenging BAAQMD's CEQA Guidelines on the grounds that the agency did not comply with CEQA. On March 5, 2012, the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the thresholds of significance in the BAAQMD *CEQA Air Quality Guidelines*. The court did not determine whether the thresholds of significance were valid on their merits, but found that the adoption of the thresholds was a project under CEQA. The court issued a writ of mandate ordering the BAAQMD to set aside the thresholds and cease dissemination of them until the BAAQMD complied with CEQA. In May 2012, the BAAQMD filed an appeal of the court's decision. In August 2013 the First District Court of Appeal overturned the trial court and held that the thresholds of significance were not subject to CEQA review. The Court of Appeal's decision was appealed to the California Supreme Court, which granted limited review.

[14] Bay Area Air Quality Management District, 2011, op. cit.

On December 21, 2015, the California Supreme Court rejected the BAAQMD's requirement for a so-called "reverse CEQA" analysis and concluded that CEQA does not generally require a lead agency to consider the effects of existing environmental conditions on a proposed project's future residents. Rather, CEQA requires the evaluation of a project's effects on the environment.

In terms of the appropriate thresholds to utilize, local agencies have a duty to evaluate impacts related to air quality and greenhouse gas emissions. In addition, CEQA grants local agencies broad discretion to develop their own thresholds of significance, or to rely on thresholds previously adopted or recommended by other public agencies or experts so long as they are supported by substantial evidence.[15] The BAAQMD's approach to developing a quantitative threshold of significance for greenhouse gas emissions was to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation and policy adopted to reduce Statewide greenhouse gas emissions. According to the BAAQMD *CEQA Air Quality Guidelines*, if a project would generate greenhouse gas emissions above the threshold level, it contributes substantially to a cumulative impact, and the impact would be considered significant. Upon thorough review of the scientific basis behind the thresholds, the City has determined there is substantial evidence that support continued use of the 2011 BAAQMD *CEQA Air Quality Guidelines* and the significance thresholds contained therein. Therefore, the thresholds were incorporated into this report for purposes of identifying significant air quality impacts.

Additionally, the City's General Plan Policy S-1.1.5 would require the project to coordinate, as appropriate, with the BAAQMD when addressing air quality issues.
Consistent with guidance from the BAAQMD and Appendix G of the CEQA Guidelines, the proposed project would have a significant impact on the environment related to air quality if it would:

- Conflict with or obstruct implementation of the current Air Quality Plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation by:
  - Contributing to CO concentrations exceeding the State ambient air quality standards;
  - Generating average daily construction emissions of ROG, NO_x or $PM_{2.5}$ greater than 54 pounds per day or PM_{10} exhaust emissions greater than 82 pounds per day; or
  - Generating operational emissions of ROG, NO_x or $PM_{2.5}$ of greater than 10 tons per year or 54 pounds per day, or PM_{10} emissions greater than 15 tons per year or 82 pounds per day.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors or the general public to substantial pollutant concentrations by:
  - Individually exposing sensitive receptors (such as residential areas) to toxic air contaminants in excess of the following thresholds:
    - Increased cancer risk greater than 10.0 in one million;
    - Increased non-cancer risk of greater than 1.0 on the hazard index (chronic or acute); or

[15] CEQA 2014 Guidelines Section 21082; *CEQA Guidelines* Sections 15064.7 and 15064.4 (addressing GHG impacts).

    - Ambient $PM_{2.5}$ increase greater than 0.3 $\mu g/m^3$ annual average.
  - Cumulatively exposing sensitive receptors to toxic air contaminants in excess of the following thresholds:
    - Increased cancer risk greater than 100.0 in one million;
    - Increased non-cancer risk of greater than 10.0 on the hazard index (chronic); or
    - Ambient $PM_{2.5}$ increase greater than 0.8 $\mu g/m^3$ annual average.
- Create objectionable odors affecting a substantial number of people.

The emission thresholds were established based on the attainment status of the air basin for specific criteria pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety according to the USEPA, these emission thresholds are regarded as protective.

b. Less-than-Significant Impacts. A discussion of less-than-significant impacts of the proposed project follows.

(1) Conflict with Current Air Quality Plans. The applicable air quality plan is the BAAQMD's 2010 Clean Air Plan, adopted on September 15, 2010. The Clean Air Plan is a comprehensive plan to improve Bay Area air quality and protect public health. The Clean Air Plan defines a control strategy to reduce emissions and reduce ambient concentrations of air pollutants; safeguard public health by reducing exposure to air pollutants that pose the greatest health risk, with an emphasis on protecting the communities most heavily affected by air pollution; and reduce greenhouse gas emissions to protect the climate. Consistency with the Clean Air Plan can be determined if the project: 1) supports the goals of the Clean Air Plan; 2) includes applicable control measures from the Clean Air Plan; and 3) does not disrupt or hinder implementation of any control measures from the Clean Air Plan.

Clean Air Plan Goals. The primary goals of the 2010 Bay Area Clean Air Plan are to: attain air quality standards; reduce population exposure and protect public health in the Bay Area; and reduce greenhouse gas emissions and protect climate.

The BAAQMD has established significance thresholds for cumulative impacts of project construction (including demolition) and operation. A project's exceedance of these thresholds would have an adverse impact on the region's attainment of air quality standards. The health and hazards thresholds were established to help protect public health. As discussed below, construction of the proposed project would result in less-than-significant construction and operational emission impacts. Therefore, the proposed project would not conflict with the Clean Air Plan goals.

Clean Air Plan Control Measures. The control strategies of the 2010 Clean Air Plan include measures in the following categories: Stationary Source Measures, Mobile Source Measures, and Transportation Control Measures. The latest Clean Air Plan also identifies two additional subcategories of control measures: the Land Use and Local Impacts Measures and the Energy and Climate Measures. Stationary Source Measures in the Clean Air Plan such as those implemented to control emissions from metal melting facilities, cement kilns, refineries, and glass furnaces are not

applicable to the proposed project. Therefore, consistency with the Clean Air Plan Stationary Source Measures is not evaluated further in this EIR.

Transportation and Mobile Source Control Measures. The BAAQMD identifies control measures as part of the Clean Air Plan to reduce ozone precursor emissions from stationary, area, mobile, and transportation sources. The transportation control measures are designed to reduce emissions from motor vehicles by reducing vehicle trips and vehicle miles traveled (VMT) in addition to vehicle idling and traffic congestion. The project site is located in a predominantly commercial area near major transportation corridors and transit, on an underutilized site that currently has outmoded office buildings, parking lots, and related improvements. The project would redevelop the site with a commercial shopping center that is consistent with the General Plan land use designation and similar to other commercial uses in the vicinity. The proposed project would not necessarily significantly reduce vehicle trips or VMT. However, the proposed project would include facilities to support alternative transportation including access to transit and bicycle facilities. The project would provide short-term bicycle parking for customers and long-term bicycle parking for employees. Providing bicycle access and bicycle facilities would help to reduce vehicle trips generated by the project and would be consistent with the Clean Air Plan. The project would also implement a Transportation Demand Management Plan (as discussed more fully in Chapter L, Transportation and Circulation, in this Draft EIR). In general the project would not conflict the BAAQMD's initiatives to reduce driving and increase the use of alternate means of transportation. Therefore, the project would not conflict with the identified Transportation and Mobile Source Control Measures of the Clean Air Plan.

Land Use and Local Impacts Measures. The Clean Air Plan includes Land Use and Local Impacts Measures to achieve the following: promote land use patterns, policies, and infrastructure investments that support mixed-use, transit-oriented development to reduce motor vehicle travel and emissions; and ensure that planned growth is focused in a way that protects people from exposure to air pollution from stationary and mobile sources of emissions. The Land Use Measures identified by the BAAQMD, such as transportation pricing reform and value pricing strategies, are not specifically applicable to the proposed project as they relate to actions the BAAQMD will take to reduce impacts from goods movement and health risks in affected communities. The project would locate commercial uses away from residential uses and therefore would not expose residential uses to air pollution from stationary and mobile sources of emissions as a result of the proposed project. The Land Use and Local Impacts Measures are measures the BAAQMD would implement through policies and regulations that are not specifically applicable to the project. Implementation of the project would not hinder the BAAQMD from implementing the strategies; therefore the proposed project would not conflict with any of the Land Use and Local Impacts Measures of the Clean Air Plan.

Energy and Climate Control Measures. The Clean Air Plan also includes Energy and Climate Control Measures designed to reduce ambient concentrations of criteria pollutants and reduce emissions of CO_2. Implementation of these measures is intended to promote energy conservation and efficiency in buildings throughout the community, promote renewable forms of energy production, reduce the "urban heat island" effect by increasing reflectivity of roofs and parking lots, and promote the planting of (low-VOC-emitting) trees to reduce biogenic emissions, lower air temperatures, provide shade, and absorb air pollutants. The measures include voluntary approaches to reduce the heat island effect by increasing shading in urban and suburban areas through the planting of trees. The

proposed project would include paved area that could result in a heating effect. In addition, with development of the proposed project, all of the existing on-site trees would be removed. However, consistent with City requirements, the proposed project would include landscaping on approximately 20 percent of the site, consistent with City development standards. The project is also anticipated to include energy conservation features in accordance with applicable updated Title 24 standards, which may include, for example, such items listed below:

- Cool roof;
- High efficiency windows;
- High efficiency domestic hot water heaters;
- LED lights;
- Day light sensors that dim when natural light is available;
- Sky lights;
- Exterior and interior lights that shut off after hours;
- Occupancy sensors in offices, storage rooms, and bathrooms;
- HVAC systems with alarms that notify operations staff if economizer is faulty; and
- Locked and programmed thermostats that shut off conditioned air after hours.

The proposed project's impact with respect to greenhouse gas emissions and energy impacts is discussed in Section 4.F, Greenhouse Gas Emissions. As discussed in Section 4.F, the proposed project would be consistent with the applicable provisions of the City's Citywide Climate Action Plan and thus would not result in any significant impacts associated with an increase in greenhouse gas emissions or conflict with measures adopted for the purpose of reducing such emissions. Therefore the project would not conflict with the Energy and Climate Control Measures.

Clean Air Plan Implementation. Implementation of the proposed project would implement the applicable measures outlined in the Clean Air Plan, including Energy and Climate Control Measures. Therefore, the project would not disrupt or hinder implementation of a control measure from the Clean Air Plan and this impact would be less than significant.

(2) Violate Any Air Quality Standards. According to the BAAQMD CEQA Guidelines, to meet air quality standards for operational-related criteria air pollutant and air precursor impacts, the project must not:

- Contribute to CO concentrations exceeding the State ambient air quality standards;
- Generate average daily construction emissions of ROG, NOx or PM2.5 (exhaust) greater than 54 pounds per day or PM10 exhaust emissions greater than 82 pounds per day; or
- Generate operational emissions of ROG, NOx or PM2.5 of greater than 10 tons per year or 54 pounds per day or PM10 emissions greater than 15 tons per year or 82 pounds per day.

The following section describes the project's CO impacts and construction- and operation-related air quality impacts. The proposed project includes up to 375,000 square feet of commercial uses. The discussion for localized CO impacts and operational emissions analyzes the impact of the proposed

project. The conclusions are summarized at the end of each subsection. As discussed, impacts would be less than significant for localized CO emissions and operational emissions. Impacts associated with construction-period emissions would be less than significant with implementation of recommended mitigation measures.

Localized CO Impacts. Emissions and ambient concentrations of CO have decreased dramatically in the Bay Area with the introduction of the catalytic converter in 1975. No exceedances of the State or federal CO standards have been recorded at Bay Area monitoring stations since 1991. The BAAQMD's 2010 CEQA Guidelines include recommended methodologies for quantifying concentrations of localized CO levels for proposed transportation projects. A screening level analysis using guidance from the BAAQMD CEQA Guidelines was performed to determine impacts of the project's concentrations. The screening methodology provides a conservative indication of whether the implementation of a proposed project would result in significant CO emissions. According to the BAAQMD's CEQA Guidelines, a proposed project would result in a less-than-significant impact to localized CO concentrations if the following screening criteria are met:

- The project is consistent with an applicable congestion management program established by the County congestion management agency for designated roads or highways, and the regional transportation plan and local congestion management agency plans.
- Project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The project would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, or below-grade roadway).

As discussed in Section 4.L, Transportation and Circulation, implementation of the proposed project would conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the intersections in the project site vicinity. The project would result in exceedances of level of service impacts at several intersections and roadway segments that would require mitigation such as modifying intersection design and signal timing adjustments, as discussed in Section 4.L, Transportation and Circulation. However, the project site is not located in an area where vertical or horizontal mixing of air is substantially limited. The project's net trip generation would be 491 a.m. peak hour trips, 1,032 p.m. peak hour trips, and 1,994 Saturday peak hour trips[16]; therefore, the project's contribution to peak hour traffic volumes at intersections in the vicinity of the project site would be well below 44,000 vehicles per hour. The intersection with the highest traffic volume adjacent to the site has peak hour traffic of 5,839 trips, which is well below 44,000 which is the volume of traffic that could potentially cause an exceedance of the CO standard. Therefore, the proposed project would not result in localized CO concentrations that exceed State or federal standards and this impact would be less than significant.

Operational Emissions – Regional Emissions Analysis. Long-term air emission impacts are those associated with area sources and mobile sources involving any change related to the proposed project. In addition to the short-term construction emissions, the project would also generate long-term air emissions, such as those associated with changes in permanent use of the project site. These long-term emissions are primarily mobile source emissions that would result from vehicle trips

[16] Kittelson & Associates, Inc., 2016. Transportation Impact Study, Table 11: Project Trip Generation. April.

associated with the proposed project. Area sources, such as natural gas heaters, landscape equipment, and use of consumer products, would also result in pollutant emissions.

PM_{10} emissions result from running exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. Entrainment of PM_{10} occurs when vehicle tires pulverize small rocks and pavement and the vehicle wakes generate airborne dust. The contribution of tire and brake wear is small compared to the other PM emission processes. Gasoline-powered engines have small rates of particulate matter emissions compared with diesel-powered vehicles. Since much of the project traffic fleet would be made up of light-duty gasoline-powered vehicles (customer and employee vehicles), a majority of the PM_{10} emissions would result from entrainment of roadway dust from vehicle travel.

Energy source emissions result from activities in buildings for which electricity and natural gas are used (non-hearth). The quantity of emissions is the product of usage intensity (i.e., the amount of electricity or natural gas) and the emission factor of the fuel source. Major sources of energy demand include building mechanical systems, such as heating and air conditioning, lighting, and plug-in electronics, such as refrigerators or cooking equipment. Greater building or appliance efficiency reduces the amount of energy for a given activity and thus lowers the resultant emissions. The emission factor is determined by the fuel source, with cleaner energy sources, like renewable energy, producing fewer emissions than conventional sources.

Area source emissions associated with the project would include emissions from activities such as water heating and the use of landscaping equipment.

Emission estimates for the project were calculated using the California Emissions Estimator Model version 2013.2.2 (CalEEMod). Model results are shown in Table 4.B-5. Trip generation rates for the project were based on the project's traffic impact analysis, which estimates the proposed project would generate approximately 12,724 total trips (11,766 net new trips) per weekday and 16,966 total trips (16,617 net new trips) per weekend day.[17]

The project site currently consists of approximately 619,000 square feet of office buildings and related improvements. At full occupancy, the office buildings at the project site housed over 2,500 employees, according to information provided to the Applicant from Chevron. As of the commencement of the environmental review in January 2016, approximately 400 employees were still working on-site, according to Chevron. Emissions generated by the project site's current occupancy were estimated using CalEEMod to determine baseline conditions. These emissions were deducted from the proposed project's total emissions to estimate the net new project emissions[18].

Emissions associated with project operational trip generation, energy, and area sources are identified in Table 4.B-5 for ROG, NO_x, PM_{10}, and $PM_{2.5}$. The primary emissions associated with the project are regional in nature, meaning that air pollutants are rapidly dispersed upon release or, in the case of vehicle emissions associated with the project, emissions are released in other areas of the air basin.

[17] Kittelson & Associates, Inc., 2016. *The Veranda Shopping Center TIS*. April.

[18] For purposes of calculating operational emissions from energy use of the buildings, it was assumed that 16 percent (2,500 employees/400 employees), or 99,000 square feet, of the existing floor area were in use by employees. Vehicle emissions of the existing employees were estimated using traffic counts collected at the site driveways in January 2016.

Because the resulting emissions are dispersed rapidly and contribute only a small fraction of the region's air pollution, air quality in the immediate vicinity of the project site would not substantially change compared to existing conditions or the air quality monitoring data reported in Table 4.B-4.

Table 4.B-5: Project Operational Emissions

Emissions in Pounds Per Day				
	ROG	**NO_x**	**PM_{10}**	**$PM_{2.5}$**
Area Source Emissions	9.1	0.0	0.0	0.0
Energy Source Emissions	0.1	0.9	0.1	0.1
Mobile Source Emissions	54.3	90.1	49.5	13.9
Total Emissions	**63.5**	**91.0**	**49.6**	**14.0**
Existing Office-Space Use Emissions	-45.0	-51.4	-6.0	-2.2
Net New Project Emissions	**18.5**	**39.6**	**43.6**	**11.8**
BAAQMD Significance Threshold	54.0	54.0	82.0	54.0
Exceed?	**No**	**No**	**No**	**No**
Emissions in Tons Per Year				
Area Source Emissions	1.7	0.0	0.0	0.0
Energy Source Emissions	0.0	0.2	0.0	0.0
Mobile Source Emissions	7.4	12.9	7.1	2.0
Total Emissions	**9.1**	**13.1**	**7.1**	**2.0**
Existing Office-Space Use Emissions	-5.9	-6.7	-0.8	-0.3
Net New Project Emissions	**3.2**	**6.4**	**6.2**	**1.7**
BAAQMD Significance Threshold	10.0	10.0	15.0	10.0
Exceed?	**No**	**No**	**No**	**No**

Source: LSA, Associates, Inc., March 2016.

The results shown in Table 4.B-5 indicate the project would not exceed the significance criteria for ROG, NO_x, PM_{10}, or $PM_{2.5}$; therefore, the proposed project would not have a significant effect on regional air quality and mitigation would not be required.

(3) Substantial Pollutant Concentrations. According to the BAAQMD, significant impact would occur if the project would individually expose sensitive receptors located within a 1,000-foot radius of the project site to TACs resulting in an increased cancer risk greater than 10.0 in one million, increased non-cancer risk of greater than 1.0 on the hazard index (chronic or acute), or an annual average ambient $PM_{2.5}$ increase greater than 0.3 $\mu g/m^3$.[19] A significant cumulative impact would occur if the project, in combination with other projects, located within a 1,000-foot radius of the project site would expose sensitive receptors to TACs resulting in an increased cancer risk greater than 100.0 in one million, an increased non-cancer risk of greater than 10.0 on the hazard index (chronic), or an ambient $PM_{2.5}$ increase greater than 0.8 $\mu g/m^3$ on an annual average basis.[20]
The closest sensitive receptors are residential uses located approximately 1,000 feet west of the project site. A senior housing project is also currently under construction on Civic Court, approximately 1,000 feet east of the project site. Demolition and construction activities associated with the project would generate airborne particulates and fugitive dust, as well as a small quantity of

[19] Bay Area Air Quality Management District, 2011, op. cit.

[20] Ibid.

pollutants associated with the use of construction equipment (e.g., diesel-fueled vehicles and equipment) on a short-term basis. As shown in Table 4.B-6, the project construction would generate PM_{10} and $PM_{2.5}$ emissions that are well below the BAAQMD's significance criteria. Additionally, implementation of the best management practices required in Mitigation Measure AIR-1 would reduce construction-related emissions to a less-than-significant level, thus minimizing possible exposure of these sensitive receptors to substantial pollutant concentrations during construction. Due to the distance of the receptors from the project construction areas, the project construction emissions would not impact sensitive receptors.

The proposed project would include commercial uses that would utilize loading docks and would result in delivery activities. These activities could generate toxic air contaminant emissions from idling diesel engines. As discussed above, a significant impact would occur if the project would expose sensitive receptors located within a 1,000-foot radius of the project site to levels that exceed the thresholds of significance, as described above. The nearest sensitive receptors are located approximately 1,000 feet from the proposed project, and, therefore, sensitive receptors would not be exposed to substantial pollutant concentrations that would cause harmful effects.

(4) Odor Emissions. During construction, the various diesel powered vehicles and equipment in use on-site would create localized odors. These odors would be temporary and are not likely to be noticeable for extended periods of time beyond the project site. The potential for diesel odor impacts is therefore considered less than significant.

Odor impacts could result from siting a new odor source near existing sensitive receptors or siting a new sensitive receptor near an existing odor source. The BAAQMD considers a significant odor impact as a substantial number of odor complaints, specifically, more than five confirmed complaints per year averaged over the past three years. As discussed above, examples of land uses that have the potential to generate considerable odors include wastewater treatment plants, landfills, confined animal facilities, composting stations, food manufacturing plants, refineries, and chemical plants.

The project would not be located in an area with existing objectionable odors. In addition, the proposed uses that would be developed within the project site are not expected to produce any offensive odors that would result in frequent odor complaints. The only major source of odor related to the proposed project would be the proposed restaurant component of the project. The City's Municipal Code addresses odors in Chapter 18.150, General Development Standards, and in Chapter 18.200, Standards for Specific Uses. Chapter 18.150 establishes standards for all new and existing land uses to minimize operational impacts and promote compatibility with adjoining areas and uses. In addition, Chapter 18.15 states that all activities, processes, and uses shall not produce obnoxious or objectionable odors or fumes, perceptible without instruments, beyond the property line of the site. Chapter 18.200 states that restaurants shall provide measures including a scrubber, carbon filter, or similar equipment on the roof vent to control and to reduce odors to acceptable levels.

Any odors from a potential restaurant use would not have a significant impact on sensitive receptors due to odor dispersion since the nearest sensitive receptors are located over 1,000 feet from the proposed project. In addition, the project would be required to comply with Chapter 18.150, General Development Standards, and in Chapter 18.200, Standards for Specific Uses of the City's Municipal Code. Therefore the project would not create objectionable odors affecting a substantial number of people and would have a less-than-significant impact in terms of odors.

(5) Cumulative Impacts. CEQA defines a cumulative impact as two or more individual effects, which when considered together, are considerable or which compound or increase other environmental impacts. According to the BAAQMD, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. Therefore, if daily average or annual emissions of operational-related criteria air pollutants exceed any applicable threshold established by the BAAQMD, the proposed project would result in a cumulatively significant impact. As shown in Table 4.B-5, implementation of the proposed project would not generate significant operational emissions. As stated in the project-specific air quality impacts discussion above, the proposed project would not result in individually significant impacts and therefore the project would not result in a cumulatively considerable contribution to regional air quality impacts.

c. Significant Impacts. This section discusses potentially significant air quality impacts that could result from the proposed project.

(1) Construction Period Impacts. During demolition and construction, short-term degradation of air quality may occur due to the release of particulate matter emissions (i.e., fugitive dust) generated by demolition, excavation, grading, hauling, and other activities. Emissions from construction equipment are also anticipated and would include CO, NO_x, ROG, directly emitted particulate matter ($PM_{2.5}$ and PM_{10}), and TACs such as diesel exhaust particulate matter.

<u>Impact AIR-1</u>: Demolition and construction period activities could generate significant dust, exhaust, and organic emissions. (S)

Site preparation and project construction would involve building demolition, site clearing, excavation, grading, and building activities. Construction-related effects on air quality from the proposed project would be greatest during the site preparation phase because most engine emissions are associated with the building demolition, excavation, handling, and transport of soils on the site. If not properly controlled, these activities would temporarily generate PM_{10}, $PM_{2.5}$, and to a lesser extent CO, SO_2, NO_x, and volatile organic compounds. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, becoming an additional source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions would depend on soil moisture, the silt content of soil, wind speed, and the amount of operating equipment. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site. These emissions would be temporary and limited to the immediate area surrounding the construction site.

The BAAQMD has established standard measures for reducing fugitive dust emissions ($PM_{2.5}$ and PM_{10}) including the use of water or other soil stabilizers. With the implementation of standard construction measures such as frequent watering (e.g., two times per day at a minimum), fugitive dust emissions from construction activities would help ensure that the project would not result in adverse air quality impacts.[21] Construction-period impacts associated with development of the proposed

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

project are discussed below. As discussed, with implementation of recommended mitigation measures, these impacts would be less than significant.

The total project site is approximately 30 acres. Demolition of the existing office buildings would occur for approximately 3 to 4 months. The combined period for both demolition and construction of the proposed project is estimated to require approximately 12 to 18 months. After demolition, construction is anticipated to commence in approximately September 2016 and end in approximately September 2017. The project would be constructed in a single phase. Construction and grading equipment is expected to include the use of earthmovers, backhoes, rollers, and compactors. Construction of the proposed project has the potential to generate air pollutant emissions that could violate air quality standards, as discussed below.

Construction emissions for the proposed project were analyzed using CalEEMod. Precise details of construction activities are unknown at this time; therefore, default assumptions (e.g., construction fleet activities) from CalEEMod were used. For purposes of this analysis, the construction schedule for all improvements was assumed to be approximately 15 months. Construction emissions were estimated for the project using CalEEMod, which is recommended by the BAAQMD. Construction-related emissions are presented in Table 4.B-6. CalEEMod output sheets are included in Appendix C.

As shown in Table 4.B-6, construction emissions of ozone precursors (ROG and NO_x) and particulate matter would not exceed the BAAQMD's threshold for average daily construction emissions.

Table 4.B-6: Construction Emissions Estimates

Source	Pollutant Emissions (Pounds/Day)			
	ROG	**NO_x**	**Exhaust $PM_{2.5}$**	**Exhaust PM_{10}**
Average Daily Emissions	**33.2**	**35.5**	**1.8**	**1.9**
BAAQMD Thresholds	54.0	54.0	54.0	82.0
Exceed Threshold?	**No**	**No**	**No**	**No**

Source: LSA Associates, Inc., March 2016.

The effects of construction activities would be increased dust and locally elevated levels of PM_{10} downwind of construction activity. Although ROG, NO_x, and exhaust emissions would not exceed the established thresholds, the BAAQMD requires the implementation of Basic Construction Mitigation Measures to ensure construction impacts from fugitive emission sources are minimized to the extent feasible. Implementation of the City's applicable standard conditions related to dust and erosion control, as well as BAAQMD's Basic Construction Mitigation Measures specified in Mitigation Measure AIR-1, below, would reduce diesel PM exhaust emissions as well as construction dust (PM_{10} and $PM_{2.5}$) impacts to a less-than-significant level.

> Mitigation Measure AIR-1: Consistent with guidance from the BAAQMD, the project applicant shall ensure the following Basic Construction Mitigation Measures are implemented through all construction contracts and specifications for the project:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- 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.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage on this measure shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
- A publicly visible sign shall be posted showing the telephone number and name of the person to contact at the City of Concord regarding dust complaints. This person shall respond and take corrective action within 48 hours. The air district's phone number shall also be visible to ensure compliance with applicable regulations. (LTS)

Implementation of Mitigation Measure AIR-1 would ensure the project's compliance with General Plan Policy S-1.1.7 and would ensure that fugitive dust construction period air quality impacts remain less than significant.

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C. BIOLOGICAL RESOURCES

This section presents information on biological resources found at and in the vicinity of the project site. The setting section of this chapter describes the habitats and biological resources on the site and in the vicinity. Information in this section is used to evaluate the potential impacts of the project with respect to the significance criteria set forth in the Impacts and Mitigation Measures section.

1. Setting

The following discussion sets forth the biological setting found on the project site and in the vicinity. Included in this section are the methods used to analyze biological resources, applicable laws and regulations, and the existing site conditions.

a. Methods. The California Natural Diversity Database (CNDDB),[1] California Native Plant Society (CNPS) On-Line Electronic Inventory of Rare and Endangered Vascular Plants of California,[2] and the U.S. Fish and Wildlife Service (USFWS) online list of federally listed species[3] were searched to locate records of special-status species and/or sensitive communities/habitats in the general vicinity of Concord, generally defined as including the project site and a 5-mile radius, as shown in Figure 4.C-1.

A field reconnaissance survey of the project site was conducted by LSA on January 14, 2016, which included walking the site, documenting vegetation communities (landscaping) and wildlife present, searching for sensitive habitats, as well as searching for evidence of special-status species or habitats that could support such species, including a cursory visual inspection of the building exterior. During the field survey, LSA also conducted a peer review of the project arborist report prepared by HortScience, Inc.[4] Plants and animals observed during the field reconnaissance survey were recorded in field notes. Nomenclature for special-status plant and wildlife species follows the CNDDB. The scientific and common names for the plant and animal species used in this report are from the following sources: plants, Baldwin et al.[5]; amphibians and reptiles, Crother[6]; birds, American Ornithologists' Union and supplements[7], mammals, Baker et al.[8] and special-status animal species, California Department of Fish and Wildlife's (CDFW's) Special Animals List.[9]

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[1] California Department of Fish and Wildlife (CDFW). 2016a. California Natural Diversity Database (CNDDB). Documented special-status species occurrences within 5 miles of the project site. Wildlife and Habitat Data Analysis Branch, California Department of Fish and Wildlife, Sacramento. Accessed January 1.

[2] California Native Plant Society (CNPS). 2016. Inventory of Rare and Endangered Plants. Online edition v8-02. California Native Plant Society, Rare Plant Program, Sacramento, CA. Accessed February 5.

[3] U.S. Fish and Wildlife Service (USFWS). 2016. IPac Trust Resource Report. Project Name: CenterCal Commercial. Sacramento Fish and Wildlife Office, Sacramento, California. Accessed February 5.

[4] HortScience, Inc. 2016. Arborist Report, Chevron Facility. Prepared for Centercal Properties LLC, El Segundo, California by HortScience Inc., Pleasanton, California. April.

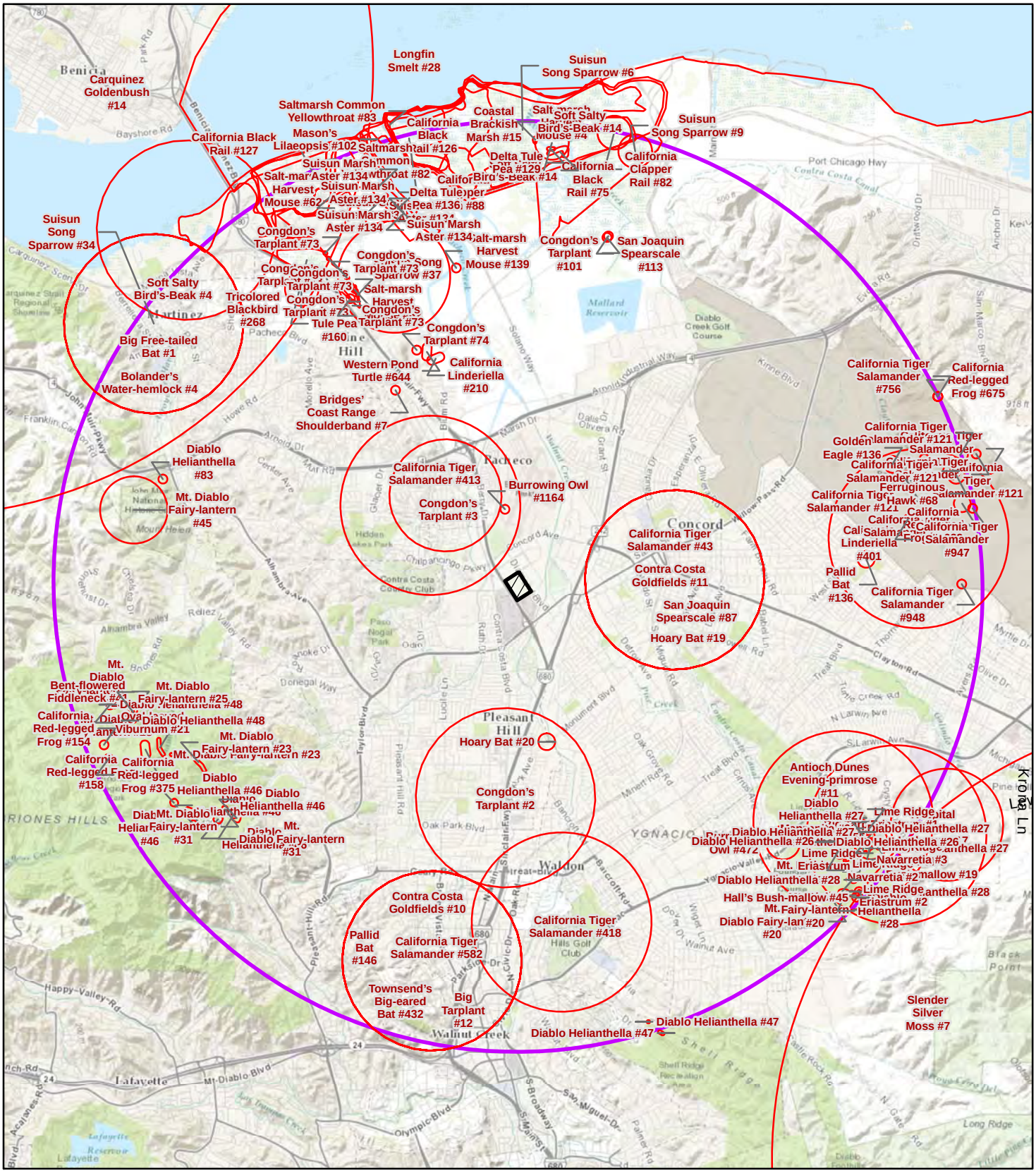
[5] Baldwin, B.G., et al. eds., 2012. *The Jepson Manual: Vascular Plants of California*, Second Edition. University of California Press, Berkeley.

[6] Crother, B.I., ed., 2012. Scientific and standard English names of amphibians and reptiles of North America north of Mexico. *Society for the Study of Amphibians and Reptiles (SSAR) Herpetological Circular 39* and supplements.

[7] American Ornithologists' Union, 1998. *Checklist of North American Birds* and supplements. Seventh Edition. American Ornithologists' Union, Washington, D.C.

[8] Baker, R.J., et al., 2003. *Revised checklist of North American mammals north of Mexico, 2003*. Museum of Texas Tech University Occasional Papers 229.

[9] California Department of Fish and Wildlife (CDFW). 2016b. Special Animals List, January 2016. Wildlife and Habitat Data Analysis Branch. California Natural Diversity Database. Periodic publication. 65 pp.



LSA

LEGEND

Project Site

FIGURE 4.C-1

0 0.75 1.5
MILES

SOURCE: ESRI World Topo Map (2016).

The Veranda Shopping Center
Concord, Contra Costa County, California

CNDDB Occurrences within 5 Miles

I:\CYR1502\GIS\Maps\CNDDB\Figure 4.C-1_CNDDB.mxd (4/15/2016)

b. Regulatory Context. Relevant laws and regulations concerning biological resources are discussed below.[10]

(1) Federal Endangered Species Act. The Federal Endangered Species Act (FESA) protects listed animal species from harm or take, which is broadly defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. Take can also include significant habitat modification or degradation that results in death or injury to a listed species by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering. An activity can be defined as take even if it is unintentional or accidental. Listed plant species are provided less protection than listed wildlife species. Listed plant species are legally protected from take under the FESA if they occur on federal lands or if the project requires a federal action, such as a Section 404 fill permit.

The USFWS has jurisdiction over federally listed threatened and endangered wildlife and plant species under the FESA. The USFWS also maintains lists of proposed species and candidate species. Species on these lists are not legally protected under the FESA, but may become listed in the near future and are often included in their review of a project.

(2) Federal Migratory Bird Treaty Act. The federal Migratory Bird Treaty Act (MBTA; 16 U.S.C., Sec. 703-712, Supp. I, 1989) prohibits the killing, possessing, or trading of migratory birds (listed in Title 50 of the Code of Federal Regulations, section 10.13), except as allowed in accordance with regulations prescribed by the Secretary of the Interior. The MBTA encompasses whole birds, parts of birds, and bird nests and eggs. Most native bird species are covered by this Act, including waterfowl, shorebirds, raptors, wading birds, and passerine birds (such as warblers, flycatchers, swallows, etc.).

(3) California Fish and Game Code. Sections 3503, 3503.5, 3505, 3511 and 3513 of the California Fish and Game Code (FGC) also protects birds by prohibiting the take, destruction, or possession of any bird, nest, or egg of any bird unless express authorization is obtained from California Department of Fish and Wildlife (CDFW). Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered a "take."

All raptors (that is, hawks, eagles, owls), their nests, eggs, and young are protected under FGC Section 3503.5. Additionally, "fully protected" birds, such as the white-tailed kite (*Elanus leucurus*) and golden eagle (*Aquila chrysaetos*), are protected under FGC Section 3511. "Fully protected" birds may not be taken or possessed (that is, kept in captivity) at any time.

(4) California Endangered Species Act. The California Endangered Species Act (CESA) prohibits the take of any plant or animal listed or proposed for listing as rare (plants only), threatened, or endangered. In accordance with the CESA, CDFW has jurisdiction over state-listed species (California Fish and Game Code Section 2070). Additionally, the CDFW maintains lists of "species of special concern" that are defined as species that appear to be vulnerable to extinction because of declining populations, limited ranges, and/or continuing threats.

[10] As explained more fully herein, given the already developed nature of the site and the highly urbanized setting, no jurisdictional waters are present on the project site. Accordingly, the regulatory framework and impact sections do not address this topic.

(5) California Environmental Quality Act. Section 15380(b) of the California Environmental Quality Act (CEQA) Guidelines provides that a species not listed on the federal or State lists of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definitions in FESA and CESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals. This section was included in the guidelines primarily to address situations in which a public agency is reviewing a project that may have a significant effect on a species that has not yet been listed by either the USFWS or CDFW.

(6) California Rare Plant Rank. Special-status plants in California are assigned to one of five "California Rare Plant Ranks" by a collaborative group of over 300 botanists in government, academia, non-governmental organizations, and the private sector. This effort is jointly managed by the CDFW and CNPS. The five California Rare Plant Ranks (CRPR) currently recognized by the CNDDB are:

- Rare Plant Rank 1A – presumed extinct in California.
- Rare Plant Rank 1B – rare, threatened, or endangered in California and elsewhere.
- Rare Plant Rank 2 – rare, threatened, or endangered in California but more common elsewhere.
- Rare Plant Rank 3 – a review list of plants about which more information is needed.
- Rare Plant Rank 4 – a watch list of plants of limited distribution.

All of the plant species on Lists 1A, 1B, and 2 meet the requirements of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (CESA) of the Fish and Game Code, and are eligible for State listing. Therefore, plants appearing on Lists 1A, 1B, or 2 are considered to meet CEQA's Section 15380 criteria and effects to these species would be considered "significant" for the purposes of CEQA.

(7) City of Concord General Plan. Concord General Plan policies related to biological resources are listed and discussed in Table 4.I-1 in Section 4.I, Land Use and Planning Policy.

(8) City of Concord Tree Ordinance. Concord Municipal Code Chapter 8.40, Trees and Shrubs, and Article VI, Division 3 of the Concord Development Code, Chapter 18.310, Tree Preservation and Protection, include standards for the preservation, protection, and removal of heritage and other protected trees. Chapter 18.310 includes regulations for the protection, preservation, maintenance, removal, and replacement of trees associated with proposals for construction and development (i.e., associated with a planning or building permit), such as the proposed project. Chapter 18.310 provides a uniform method for identifying and maintaining heritage and other protected trees. Chapter 8.40 applies more generally to tree protection, maintenance, and preservation on public property and on private property containing protected trees or designated heritage trees. Chapter 8.40 also aims to conserve scenic beauty, prevent erosion, and to protect against flood hazards.

"Heritage" trees are defined[11] as any tree or group of trees that have a relationship to an event of historical significance, or are of public interest, and have been officially designated by action of the Planning Commission as a heritage tree.

[11] CMC Section 8.40.020.

"Protected" trees are defined[12] 1) as any of the following listed native trees with a diameter of 12 inches or more as measured 54 inches above the ground (e.g., diameter at breast height) or a multi-stemmed native tree on the list below where the sum of all stem diameters is 12 inches or more as measured 54 inches above the ground: valley oak (*Quercus lobata*), blue oak (*Q. douglasii*), coast live oak (*Q. agrifolia*), California bay (*Umbellularia californica*), California buckeye (*Aesculus californica*), and California sycamore (*Platanus racemosa*); 2) Other trees (except those specifically listed as non-protected) with a diameter of 24 inches or more as measured 54 inches above the ground (e.g., diameter at breast height) or more or a multi-stemmed non-native tree where the sum of all stem diameters is 24 inches or more as measured 54 inches above the ground; 3) Any tree which has been previously designated as a heritage tree by Planning Commission resolution; 4) A tree required to be planted, relocated, or preserved as a condition of approval of a Tree Permit or other discretionary permit, and/or as environmental mitigation for a discretionary permit; and 5) A tree with a trunk diameter of 6 inches or more or one component trunk of a multi-stemmed tree with a diameter of 4 inches or more as measured 54 inches above the ground that is located within the structure setback of creeks or streams as defined in CMC 18.305.040(A).

Non-protected trees[13] include any member of the genus *Eucalyptus*, any member of the genus *Acacia*, any common palm tree (*Arecaceae*), Monterey pine (*Pinus radiata*), and any member of the genus *Ligustrum* (commonly referred to as privet), unless such tree has been specifically designated a heritage tree by action of the Planning Commission.

c. Existing Conditions. The approximately 30-acre project site currently contains office buildings, parking, landscaping, and other improvements developed as a regional office for the Chevron Corporation. The site is generally level, with the exception of landscaped berms around the site perimeter and landscaped areas around the buildings. Four buildings are located in the center of the project site with surface parking lots and landscaped courtyards adjacent to the buildings.

The project site is situated in a highly urban setting and is isolated from open space and sensitive habitats. Commercial and office uses surround the project site, including office and government buildings, retail stores, hotels, educational buildings, restaurants, and automobile shops. Interstate 680 (I-680) abuts the project site to the southwest, the Willows Shopping Center abuts the site to the southeast, and the Sunvalley Shopping Center, a large regional shopping mall, is located to the west of the freeway and southwest of the project site.

The Walnut Creek drainage channel is located as close as one-quarter mile east of the project site, east of and directly behind the Hilton Hotel and the Home Depot, and south of the Willows Shopping Center.

Landscaping, primarily consisting of turf and trees, covers approximately 19 percent of the project site. Mature trees are planted in landscape strips around the perimeter of the project site and along the main entrance driveway. Trees and landscaping are also planted adjacent to the on-site buildings and within the parking lots. A total of 795 trees were located on the site at the commencement of the environmental analysis. However, in late January 2016, 93 trees were removed along the freeway

[12] CMC Section 18.310.020.A.

[13] CMC Section 18.310.020.B.

frontage, including 3 protected trees. Currently, 702 trees exist on the project site, including 58 protected trees.[14] None of the existing trees are designated as heritage trees.

(1) Vegetation. The project site is virtually devoid of any native vegetation, except for ornamental vegetation planted as landscaping. The landscaped vegetation consists of 28 different tree species,[15] various ornamental shrubs, ivy (*Hedera* sp.), ice plant (*Carpobrotus* sp.), and turf. All of the trees appear to have been planted and only one of the tree species, California black walnut (*Juglans hindsii*), is native to the area. For the project arborist report, HortScience Inc. assessed 795 trees, representing the following 28 tree species:

Japanese maple	*Acer palmatum*
Norway maple	*Acer platanoides*
Marina madrone	*Arbutus* 'Marina'
European white birch	*Betula pendula*
Blue Atlas cedar	*Cedrus atlantica* 'Glauca'
Deodar cedar	*Cedrus deodara*
Eastern redbud	*Cercis canadensis*
Flowering dogwood	*Cornus florida*
Italian cypress	*Cupressus sempervirens*
River red gum	*Eucalyptus camaldulensis*
Red ironbark	*Eucalyptus sideroxylon*
Raywood ash	*Fraxinus angustifolia* 'Raywood'
Evergreen ash	*Fraxinus uhdei*
Modesto ash	*Fraxinus velutina* 'Modesto'
Honey locust	*Gleditsia triacanthos*
California black walnut	*Juglans hindsii*
Crape myrtle	*Lagerstroemia indica*
Canary Island pine	*Pinus canariensis*
Aleppo pine	*Pinus halepensis*
Monterey pine	*Pinus radiata*
Chinese pistache	*Pistacia chinensis*
Purpleleaf plum	*Prunus cerasifera*
Callery pear	*Pyrus calleryana*
Evergreen pear	*Pyrus kawakamii*
Holly oak	*Quercus ilex*
Red oak	*Quercus rubra*
Coast redwood	*Sequoia sempervirens*
Chinese elm	*Ulmus parvifolia*

[14] For purposes of a conservation analysis, this EIR evaluates potential impacts to a total of 795 trees (including 61 protected trees), since this was the number in place at the time environmental review commenced.

[15] HortScience, Inc. 2016. Arborist Report, Chevron Facility. Prepared for Centercal Properties LLC, El Segundo, California by HortScience Inc., Pleasanton, California. April.

(2) Wildlife Values. Due to its disturbed nature, surrounding urbanized development, and the lack of native vegetation communities, this site has very low habitat value for native wildlife. Wildlife on the project site is limited and is characterized by those species that occur in urban landscaping and are adapted to human-modified landscapes. The lack of suitable habitat onsite and the isolation of the site from open space areas due to surrounding urban development, including the proximity to the I-680 freeway, greatly reduce the likelihood for wildlife, especially special-status species, to enter and occupy the site. The Walnut Creek drainage channel, located approximately one-quarter mile to the east, is separated from the site by roads and developed property, and as such no habitat connection exists that would support a wildlife movement corridor from the drainage channel to the project site.

Wildlife observed on the project site during the field survey consisted of house finch (*Haemorhous mexicanus*) and American crow (*Corvus brachyrhynchos*). One inactive bird nest was observed on top of an intercom speaker, below the eaves of one of the office buildings. This nest was likely constructed and occupied by nesting house finches. Several squirrel nests, likely constructed by the non-native fox squirrel (*Sciurus niger*), were also observed in some of the trees on the site. Canada goose (*Branta canadensis*) droppings were observed in the turf, where geese appeared to have recently foraged.

Various bat species also have the potential to occupy structures on the site, although no evidence of roosting was observed during the field survey. Bat species that could roost on the site could include both special-status bat species, such as pallid bats (*Antrozous pallidus*), and more common bat species, but regardless of species, roosting bats would be considered sensitive species as defined in applicable regulations or by the California Department of Fish and Wildlife, and active maternity roosts are generally considered as nursery sites under CEQA.

Urban adapted mammals, such as raccoons (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), and rats (*Rattus* sp.) are also expected to occupy the site, since they are known to occur in Concord[16].

(3) Sensitive Habitats. Sensitive habitats are defined within the context of the proposed project as:

- Habitats that are protected by regulatory agencies, such as wetlands; or
- Habitats recognized by the CDFW as rare, sensitive, important, or meriting further study.

No sensitive habitat types were identified on the project site by the LSA biologist during the field reconnaissance visit in January 2016.

(4) Wildlife Corridors. Wildlife corridors are linear and/or regional habitats that provide connectivity to other natural vegetation communities within a landscape fractured by urbanization and other development. Wildlife corridors have several functions: 1) they provide avenues along which wide-ranging animals can travel, migrate, and breed, allowing genetic interchange to occur; 2) populations can move in response to environmental changes and natural disasters; and 3) individuals can recolonize habitats from which populations have been locally extirpated. All three of these functions can be met if both regional and local wildlife corridors are accessible to wildlife. Regional

[16] LSA Associates, Inc. (LSA). Personal Observation.

wildlife corridors provide foraging, breeding, and retreat areas for migrating, dispersing, immigrating, and emigrating wildlife populations. Local wildlife corridors also provide access routes to food, cover, and water resources within restricted habitats. No significant wildlife corridors occur within or adjacent to the project site due to the developed condition of the project site and the highly urbanized setting in which it is located; however, the Walnut Creek drainage channel functions as a wildlife corridor.

(5) Nursery Sites. No known wildlife nursery sites occur on the project site, but maternity bat roosts, which would be considered a nursery site, could be present in the buildings.

(6) Special-Status Species. For the purpose of this EIR, special-status species are defined as follows:

- Species that are listed, formally proposed, or designated as candidates for listing as threatened or endangered under the FESA.
- Species that are listed, or designated as candidates for listing, as rare, threatened, or endangered under the CESA.
- Plant species on the CRPR List 1B and List 2.[17]
- Wildlife species listed by the CDFW as species of special concern, or as protected or fully protected species.
- Species that meet the definition of rare, threatened, or endangered under Section 15380 of the CEQA guidelines.
- Species considered to be of special concern by local agencies.

Special-status species with the potential to be found on the site are discussed below, beginning with plants and followed by animals.

Plant Species. A total of 20 special-status plant species have been recorded within 5 miles of the project site according to the CNDDB[18], 76 special-status plants have been recorded in nine USGS quads surrounding the site[19] according to the CNPS on-line inventory[20], and two federally listed plant species have the potential to occur on the project site according to the USFWS on-line search.[21] Because the project site is completely developed with no native vegetation communities present, none of the special-status plants identified from these database searches would occur at the site, and none were found during LSA's field survey.

[17] California Native Plant Society (CNPS). 2016. Inventory of Rare and Endangered Plants. Online edition v8-02. California Native Plant Society, Rare Plant Program, Sacramento, CA. Accessed February 5.

[18] California Department of Fish and Wildlife (CDFW). 2016a. California Natural Diversity Database (CNDDB). Special-status species occurrences within 5 miles of the project site. Wildlife and Habitat Data Analysis Branch, California Department of Fish and Wildlife, Sacramento. Accessed January 1.

[19] For the purposes of the Biological Resources section, "vicinity" generally refers to a 5 mile radius of the project site.

[20] California Native Plant Society (CNPS). 2016. Inventory of Rare and Endangered Plants. Online edition v8-02. California Native Plant Society, Rare Plant Program, Sacramento, CA. Accessed February 5.

[21] U.S. Fish and Wildlife Service (USFWS). 2016. IPac Trust Resource Report. Project Name: CenterCal Commercial. Sacramento Fish and Wildlife Office, Sacramento, California. Accessed February 5.

Wildlife Species. A total of 17 special-status animal species have been recorded within 5 miles of the project site according to the CNDDB[22], and 11 federally listed animal species were identified as having the potential to inhabit the site according to the USFWS online search.[23] In spite of these regional occurrences, for the reasons specified above, the site does not support suitable habitat for any fish, wetland, grassland, woodland, or chaparral species. Moreover, none of these species were identified at the site during the field reconnaissance. Because of the disturbed nature of the site, its geographic isolation from open space areas**,** and the lack of general habitat for special-status species, the potential for occurrence of most of these special-status species is extremely low.

Table 4.C-1 includes special-status animal species whose habitat and geographical range overlap that of the project site and that have the potential to occur on the site. Pallid bats, Townsend's big-eared bats (*Corynorhinus townsendii*), and other bat species could roost along the walls, eaves, and overhanging structures of the on-site buildings. No evidence of bat use was observed during the January 2016 field reconnaissance. The occurrence of more sensitive bat species, such as Townsend's big-eared bats, is unlikely due to the high level of disturbance and activity at the site. However, if the buildings were to be vacated in the future, some of these more sensitive bat species could roost at the buildings.

Table 4.C-1: Special-Status Animals That Potentially Occur on the Site

Animal Species	Legal Status Federal/State	Habitat	Potential for Occurrence
White-tailed kite *Elanus leucurus*	--/FP	Nests in dense-topped trees or shrubs; forages in open grasslands, meadows, and marshes.	Low quality nesting habitat present in landscaped trees. Lack of suitable foraging habitat near the site and high level of disturbance likely precludes presence.
Big free-tailed bat *Nyctinomops macrotis*	--/SSC	High cliffs or rocky outcrops.	No suitable roosting habitat present.
Pallid bat *Antrozoas pallidus*	--/SSC	Caves, mine shafts, structures; roosts must protect bats from high temperatures; roosting bats very sensitive to disturbance.	Suitable roosting habitat present along the upper walls and ceilings of the buildings, but presence unlikely to high level of disturbance.
Townsend's big eared bat *Corynorhinus townsendii*	CT/SSC	Caves, mine shafts, structures; roosts in the open, hanging from walls and ceilings; roosting bats extremely sensitive to human disturbance.	Suitable roosting habitat present along the upper walls and ceilings of the buildings, but presence unlikely to high level of disturbance.

Notes:
CT = Candidate Threatened SSC = State Species of Special Concern
FP = State Fully Protected

Source: CNDDB (CDFW 2016).

[22] California Department of Fish and Wildlife (CDFW). 2016a. California Natural Diversity Database (CNDDB). Special-status species occurrences within 5 miles of the project site. Wildlife and Habitat Data Analysis Branch, California Department of Fish and Wildlife, Sacramento. Accessed January 1.

[23] U.S. Fish and Wildlife Service (USFWS). 2016. IPac Trust Resource Report. Project Name: CenterCal Commercial. Sacramento Fish and Wildlife Office, Sacramento, California. Accessed February 5.

2. Impacts and Mitigation Measures

The following section presents a discussion of the impacts related to biological resources that could result from implementation of the proposed project. The section begins with the criteria of significance and establishes the thresholds to determine if an impact is significant. The latter part of this section presents the impacts associated with implementation of the proposed project and the recommended feasible mitigation measures, if required.

a. Criteria for Significance. Pursuant to the CEQA Guidelines Appendix G, Environmental Checklist Form, 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 CDFW or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW 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 as defined through the Porter-Cologne Water Quality Control Act 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;
- Conflict with any local policies or ordinances protecting biological resources, including the City's tree preservation ordinances; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plans.

b. Less-than-Significant Impacts

(1) Special-status plants, riparian habitat or sensitive communities, any federally or state protected wetlands, wildlife movement corridors or wildlife nursery sites, or habitat conservation plans. For the reasons set forth herein, the proposed project would not adversely affect special-status plants, riparian habitat or sensitive communities, any federally or state protected wetlands, interfere with wildlife movement corridors or known wildlife nursery sites, or conflict with any approved habitat conservation plans. There are no special-status plants on-site, nor is there any riparian habitat, sensitive communities, or wetlands. Therefore, no impacts from the project would occur in this regard. There are no applicable habitat conservation plans, and thus no conflict would arise as a result of the project. No significant wildlife corridors would be adversely affected by the proposed project, since wildlife does not regularly cross the site while traveling from one place to another. The site is bordered on all sides by urban development that is not conducive to terrestrial wildlife movement (i.e., streets, freeways, buildings). As such, wildlife movement through the site is not substantial, and those species that currently move through the site are adapted to urban environments and are expected to continue to cross through the site after implementation of the proposed project. Similarly, because no stream, lake, or other waterway or body of water is located on

or crosses the project site, the proposed project would not substantially interfere with or diminish the habitat of any resident or migratory fish.

(2) Tree Removal. All existing trees on the project site, including the 61[24] protected trees, would be removed as a part of the proposed project. No heritage trees would be removed by the project, as none are designated on the project site. Concord Municipal Code Chapter 18.310 requires that development projects obtain a permit for removal of protected trees. The applicable decision-making body (here, the City Council) evaluates the requests for the removal of heritage and other protected trees. In addition, General Plan policies described in subsection b(6) would preserve trees to the extent feasible, and would require the planting of new trees to increase benefits to wildlife.

Pursuant to Chapter 18.310, the applicant would need to obtain a tree removal permit. Protected trees would be replaced as specified in CMC Section 18.310.060, including replacement by a new tree at a minimum ratio of 3:1 (replacement: removed), requiring at least 183 new trees to be planted. Because the proposed project would be required to obtain a tree removal permit and replace protected trees as specified in the ordinance, the loss of trees is considered less than significant. In addition, the project would also be required to plant new trees and landscaping consistent with applicable City development standards for new development projects.

c. Significant Impacts. This section describes potential impacts to biological resources that may occur with implementation of the proposed project.

<u>Impact BIO-1</u>: The proposed project could affect protected or special-status species, including nesting birds and roosting bat species. (S)

A number of species of native bats, including two special-status bat species, the pallid bat and Townsend's big-eared bat, have the potential to occupy habitat located within the site. In addition, bird species whose active nests are protected by the MBTA and/or California Fish and Game Code could be impacted by the proposed project. Although no sign of bat roosts were observed during the site survey, due to the presence of suitable habitat, bats may roost on the buildings on the site prior to their demolition. Furthermore, given the nature of bats, it is possible that the field reconnaissance might not have detected bat roosts, which may have been present at the time of the survey; accordingly, for purposes of a conservative analysis, presence is presumed. One inactive bird nest was observed on top of an intercom speaker on the outside of one of the on-site buildings. This nest and other bird nests could become active in the suitable nesting habitat within the structures or trees on the site during the nesting bird season, prior to demolition or construction of the proposed project. Dismantling or removal of the habitat and project construction on the site could result in significant impacts on these species, including harm or injury to roosting bats or nesting birds, if present. Implementation of the following two-part mitigation measure would reduce the potential impact to a less-than-significant level.

> <u>Mitigation Measure BIO-1a</u>: Prior to construction activities on the project site, a qualified biologist shall conduct a pre-activity survey to determine if and how bats are using the buildings or trees on the site.

[24] Three protected trees were removed from the site in late January 2016 when a total of 93 trees were removed along the freeway frontage. These trees are included in the total count of 795 trees, due to their presence at the time of the release of the Notice of Preparation for the EIR.

- A pre-activity bat survey shall be conducted in the cavities of the large trees and at the office buildings by a qualified biologist to determine if nursery or roost sites are present. The pre-activity survey shall be conducted no more than 7 days prior to project-related construction activities (including tree removal) as well as no more than 7 days prior to any building demolition or site clearing. Bat surveys would be conducted during all times of the year, but maternity roosts are more likely to be present from May through July. If bats are found roosting at the site, the following measures shall be implemented:
    - If feasible, demolition, site clearing or construction will not occur within 50 feet from identified bat roosting sites.
    - Staging areas, construction equipment, and construction vehicles will be placed at least 100 feet from identified bat roosting sites.
    - A qualified biologist shall determine the species of bats present and the type of roost (i.e., day roost, night roost, maternity roost, hibernation site).
    - If the bats are identified as common species, and that the roost is not being used as a maternity roost or hibernation site, the bats may be evicted from its roost site using methods developed by a qualified biologist experienced in developing and implementing bat mitigation and exclusion plans.
    - If special-status bat species are found to be present or if the roost is determined to be a maternity roost or hibernation site for any species of bat, then a qualified biologist experienced in developing bat mitigation and exclusion plans shall develop a mitigation plan to compensate for the lost roost site. Removal of the roost shall only occur once the mitigation plan has been implemented and only when bats are not present in the roost.
    - The mitigation plan shall detail the methods of excluding bats from the roost and the plans for a replacement roost. One replacement roost shall be provided for each roost impacted. The mitigation plan shall be submitted to the City of Concord and California Department of Fish and Wildlife for approval, to the extent required by applicable laws and regulations, prior to implementation. The plan shall include: 1) a description of the species targeted for mitigation; 2) a description of the existing roost or roost sites; 3) methods to be used to exclude the bats if necessary; 4) methods to be used to secure the roost site to prevent its reuse prior to construction; 5) the location for a replacement roost structure; 6) design details for the construction of the replacement roost; 7) monitoring protocols for assessing replacement roost use; 8) a schedule for excluding bats, demolishing the existing roost, and construction of the replacement roost; and 9) contingency measures that shall be implemented if the replacement roosts do not function as designed.
    - The replacement roost shall be constructed prior to demolition of the existing roosts.
    - Special-status bats or a maternity roost/hibernation site shall not be disturbed until the California Department of Fish and Wildlife approves the mitigation plan. (LTS)

Implementation of Mitigation Measure BIO-1a would reduce potential impacts to bats to less than significant.

<u>Mitigation Measure BIO-1b</u>: To the extent feasible, vegetation removal activities shall occur during the non-nesting season for birds (September 1 to January 31). For any demolition, site clearing or construction activities conducted during the nesting season, a qualified biologist shall conduct a preconstruction nest survey of all trees or other suitable nesting habitat in and

within 250 feet of the limits of work. The survey shall be conducted no more than 7 days prior to the start of work. If the survey indicates the presence of nesting birds, the biologist shall determine an appropriately sized buffer around the nest in which no work shall be allowed until the young have successfully fledged, or until the nest is no longer active. The size of the nest buffer shall be determined by the biologist and shall be based on the nesting species and its sensitivity to disturbance. In general, buffer sizes of up to 250 feet for raptors and 50 feet for other birds will be used to prevent disturbance to nesting birds. These buffers may be increased or decreased depending on the bird species and the level of disturbance in the vicinity of the nest. If necessary, the qualified biologist will consult with the California Department of Fish and Wildlife for determining the size of the nest buffer. If buffer zones are established around active nests, periodic monitoring will be conducted to ensure construction is not impacting the nesting bird. If signs of stress are observed during monitoring, the buffer's size will be increased as determined necessary and monitoring will continue. (LTS)

Implementation of Mitigation Measure BIO-1b would reduce potential impacts to nesting birds to less than significant.

d. Cumulative Impacts. The project site is located within an urbanized area of the City of Concord within eastern Contra Costa County. Although more significant biological resources exist in the Suisun Bay to the north, the Briones Hills to the west, and the Mount Diablo Range to the southeast, significant biological resources are limited within the developed portions of the City and County where the project site is located, due to the lack of suitable habitat. Given the urbanized setting at the project site and its surroundings, biological resource impacts would tend to be insignificant when compared with development projects proposed within rural and natural settings outside of the developed portions of the City. No such projects were identified in the cumulative projects list (Table 6.E-1).

Sensitive species that could occur on the project site include white-tailed kite, pallid bat, and Townsend's big-eared bat. However, no evidence of these species was observed during the site survey. If any of these species are discovered during site demolition, site clearing or construction activities, mitigation measures would be implemented to ensure that they are not harmed or injured. Further, no sensitive habitat, wetlands, riparian woodland, significant wildlife movement corridors, and known nursery sites are present on the project site. Development projects proposed in other urbanized portions of the City would also have the potential to support similar urban adapted special-status species. Other cumulative projects would be required to mitigate potential impacts pursuant to the applicable regulatory framework. Due to the urbanized nature of the area, no cumulative impacts to biological resources are likely to occur from the proposed project or other approved projects that have been identified. For these reasons, the proposed project would not result in a considerable contribution to any cumulative impacts to biological resources.

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D. CULTURAL AND PALEONTOLOGICAL RESOURCES

This section assesses the project's potential environmental impacts on cultural and paleontological resources within and immediately adjacent to the project site. Information in this section is used to evaluate the potential impacts of the project with respect to the significance criteria set forth in the Impacts and Mitigation Measures section. The information presented herein is derived from a Cultural and Paleontological Resources Study prepared for the project by LSA Associates[1]. The study is included as Appendix E in this EIR.

1. Setting

This subsection describes paleontological and cultural resources in the project site and vicinity and reviews laws, codes, and regulations relevant to cultural and paleontological resources.

a. Paleontological Resources. Paleontological resources consist of fossils and their immediate surroundings. A review of geological mapping for paleontological resource sensitivity indicated that the project site may be sensitive for fossil resources 10 feet below the existing surface.

Sediments within the project site are composed of alluvial gravel, sand, and clay. The upper 10 feet of alluvium is likely all Holocene Period in age (less than 11,800 years old) and is of low paleontological sensitivity. Older alluvial sediment from the Pleistocene Period (11,800 years to two million years old) lies deeper than 10 feet below ground surface and may have high paleontological sensitivity.

b. Cultural Resources. Cultural resources are sites, buildings, structures, objects, and districts that may have cultural value for their historical significance. No cultural resources were identified on the project site or within adjacent properties by the cultural resources study, which included a field survey of the project site, a record search of properties within a 1-mile radius, and a literature and map review. The project site contains buildings, parking, landscaping, and other improvements developed between 1970 and 1984 as a regional office for Chevron Corporation, and none of the existing buildings on the site are considered a historical resource. A record search of the project site and vicinity was conducted through the Northwest Information Center (NWIC) of the California Historical Resources Information System at Sonoma State University. Other State and local inventories were also reviewed for cultural resource records. No cultural resources have been recorded on the project site. The nearest archaeological cultural resource was identified approximately 0.5 mile from the project site. The record search also identified a 2011 subsurface archaeological reconnaissance study that was conducted as part of the Central Contra Costa Sanitary District Concord Recycled Water Project. The study included a total of 115 geoarchaeological cores extending to 8 feet in depth, including 22 cores that were excavated along three sides of the project site along Diamond Boulevard, Galaxy Way, and Willow Way[2]. The survey did not identify any archaeological deposits adjacent to the project site, nor was there any evidence of buried landscapes that would have been suitable for Native American habitation extending within the project site.

[1] LSA, 2016. *Cultural and Paleontological Resources Study for The Veranda Shopping Center Project*. April 25.

[2] Holman & Associates, 2011. *Subsurface Archaeological Reconnaissance and Section 106 Compliance for the Central Contra Costa Sanitary District Concord Recycled Water Project in Concord and Contra Costa County, California*.

As part of the cultural resources study for the project, the Native American Heritage Commission (NAHC) conducted a record search of its sacred lands file and did not identify any records of Native American cultural resources in the vicinity of the project site. The NAHC provided a list of Native American contacts for the project area who may have knowledge of cultural resources in the vicinity. On February 1-2, 2016, letters were sent to the tribal representatives on the NAHC contacts list with a copy of the EIR's Notice of Preparation and an invitation to consult with the City regarding the project. In addition, on April 12, 2016, the City sent a notification of the project to the Ione Band of Miwok Indians following the tribe's request for notification of projects in the City, received March 7, 2016. As of the writing of this Draft EIR, the City has not received any requests from tribes to consult on the project.

c. Regulatory Framework. This subsection briefly discusses laws, codes, and regulations applicable to cultural resources within the City of Concord and which may be relevant to this analysis.

(1) State

California Environmental Quality Act (CEQA) Requirements. CEQA defines a "historical resource" as a resource that is: 1) listed in, or determined eligible for listing in, the California Register of Historical Resources (California Register); 2) listed in a local register of historical resources as defined in Public Resources Code (PRC) Section 5020.1(k); 3) identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or 4) determined to be a historical resource by a project's lead agency (PRC Section 21084.1 and *CEQA Guidelines* Section 15064.5(a)). A historical resource consists of:

> "Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California…. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources" (*CEQA Guidelines* Section 15064.5(a)(3)).

In accordance with *CEQA Guidelines* Section 15064.5(b), a substantial adverse change in the significance of a historical resource is a significant effect on the environment. Significant impacts under CEQA require that specific, feasible mitigation measures be developed to reduce adverse environmental conditions.

California Register of Historical Resources. The California Register is established pursuant to PRC Section 5024.1. The California Register is a guide to cultural resources that must be considered when a government agency undertakes a discretionary action subject to CEQA. The California Register helps government agencies identify and evaluate California's historical resources and indicates which properties are to be protected, to the extent prudent and feasible, from a substantial adverse change (PRC Section 5024.1(a)). Any resource listed in, or eligible for listing in, the California Register must be considered during the CEQA process.[3]

[3] California Office of Historic Preservation, 2001. California Department of Parks and Recreation. *California Environmental Quality Act (CEQA) & Historical Resources.* Technical Assistance Series No. 1. Sacramento.

A cultural resource is evaluated under four California Register criteria to determine its historical significance (*CEQA Guidelines* Section 15064.5(a)(3); PRC 5024.1(c)). To be eligible for listing on the California Register, a resource must be significant at the local, State, or national level in accordance with one or more of the following criteria:

- Is associated with events that have made a significant contribution to the broad pattern of California's history and cultural heritage;
- Is associated with the lives of persons important in our past;
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Has yielded, or may be likely to yield, information important in prehistory or history.

In addition, California Register eligibility is based on other considerations, including a resource's integrity, which is "the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance." Resources that are significant and possess integrity will generally be considered eligible for listing in the California Register.

Assembly Bill 52 – Tribal Cultural Resources and Consultation. Assembly Bill 52, which became law on January 1, 2015, provides for consultation with California Native American tribes under specified circumstances during the CEQA process and treats significant impacts to "tribal cultural resources" as significant environmental impacts. PRC Section 20174 states that "tribal cultural resources" are either of the following:

1. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
   (A) Included or determined to be eligible for inclusion in the California Register of Historical Resources.
   (B) Included in a local register of historical resources as defined in subdivision (k) of PRC Section 5020.1.
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

The consultation provisions of the law require that within 14 days of determining that a project application is complete, or a decision by a public agency to undertake a project, the lead agency must notify tribes of the opportunity to consult on the project. California Native American tribes must be recognized by the Native American Heritage Commission as traditionally and culturally affiliated with the project area and must have previously requested that the lead agency notify them of projects. Tribes have 30 days following notification of a project to request consultation with the lead agency, and the lead agency must undertake consultation with the tribe within 30 days after the consultation is requested.

The purpose of consultation is to ensure that California Native American tribal knowledge about tribal cultural resources is fully considered in identification and determination of the significance of tribal cultural resources. Consultation may also include a discussion of project alternatives, significant effects, and mitigation measures, and should be undertaken in good faith by both the tribe and lead agency. If a project is determined to result in a significant impact to an identified tribal cultural resource, the consultation process must occur and conclude prior to adoption of a Negative Declaration, Mitigated Negative Declaration, or certification of an Environmental Impact Report (PRC Sections 21080.3.1, 21080.3.2, and 21082.3).

Human Remains. Section 7050.5 of the California Health and Safety Code 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.

Native American Historic Resource Protection Act. The Native American Historic Resource Protection Act (PRC Section 5097-5097.993) provides that any person who unlawfully and maliciously excavates upon, removes, destroys, injures, or defaces a Native American historic, cultural, or sacred site that is listed or may be listed in the California Register is guilty of a misdemeanor if the act was committed with the specific intent to vandalize, deface, destroy, steal, convert, possess, collect, or sell a Native American art object, inscription, or feature, or site and the act occurs on public land or, if on private land, is committed by a person other than the landowner.

Section 5097.98 of the California Public Resources Code states that the NAHC, upon notification of the discovery of Native American human remains pursuant to Health and Safety Code Section 7050.5, shall immediately notify those persons (i.e., the Most Likely Descendent or "MLD") it believes to be descended from the deceased. With permission of the landowner or a designated representative, the MLD may inspect the remains and any associated cultural materials and make recommendations for treatment or disposition of the remains and associated grave goods. The MLD shall provide recommendations or preferences for treatment of the remains and associated cultural materials within 48 hours of being granted access to the site.

(2) Local

Concord General Plan Policies. Concord General Plan policies related to cultural and paleontological resources are listed and discussed in Table 4.I-1 in Section 4.I, Land Use and Planning Policy.

Concord Historic Preservation Ordinance. Concord Municipal Code 18.450, Historic Preservation, establishes standards and regulations to recognize, preserve, and enhance areas, places, sites, buildings, and structures of historic, community, or aesthetic interest or value. The code establishes the City's process and criteria for designation of a property as a landmark or district. City Landmarks and Districts are considered historical resources under CEQA.

2. Impacts and Mitigation Measures

The following section presents a discussion of the impacts related to cultural and paleontological resources that could result from implementation of the proposed project. The section begins with the criteria of significance and establishes the thresholds to determine if an impact is significant. The latter part of this section presents the impacts associated with implementation of the proposed project and the recommended feasible mitigation measures, if required.

a. Criteria of Significance. Pursuant to the CEQA Guidelines Appendix G, Environmental Information Form, the proposed project would have a significant cultural resources impact if it would:

- Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5;
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5;
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature;
- Disturb any human remains, including those interred outside of formal cemeteries; or
- Cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code Section 21074 as either:
    1) A site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, that is listed or eligible for listing on the California Register of Historical Resources, or on a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or
    2) A resource determined by a lead agency, in its discretion and supported by substantial evidence, to be significant according to the historical register criteria in Public Resources Code Section 5024.1 (c), and considering the significance of the resource to a California Native American tribe.

b. Less-than-Significant Impacts. The following less-than-significant impacts have been identified.

(1) Historical Resources. The project site contains buildings, parking, landscaping, and other improvements developed between 1970 and 1984 as a regional office for Chevron Corporation, and none of the existing buildings or improvements on the site are considered a historical resource because the buildings are less than 50 years old and do not exhibit any unique characteristics that would meet the applicable criteria for eligibility as a historic resource or as a local landmark. Furthermore, there are no identified historical resources in the immediate vicinity, which is developed with relatively modern (post 1970) commercial development. Therefore, the project would not cause a substantial adverse change in the significance of a historical resource as there are no historical resources on the project site or in the vicinity.

(2) Known Cultural Resources. The background research, tribal consultation, and field survey do not indicate that any cultural resources are present in or adjacent to the project site. Further, a geoarchaeological coring study previously conducted along three sides of the project site did not

identify any archaeological deposits or any evidence of buried landscapes that would have been suitable for Native American habitation. Therefore, potential impacts on known cultural resources are considered to be less than significant.

(3) Unknown Cultural Resources. The project site is currently developed with existing office buildings, landscaping, utilities, and related infrastructure. The soil has been graded due to previous development, and the potential for previous unknown subsurface resources to be encountered during construction activities is unlikely. However, there is a potential for ground-disturbing activities to encounter previously unknown cultural resources or human remains. Inappropriate removal or destruction of such deposits or human remains could occur if such resources are encountered and are not properly addressed. If any cultural resources or human remains are discovered during construction activities, work in the area would cease and would be treated in accordance with federal, State, and local requirements, including those set forth in the California PRC. The City would require the project to incorporate its standard conditions of approval (copied below) to minimize the project's potential impacts to unknown cultural resources:

- In the event of the encounter of subsurface materials suspected to be of an archaeological or paleontological nature, all grading and/or excavation shall cease, the find shall be left untouched, and the City Planning Division shall be immediately notified. The County Coroner and the Native American Heritage Commission shall also be notified and the procedures required in CEQA Section 15064.5 shall be followed. This requirement shall be noted on the Grading and Building Plans, prior to issuance of permits. ***(PLNG, ENGR, BLDG)***
- In the above event, retain a qualified professional archaeologist certified by the Register of Professional Archaeologists or paleontologist with a degree(s) in paleontology or geology, to evaluate and make recommendations as to disposition, mitigation and/or salvage. The recommendation shall be implemented before work may proceed. The applicant shall be responsible for all costs associated with the professional investigation and implementation. ***(PLNG, ENGR, BLDG)***

Implementation of the City's standard conditions of approval, which require compliance with existing laws and regulations, would reduce potential impacts to unknown cultural resources to a less-than-significant level. Therefore, no mitigation is required.

(4) Paleontological Resources. The sediment within the upper 10 feet of the project site is from the Holocene Period and has a low paleontological sensitivity rating. The alluvial sediment deeper than 10 feet is from the Pleistocene Period and has a high paleontological sensitivity rating. Therefore, in the event that excavations for the project extend deeper than 10 feet, there is a potential for unknown paleontological resources to be encountered. Implementation of the City's standard conditions of approval, referenced above, requires compliance with existing regulations and would reduce potential impacts to unknown paleontological resources to less than significant. Therefore, no mitigation is required.

c. Significant Impacts. The project would not result in any significant impacts to cultural and paleontological resources.

d. Cumulative Impacts. The geographic extent for direct impacts to cultural or paleontological resources is limited to the project site where construction activities would occur. The potential for

cultural or paleontological resources impacts to occur as a result of the project is low. As described above, the site does not contain any historic structures and is not known to contain or be underlain by any historical or archaeological resources. Further, paleontological resources are unlikely to occur in the upper 10 feet of soils underlying the site. If resources are discovered during ground-disturbing activities as part of site demolition and construction, compliance with the City's conditions of approval would ensure that the resources are properly handled and the appropriate persons are contacted (e.g., Native American Heritage Commission). Implementation of Concord General Plan Policies POS-4.1.2, POS-4.1.3, and POS-4.1.4, along with applicable State regulations, would also ensure that cumulative impacts to cultural or paleontological resources from other development projects in the City, region, or State are avoided or mitigated. Therefore, in the unlikely event that any resources were encountered at the project site during construction activities, the proposed project would not result in a considerable contribution to cumulative impacts to cultural or paleontological resources. This finding is consistent with the Concord General Plan EIR, which did not identify any cultural resources impacts that could not be mitigated, or any cumulative cultural resources impacts.

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E. GEOLOGY, SOILS, AND SEISMICITY

This section assesses the project's potential environmental impacts on geology, soils, and seismicity based on an inspection of current site conditions, a review of published and unpublished geologic reports and maps, and a site-specific geotechnical engineering report (GeoDesign, 2015), included in Appendix F.[1] This section also assesses potential impacts from strong ground shaking, liquefaction, and differential settlement that could result from seismic activity. Information in this section is used to evaluate the potential impacts of the project with respect to the significance criteria set forth in the Impacts and Mitigation Measures section.

1. Setting

The project site is located within the Coast Ranges Geomorphic Province of Northern California. This region is dominated by northwest-southeast trending ranges of low mountains and intervening valleys. The project site is located in the seismically active San Francisco Bay Area. The main geologic feature generating seismic activity in the region is the tectonic plate boundary between the North American and Pacific plates. Locally, this boundary is referred to as the San Andreas Fault Zone (SAFZ), which includes the San Andreas Fault and numerous other active faults.

a. Geologic Setting. The following discussion includes a description of the topography, soils, seismic, and geotechnical conditions of the project site and vicinity, as appropriate.

(1) Topography. The project site is located within a relatively flat urbanized area. The existing ground surface elevation is approximately 23 to 26 feet above mean sea level. No open creek or stream channels cross the project site. The Walnut Creek drainage channel is located as close as a 0.25 mile east of the project site.

(2) Geology and Soils. Based on regional geologic mapping, the project site is underlain by deposits of relatively recent Holocene-era alluvium. The alluvium is underlain by older, Miocene-aged marine sedimentary rock.

The geotechnical investigation for the project included installation of 16 soil borings to depths ranging from approximately 26 to 51.5 feet below the ground surface (bgs) and two pavement borings to a depth of approximately 3 feet bgs. Soils at the project site consist of approximately 3 to 10 feet of undocumented fill material overlying alluvial clay and sand. In the deepest borings, alluvial gravel is encountered at depths of approximately 38 to 45 feet bgs to at least 51.5 feet bgs, the extent of the investigation. Groundwater was encountered at depths of approximately 9.5 to 14.6 feet bgs during the investigation. Paved areas consist of approximately 2.8 to 5.3 inches of asphaltic concrete over approximately 2.0 to 13.0 inches of aggregate base.[2]

[1] GeoDesign, 2015. *Report of Geotechnical Engineering Services, Proposed Retail Center, 2001-2003 Diamond Boulevard, Concord, California.* September 29.

[2] Ibid.

Soils underlying the project site have been mapped as "Sycamore silty clay loam" and "Laugenour loam" by the Natural Resources Conservation Service.[3] These soils are poorly drained, silty and sandy clay loams with low to moderate shrink-swell potential.[4]

(3) Regional Faults. The project site is located within the 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 results in the accumulation of strain along the faults, which is released during earthquakes. Numerous moderate to strong historic earthquakes have been generated in northern California by the SAFZ. The level of active seismicity results in classification of the area as seismic risk Zone 4 (the highest risk category) in the California Building Code.

Table 4.E-1: Regional Faults Near the Project Site

Fault Name	Approximate Distance from Project Site (Miles)
Concord-Green Valley	1
Diablo	9
Clayton	10
Marsh Creek-Greenville	12
Hayward	14
Calaveras	14

Source: GeoDesign, 2015 and City of Concord, 2006.

The SAFZ includes numerous active faults identified by the California Division of Mines and Geology (now named California Geological Survey) under the Alquist-Priolo Earthquake Fault Zoning Act to be "active" (i.e., to have evidence of fault rupture in the past 11,000 years). The closest active fault to the project site is the Concord-Green Valley Fault, located 1 mile east of the project site. Several other regional faults could produce earthquakes that could affect the project site (Table 4.E-1 and Figure 4.E-1).

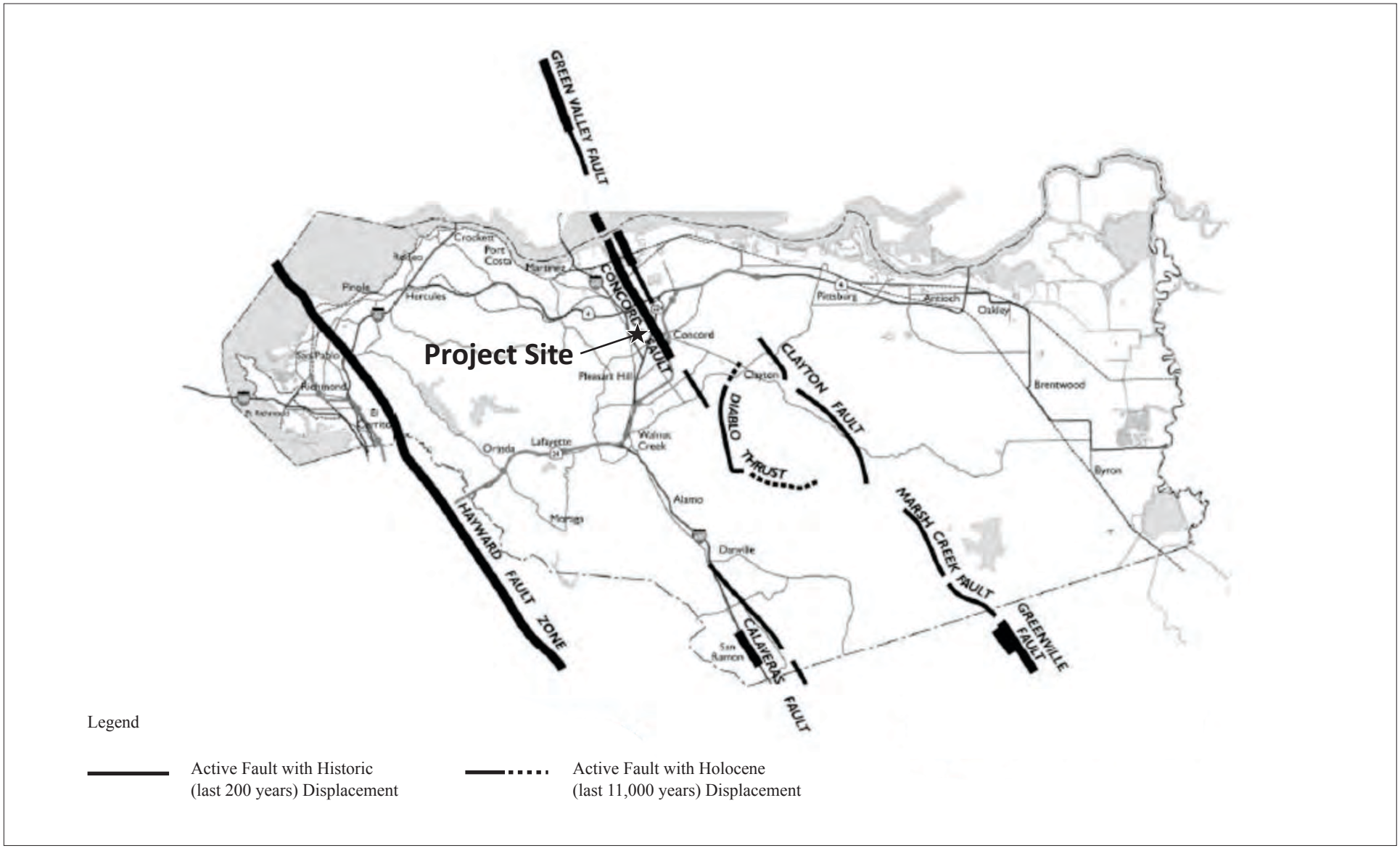
A recent U.S. Geological Survey (USGS) earthquake prediction model estimates a 72 percent probability that between 2014 and 2044 a 6.7 or greater magnitude earthquake (classified as "damaging") will occur in the San Francisco Bay Area.[5] Near the project site, the model estimates a 14 percent probability of an earthquake along the Hayward Fault and 7 percent along the Calaveras Fault during this period.[6] Relative to earlier prediction models, the recent model predicts slightly lower probabilities for damaging earthquakes in the Bay Area and higher probabilities from "great" (magnitude 8.0 or greater earthquakes).

[3] National Resource Conservation Survey, 2016. Web Soil Survey. Website: websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx (accessed February 24, 2016).

[4] Ibid.

[5] Field, E.H., and 2014 Working Group on California Earthquake Probabilities, 2015. *UCERF3: A New Earthquake Forecast for California's Complex Fault System: U.S. Geological Survey 2015–3009*. Website: http://pubs.usgs.gov/fs/2015/3009/pdf/fs2015-3009.pdf (accessed February 24, 2016).

[6] Ibid.



LSA

FIGURE 4.E-1

N

0 3.5 7
MILES

The Veranda Shopping Center

Active Regional Faults

SOURCE: City of Concord, 2006 (based on Jennings, C.W., 1994. Fault Activity Map of California and Ajacent Areas, CGS Data Map No. 6.)

P:\CYR1502\g\EIR\Figure 4.E-1_Active Regional Faults.cdr (4/15/2016)

(4) 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 active faults have been mapped at the project site, and no portion of the project site is located within an Alquist-Priolo Earthquake Fault Zone.[7] Therefore, the geotechnical investigation concludes that the potential for fault rupture at the project site is negligible.

(5) 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 during 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. Magnitude is a measure of the energy released by an earthquake; it is assessed by seismographs that measure the amplitude of seismic waves.

Intensity is a more subjective measure of the perceptible effects of seismic energy at a given point and varies with 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 (refer to Table 4.E-2).

Intensity can also be quantitatively measured using accelerometers (strong motion seismographs) that record ground acceleration at a specific location, a measure of force applied to a structure under seismic shaking. Acceleration is measured as a fraction or percentage of the acceleration under gravity (g). The Concord Fault is considered capable of generating a moment magnitude (M_w) earthquake greater than 6.8. A moment magnitude 6.8 earthquake on the Concord Fault would generate violent seismic shaking (MMI IX) at the project site.[8]

Estimates of the peak ground acceleration have been made for the project site and its surroundings 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 vicinity is estimated by the California Geological Survey (CGS) as 0.566g.[9] This level of ground shaking at the project site is a potentially serious hazard.

(6) Liquefaction. Liquefaction is the temporary transformation of loose, saturated granular sediments from a solid state to a liquefied state. In the process, the soil undergoes transient loss of strength, which commonly causes ground displacement or ground failure to occur.

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[7] GeoDesign, 2015. *Op cit.*

[8] Association of Bay Area Governments, 2016. San Francisco Bay Earthquake Hazard. Website: gis.abag.ca.gov (accessed February 24, 2016).

[9] California Geological Survey, 2008. *Probabilistic Seismic Hazards, Peak Ground Acceleration – 10 Percent of Being Exceeded in 50 Years*. Website: www.quake.ca.gov/gmaps/PSHA/psha_interpolator.html (accessed February 24, 2016).

Table 4.E-2: Modified Mercalli Scale[a]

M_w	Intensity	Effects	v,[b] cm/s	g[c]
	I.	Not felt. Marginal and long-period effects of large earthquakes.		
3	II.	Felt by persons at rest, on upper floors, or favorably placed.		
	III.	Felt indoors. Hanging objects swing. Vibration-like passing of light trucks. Duration estimated. May not be recognized as an earthquake.		0.0035-0.007
4	IV.	Hanging objects swing. Vibration-like passing of heavy trucks; or sensation of a jolt like a heavy ball striking the walls. Standing motor cars rock. Windows, dishes, doors rattle. Glasses clink. Crockery clashes. In the upper range of IV wooden walls and frame creak.		0.007-0.015
	V.	Felt outdoors; direction estimated. Sleepers wakened. Liquids disturbed, some spilled. Small unstable objects displaced or upset. Doors swing, close, open. Shutters, pictures move. Pendulum clocks stop, start, change rate.	1-3	0.015-0.035
5	VI.	Felt by all. Many frightened and run outdoors. Persons walk unsteadily. Windows, dishes, glassware broken. Knickknacks, books, etc., off shelves. Pictures off walls. Furniture moved or overturned. Weak plaster and masonry D cracked. Small bells ring (church, school). Trees, bushes shaken (visibly, or heard to rustle - CFR).	3-7	0.035-0.07
6	VII.	Difficult to stand. Noticed by drivers of motor cars. Hanging objects quiver. Furniture broken. Damage to masonry D, including cracks. Weak chimneys broken at roof line. Fall of plaster, loose bricks, stones, tiles, cornices (also unbraced parapets and architectural ornaments - CFR). Some cracks in masonry C. Waves on ponds; water turbid with mud. Small slides and caving in along sand or gravel banks. Large bells ring. Concrete irrigation ditches damaged.	7-20	0.07-0.15
	VIII.	Steering of motor cars affected. Damage to masonry C; partial collapse. Some damage to masonry B; none to masonry A. Fall of stucco and some masonry walls. Twisting, fall of chimneys, factory stacks, monuments, towers, elevated tanks. Frame houses moved on foundations if not bolted down; loose panel walls thrown out. Decayed piling broken off. Branches broken from trees. Changes in flow or temperature of springs and wells. Cracks in wet ground and on steep slopes.	20-60	0.15-0.35
7	IX.	General panic. Masonry D destroyed; masonry C heavily damaged, sometimes with complete collapse; masonry B seriously damaged. (General damage to foundations - CFR.) Frame structures, if not bolted, shifted off foundations. Frames racked. Serious damage to reservoirs. Underground pipes broken. Conspicuous cracks in ground. In alluviated areas sand and mud ejected, earthquake foundations, sand craters.	60-200	0.35-0.7
8	X.	Most masonry and frame structures destroyed with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes, embankments. Large landslides. Water thrown on banks of canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flat land. Rails bent slightly.	200-500	0.7-1.2

M_w	Intensity	Effects	v,[b] cm/s	g[c]
	XI.	Rails bent greatly. Underground pipelines completely out of service.		>1.2
	XII.	Damage nearly total. Large rock masses displaced. Lines of sight and level distorted. Objects thrown into the air.		

[a] Based on Richter, 1958, *Elementary Seismology*.
[b] Average peak ground velocity, centimeters per second (cm/s).
[c] Average peak acceleration (away from source).
[d] Richter magnitude correlation.

Note: Masonry A, B, C, D. To avoid ambiguity of language, the quality of masonry, brick or otherwise, is specified by the following lettering (which has no connection with the conventional Class A, B, C construction).
Masonry A: Good workmanship, mortar, and design, reinforced, especially laterally, and bound together by using steel, concrete, etc.; designed to resist lateral forces.
Masonry B: Good workmanship and mortar, reinforced, but not designed to resist lateral forces.
Masonry C: Ordinary workmanship and mortar; no extreme weaknesses such as non-tied-in corners, but masonry is neither reinforced nor designed against horizontal forces.
Masonry D: Weak materials, such as adobe; poor mortar; low standards of workmanship; weak horizontally.

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. Liquefaction potential increases in the vicinity of Suisun Bay and locally near creeks where loose, granular, recently deposited sediments have accumulated as a result of stream processes. Liquefaction has resulted in substantial loss of life, injury, and damage to property. In addition, liquefaction increases the hazard of fires because of explosions induced when underground gas lines break, and because the breakage of water mains substantially reduces fire suppression capability.

Lateral spreading is lateral ground movement, with some vertical component, as a result of liquefaction. In effect, the soil rides on top of the liquefied layer. Lateral spreading can occur on relatively flat sites with slopes less than 2 percent, under certain circumstances, and can cause ground cracking and settlement.

The project vicinity has been mapped as having a moderate liquefaction hazard using regional geologic data.[10] In general, where there is any potential for liquefaction, site-specific studies are needed to determine the extent of the hazard if development were to occur in the area. However, the geotechnical report prepared for the project site does not identify any soils that would be susceptible to liquefaction or lateral spread hazards under the maximum credible earthquake scenario and therefore concludes that liquefaction and lateral spreading are not potential project site hazards.

(7) Slope Stability. The project site is relatively level, is not adjacent to steep hillsides, and is not located in a mapped landslide hazard zone. Therefore, slope instability hazards are considered negligible.

[10] ABAG, 2016. *Op. cit.*

(8) Differential Settlement. Subsidence and differential settlement could occur if buildings were built on low-strength foundation materials (including non-engineered fill). Pilings are often used to anchor structures to firmer deposits below the surface in these situations. Although differential settlement generally occurs slowly enough that its effects are not sudden or catastrophic, building damage can occur. As the project site is underlain by approximately 3 to 10 feet of undocumented fill, buildings at the project site could potentially be susceptible to differential settlement.

(9) Expansive Soils. Expansive soils expand and contract in response to changes in soil moisture, most notably when near surface soils change from saturated to a low moisture content condition, and back again. Clayey soils, such as those at the project site, may be prone to expansion or contraction as moisture levels change, which can damage buildings and other improvements. Laboratory testing on a sample of project site soil determined the linear extensibility of the soil is approximately 2 percent. Typically, linear extensibility values over 3 percent are considered to have the potential to cause damage to buildings, roads, and other structures. Accordingly, the project site's soils would not be viewed as expansive.

(10) Corrosive Soils. Soils may be classified as corrosive to metals and/or concrete. This classification depends on a variety of variables, including moisture, electrical conductivity, chloride content, pH, and dissolved salt content. Two soil samples from the project site were tested for corrosivity through analysis of resistivity and pH. Based on the resistivity results, the soils would be considered moderately to highly corrosive, though pH did not indicate significant corrosive potential. The geotechnical report recommends that the results be evaluated by corrosion specialists who may provide recommendations to accommodate corrosive soils at the project site.

b. Regulatory Framework

(1) Federal

National Earthquake Hazards Reduction Program. The National Earthquake Hazards Reduction Program (NEHRP) was established by the U.S. Congress when it passed the Earthquake Hazards Reduction Act of 1977, Public Law (PL) 95–124. In establishing NEHRP, Congress recognized that earthquake-related losses could be reduced through improved design and construction methods and practices, land use controls and redevelopment, prediction techniques and early-warning systems, coordinated emergency preparedness plans, and public education and involvement programs.

(2) State

Alquist-Priolo Earthquake Fault Zoning Act (A-PEFZA). The A-PEFZA was passed in 1972 by the State legislature to mitigate the hazard of surface fault rupture by regulating structures designated for human occupancy near active faults. As required by the Act, the CGS has delineated Earthquake Fault Zones along known active faults in California.

California Building Code. The 2013 California Building Code (CBC) refers to Part 2 of the California Building Standards Code in Title 24 of the California Code of Regulations and is based on the 2012 International Building Code. The 2013 CBC covers grading and other geotechnical issues, building specifications, and non-building structures. The CBC requires that a site-specific geotechnical investigation report be prepared by a licensed professional for proposed developments of one or more buildings greater than 4,000 square feet to evaluate geologic and seismic hazards.

The purpose of a site-specific geotechnical investigation is to identify seismic and geologic conditions that require project mitigation, such as surface fault ruptures, ground shaking, liquefaction, differential settlement, lateral spreading, expansive soils, and slope stability. Requirements for the geotechnical investigation are presented in Chapter 16 "Structural Design" and Chapter 18 "Soils and Foundation" of the 2013 CBC. The geotechnical report prepared for the proposed project addresses these requirements and makes site-specific recommendations for the proposed project.

Seismic Hazards Mapping Act (SHMA). In 1990, following the 1989 Loma Prieta earthquake, the California legislature enacted the SHMA to protect the public from the effects of strong ground shaking, liquefaction, landslides, and other seismic hazards. The SHMA established a statewide mapping program to identify areas subject to violent shaking and ground failure; the program is intended to assist cities and counties in protecting public health and safety. The CGS is mapping SHMA Zones and has completed seismic hazard mapping for the portions of California most susceptible to liquefaction, ground shaking, and landslides: primarily the San Francisco Bay area and the Los Angeles basin. A geotechnical investigation for projects within seismic hazard zones must be conducted and appropriate mitigation measures incorporated into the project design before a development permit will be granted. Mapping of fault and landslide hazard zones for the USGS Walnut Creek quadrangle, including the project site, is complete, while mapping of liquefaction hazards is currently in preparation.[11]

(3) Local

City of Concord 2030 General Plan. Concord General Plan policies related to geology, soils, and seismicity are addressed in the Safety and Noise Element. Applicable policies are listed and discussed in Table 4.I-1 in Section 4.I, Land Use and Planning Policy.

2. Impacts and Mitigation Measures

The following section presents a discussion of the impacts related to geology, soils, and seismicity that could result from implementation of the proposed project. The section begins with the criteria of significance and establishes the thresholds to determine if an impact is significant. The latter part of this section presents the impacts associated with implementation of the proposed project and the recommended feasible mitigation measures, if required.

a. Criteria of Significance. Pursuant to the CEQA Guidelines Appendix G, Environmental Information Form, the project would have a significant geology, soils, or seismicity impact if it would:

- Expose people or structures to substantial risk of loss, injury, or death involving:
  - Rupture of a known active or potentially active earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area, or based on other substantial evidence of a known fault;
  - Strong seismic ground shaking;

[11] California Geological Survey (CGS), 2016. Seismic Hazard Mapping Project. Website: http://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps. Accessed February 24.

- Seismic-related ground failure, including liquefaction; and
- Landslides;

- Result in substantial soil erosion or loss of topsoil;
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in an on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;
- Be located on expansive soil, as defined in Section 1803.5 of the 2013 California Building Code, 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. Less-than-significant impacts related to geologic and seismic conditions are discussed below.

(1) Fault Rupture. No known active faults cross the project site, and therefore impacts associated with fault rupture are considered less than significant.

(2) Septic Tanks and Alternative Wastewater Disposal Systems. The soils at the project site would not be utilized for a septic system or alternative wastewater disposal system. The project would be serviced by the City of Concord's wastewater collection system, which conveys wastewater to the Central Contra Costa Sanitary District's wastewater treatment plant. Therefore, no impacts associated with the operation of a septic system or alternative wastewater disposal system would occur.

(3) Off-Site Landslide, Lateral Spreading, Subsidence, Liquefaction, or Collapse. The project geotechnical report does not identify layers of soils or sediments that would have the potential to liquefy. Therefore, liquefaction of soils at the project site would not be anticipated to cause ground displacement and ground failure, including lateral spreading and flows. The project site is relatively flat and is not adjacent to an area of steep slopes. Therefore, landslides would not be expected to occur at the project site. Therefore, impacts related to these topics are considered less than significant.

(4) Erosion. Demolition, excavation, grading, and construction on the project site would require temporary disturbance and exposure of shallow soils through removal of existing structures, pavements, and vegetative cover. During the construction period, excavation and grading activities would result in exposure of soil to runoff, potentially causing erosion and entrainment of sediment in the runoff. This potential effect is discussed in Section 4.H Hydrology and Water Quality. Compliance with the Construction General Permit and implementation of the Stormwater Pollution Prevention Plan (SWPPP), a standard requirement for construction projects such as this, would reduce potential construction phase erosion impacts on water quality to less than significant.

c. Significant Impacts. The following discussion describes the significant impacts related to geology, soils, and seismicity that could result from the proposed project.

(1) Seismic Shaking. All structures in the Bay Area could potentially be affected by ground shaking in the event of an earthquake. The amount of ground shaking that would occur depends on the

magnitude of the earthquake, the distance from the epicenter, and the type of earth materials in between. Violent ground shaking could occur at the project site during expected earthquakes on the Concord Fault. In addition, strong to very strong shaking could occur at the project site during earthquakes on other regional faults.

Impact GEO-1: Implementation of the proposed project could expose people or structures to strong seismic shaking and related seismically induced hazards. (S)

The expected level of seismic shaking from an earthquake that is likely to occur during the design life of the project could cause injuries and fatalities and/or extensive structural and non-structural damage to existing and future buildings within the project site. Based on the peak acceleration created by the maximum credible earthquake at the project site, the project geotechnical report develops seismic design parameters for the proposed project in accordance with Chapter 16, Section 1613 of the 2013 CBC.[12] These seismic design criteria are conservative; for example, the one-second peak ground acceleration used for the design is 0.72g (MMI X, very violent shaking), higher than the peak ground acceleration of 0.566g (MMI IX, violent shaking) expected on the project site based on CGS modeling cited in the geologic setting section, above. Based on these design parameters, the geotechnical investigation provides recommendations for design of foundations, pavements, floor slabs, and other features to accommodate anticipated ground shaking.

Seismic hazards cannot be completely eliminated even with site-specific geotechnical investigation and advanced building practices, such as those provided in the geotechnical report recommendations. However, exposure to seismic hazards is a generally accepted part of living in the San Francisco Bay Area, and this project would not pose any increased and/or unusual risks in this regard. The mitigation measure described below would reduce the potential hazards associated with seismic activity to a less-than-significant level.

> Mitigation Measure GEO-1: Prior to the issuance of grading and building permits, final design plans for the project shall incorporate the recommendations of the project geotechnical investigation report (GeoDesign, 2015). (LTS)

Implementation of Mitigation Measure GEO-1 would reduce the potential impacts of seismic shaking to less than significant.

(2) Unstable, Expansive, and/or Corrosive Soils. The construction phase would include grading activities, the installation of foundations and pavement, and the construction of new buildings. Some excavation will be required for installation of building foundations and utility trenches. Other earthmoving at the project site would be limited to shallow grading for pavement and landscaping construction.

New construction is proposed in an area underlain by non-engineered fill of unknown origin. This fill may not have consistent engineering qualities, which could result in unequal support of buildings and other infrastructure. Improvements constructed on these soils could therefore be damaged by differential settlement or expansion of soils. The project geotechnical report recommends that a

[12] GeoDesign, 2015.

subgrade analysis be performed after demolition and removal of pavement and vegetation at the site, to evaluate the suitability of this fill material.[13] The soils should be evaluated by visual observation and by observing a fully loaded dump truck, or similar heavy construction vehicle, driving over the material. Any fill observed to be soft or loose is recommended to be excavated and replaced with compacted granular fill meeting performance standards provided in the geotechnical report.

In addition, these soils have the potential to expand and contract as the soils become moist and dry out, which could also cause damage to project improvements. Laboratory testing on project site soils determined that, based on linear extensibility, the soils may expand up to 2 percent when saturated with water. Based on this result, the geotechnical report recommends that foundation loads be greater than 1,500 pounds per square foot and that drainage be designed so that water cannot infiltrate beneath building floor slabs.

Testing for corrosivity on project site soils provided mixed results, with resistivity results indicating moderately to highly corrosive soil and pH indicating non-corrosive soil. The geotechnical report recommends that a corrosion specialist interpret the results and provide recommendations to ensure that metal and concrete improvements that come into contact with project site soils are not affected by corrosivity.

Impact GEO-2: Construction of structures in areas of unstable geologic units, including expansive soils, could impact structure integrity. (S)

Implementation of Mitigation Measure GEO-1, requiring incorporation of recommendations of the project geotechnical report into project design, along with the following mitigation measure would reduce this impact to a less-than-significant level:

> Mitigation Measure GEO-2: As a condition of approval for grading permits, excavation and shoring activities shall be conducted under the supervision of a certified engineering geologist and/or registered civil engineer who has competence in the field of soils and shoring systems. The geologist or engineer will observe construction to ensure that the work is carried out in accordance with recommendations in the geotechnical report. If subsurface conditions encountered during construction are different from those encountered during the geotechnical investigation, the geologist or engineer will provide appropriate construction modifications, as warranted. After the area is cleared, but before building foundations are constructed, the geologist or engineer will evaluate the suitability of fill material beneath proposed building foundations and determine whether over excavation and replacement of fill at the project site will be necessary. Adherence to recommendations of the supervising geologist or engineer will be a condition of approval for the grading permit. (LTS)

Implementation of Mitigation Measure GEO-2 would reduce the potential impacts of unstable geologic units and expansive soils to less than significant.

d. Cumulative Impacts. Impacts related to geologic hazards are generally site-specific, rather than cumulative in nature, because each project area has unique geologic considerations that would be subject to uniform site development and construction standards. Therefore, the potential for

[13] Ibid.

cumulative impacts is limited to the project site and adjacent sites. Impacts associated with potential geologic hazards related to soil or other conditions occur at individual building sites. These effects are site-specific, and impacts would not be compounded by additional development. Other relevant cumulative projects in the vicinity would be expected to identify and mitigate, to the extent feasible, their respective impacts related to geology, soils, and seismicity, similar to the proposed project. Such mitigation measures would help minimize cumulative impacts generally. Furthermore, the project's implementation of the identified mitigation measures would ensure that the project would not make a cumulatively considerable contribution to any such impacts and the cumulative impact would be less than significant.

F. GREENHOUSE GAS EMISSIONS

This section assesses the project's potential greenhouse gas emissions in accordance with the requirements under CEQA. Information in this section is used to evaluate the potential impacts of the project with respect to the significance criteria set forth in the Impacts and Mitigation Measures section. Appendix C includes air quality modeling data used to quantify the project's emissions.

1. Setting

The following discussion describes existing greenhouse gas emissions in the region generally, beginning with a discussion of typical greenhouse gas types and sources, impacts of global climate change, the regulatory framework surrounding these issues, and current emission levels.

a. Greenhouse Gases. Global climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans in recent decades. Global surface temperatures have risen by 0.74°C (±0.18°C) over the last 100 years (1906–2005). The rate of warming over the last 50 years is almost double that over the last 100 years.[1] The prevailing scientific opinion on climate change is that most of the warming observed over the last 50 years is attributable to human activities. Human activities including fossil fuels burning, land clearing, agriculture, and others are releasing carbon dioxide (CO_2) and other greenhouse gases.[2] The increased amounts of greenhouse gases are the primary cause of the human-induced component of global warming.

Greenhouse gases are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced global climate change are the following:

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous oxide (N_2O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur hexafluoride (SF_6)

Over the last 200 years, humans have caused substantial quantities of greenhouse gases to be released into the atmosphere. These extra emissions are increasing greenhouse gas concentrations in the atmosphere and enhancing the natural greenhouse effect, believed to be causing global warming. While manmade greenhouse gases include naturally occurring greenhouse gases such as CO_2, CH_4, and N_2O, some gases, like HFCs, PFCs, and SF_6, are completely new to the atmosphere.

[1] Intergovernmental Panel on Climate Change, 2007. *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the IPCC.*

[2] The temperature on Earth is regulated by a system commonly known as the "greenhouse effect." Just as the glass in a greenhouse lets heat from sunlight in and reduces the heat escaping, greenhouse gases like carbon dioxide, methane, and nitrous oxide in the atmosphere keep the Earth at a relatively even temperature. Without the greenhouse effect, the Earth would be a frozen globe; thus, although an excess of greenhouse gas results in global warming, the *naturally occurring* greenhouse effect is necessary to keep our planet at a comfortable temperature.

Certain gases, such as water vapor, are short-lived in the atmosphere. For this reason, and because its atmospheric concentrations are largely determined by natural processes, water vapor is excluded from the list of greenhouse gases. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term.

These gases vary considerably in terms of global warming potential (GWP), a concept developed to compare the ability of each greenhouse gas to trap heat in the atmosphere relative to another gas. The GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that the gas remains in the atmosphere (atmospheric lifetime). The GWP of each gas is measured relative to CO_2, the most abundant greenhouse gas. The definition of the GWP for a particular greenhouse gas is the ratio of heat trapped by one unit mass of the greenhouse gas to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. Greenhouse gas emissions are typically measured in terms of pounds or tons of CO_2 equivalents (CO_2e). Table 4.F-1 shows the GWPs for each type of greenhouse gas. For example, SF_6 is 22,800 times more potent in contributing to global warming than CO_2.

Table 4.F-1: Global Warming Potential of Greenhouse Gases

Gas	Atmospheric Lifetime (Years)	Global Warming Potential Relative to Carbon Dioxide (100-year Time Horizon)
Carbon Dioxide	50-200	1
Methane	12	25
Nitrous Oxide	114	298
HFC-23	270	14,800
HFC-134a	14	1,430
HFC-152a	1.4	124
PFC: Tetrafluoromethane (CF_4)	50,000	7,390
PFC: Hexafluoromethane (C_2F_6)	10,000	12,200
Sulfur Hexafluoride (SF_6)	3,200	22,800

Source: Intergovernmental Panel on Climate Change, 2007. *Climate Change 2007: The Physical Science Basis.* Contribution of Working Group I to the Fourth Assessment Report of the IPCC.

The following discussion summarizes the characteristics of the major greenhouse gases.

(1) Carbon Dioxide. In the atmosphere, carbon generally exists in its oxidized form as CO_2. Natural sources of CO_2 include the respiration (breathing) of humans, animals and plants, volcanic outgassing, decomposition of organic matter, and evaporation from the oceans. Human caused sources of CO_2 include the combustion of fossil fuels and wood, waste incineration, mineral production, and deforestation. Natural sources release approximately 150 billion tons of CO_2 each year, far outweighing the 7 billion tons of man-made emissions of CO_2 each year. Nevertheless, natural removal processes, such as photosynthesis by land and ocean-dwelling plant species, cannot keep pace with this extra input of man-made CO_2, and, consequently, the gas is building up in the atmosphere.

In 2012, CO_2 emissions from fossil-fuel combustion accounted for approximately 94 percent of U.S. CO_2 emissions and approximately 86.5 percent of California's overall greenhouse gas emissions

(CO_2e)[3] from 2000-2012. The transportation sector accounted for California's largest portion of CO_2 emissions, with gasoline consumption making up the greatest portion of these emissions. Electricity generation was California's second largest category of greenhouse gas emissions.

(2) Methane. Methane is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources include wetlands, termites, and oceans. Decomposition occurring in landfills accounts for the majority of human-generated CH_4 emissions in California and in the United States as a whole. Agricultural processes such as intestinal fermentation, manure management, and rice cultivation are also significant sources of CH_4 in California. Methane accounted for approximately 7.2 percent of gross climate change emissions (CO_2e) in California from 2000-2014.[4]

Total annual emissions of methane are approximately 500 million tons, with manmade emissions accounting for the majority. As with CO_2, the major removal process of atmospheric methane—a chemical breakdown in the atmosphere—cannot keep pace with source emissions, and methane concentrations in the atmosphere are increasing.

(3) Nitrous Oxide. Nitrous oxide is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural source emissions. Nitrous oxide is a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion emit N_2O, and the quantity emitted varies according to the type of fuel, technology, and pollution control device used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N_2O emissions in California. Nitrous oxide emissions accounted for approximately 2.9 percent of man-made greenhouse gas emissions (CO_2e) in California from 2000-2012. [5]

(4) Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride. Hydrofluorocarbons are primarily used as substitutes for ozone-depleting substances regulated under the Montreal Protocol.[6] Perfluorocarbons and SF_6 are emitted from various industrial processes, including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. No aluminum or magnesium production occurs in California; however, the rapid growth in the semiconductor industry leads to greater use of PFCs. Hydro-fluorocarbons, PFCs, and SF_6 accounted for about 4.1 percent of man-made greenhouse gas emissions (CO_2e) in California from 2000-2012. [7]

(5) Black Carbon. Black carbon is the strongest light-absorbing component of PM formed by burning fossil fuels such as coal, diesel, and biomass. Black carbon is emitted directly into the

[3] California Environmental Protection Agency, Air Resources Board, 2014. *California Greenhouse Gas Emission Inventory: 2000-2012.* March.

[4] Ibid.

[5] Ibid.

[6] The Montreal Protocol is an international treaty that was approved on January 1, 1989, and was designated to protect the ozone layer by phasing out the production of several groups of halogenated hydrocarbons believed to be responsible for ozone depletion.

[7] Ibid.

atmosphere in the form of $PM_{2.5}$ and is the most effective form of PM, by mass, at absorbing solar energy. Per unit of mass in the atmosphere, black carbon can absorb a million times more energy than CO_2.[8] Black carbon contributes to climate change both directly, such as absorbing sunlight, and indirectly, such as affecting cloud formation. However, because black carbon is short-lived in the atmosphere, it can be difficult to quantify its effect on global-warming.

Most U.S. emissions of black carbon come from mobile sources (52 percent), particularly from diesel fueled vehicles. The other major source of black carbon is open biomass burning, including wildfires, although residential heating and industry also contribute. The California Air Resources Board (ARB) estimates that the annual black carbon emissions in California have decreased approximately 70 percent between 1990 and 2010 and are expected to continue to decline significantly due to controls on mobile diesel emissions.

b. Impacts of Climate Change. The potential impacts of global climate change are described in the following section.

(1) Temperature Increase. The latest projections, based on state-of-the art climate models, indicate that temperatures in California are expected to rise 3 to 10.5°F by the end of the century.[9] Because greenhouse gases persist for a long time in the atmosphere, accumulate over time, and are generally well-mixed, their impact on the atmosphere cannot be tied to a specific point of emission.

Climate change refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer). Climate change may result from the following:

- Natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun;
- Natural processes within the climate system (i.e., changes in ocean circulation and reduction in sunlight from the addition of greenhouse gases and other gases to the atmosphere from volcanic eruptions); or
- Human activities that change the atmosphere's composition (i.e., through burning fossil fuels) and the land surface (i.e., from deforestation, reforestation, urbanization, and desertification).

The primary effect of global climate change has been a rise in the average global temperature. The impact of human activities on global climate change is readily apparent in the observational record. For example, surface temperature data show that 11 of the 12 years from 1995 to 2006 rank among the 12 warmest since 1850, the beginning of the instrumental record for global surface temperature.[10] Climate change modeling shows that further warming could occur, which would induce additional changes in the global climate system during the current century. Changes to the global climate system, ecosystems, and the environment of California could include but are not limited to the following:

[8] U.S. EPA. 2015. *Black Carbon*. September. http://www3.epa.gov/blackcarbon/basic.html (accessed on February 17, 2016).

[9] California Climate Change Center, 2006. *Our Changing Climate. Assessing the Risks to California.* July.

[10] California, State of, 2008. California Energy Commission's Public Interest Energy Research Program. *The Future is Now: An Update on Climate Change Science, Impacts, and Response Options for California*. September.

- The loss of sea ice and mountain snowpack resulting in higher sea levels and higher sea surface evaporation rates with a corresponding increase in tropospheric water vapor due to the atmosphere's ability to hold more water vapor at higher temperatures;
- Rise in global average sea level primarily due to thermal expansion and melting of glaciers and ice caps in the Greenland and Antarctic ice sheets;
- Changes in weather that include widespread changes in precipitation, ocean salinity, and wind patterns, and more energetic aspects of extreme weather, including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones;
- Decline of the Sierra snowpack, which accounts for a significant amount of the surface water storage in California, by 70 percent to as much as 90 percent over the next 100 years;
- Increase in the number of days conducive to ozone formation by 25 to 85 percent (depending on the future temperature scenario) in high ozone areas of Los Angeles and the San Joaquin Valley by the end of the 21st century; and
- High potential for erosion of California's coastlines and seawater intrusion into the Delta and levee systems due to the rise in sea level.

(2) Precipitation and Water Supply. Most of California's precipitation falls in the northern part of the State during the winter. A vast network of man-made reservoirs and aqueducts capture and transport water throughout the State from Northern California rivers, as the greatest demand for water comes from users in the southern part of the State during the spring and summer.[11] The current distribution system relies on Sierra Nevada snowpack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snowpack, increasing the risk of summer water shortages.

Some models predict drier conditions and decreased water flows, while others predict wetter conditions in various parts of the world. If heat-trapping emissions continue unabated, more precipitation would fall as rain instead of snow, and the snow that does fall would melt earlier, thus reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent over the next 100 years.

The extent to which various meteorological conditions would impact groundwater supply is unknown. Warmer temperatures could increase the period when water is on the ground by reducing soil freeze. However, warmer temperatures could also lead to higher evaporation or shorter rainfall seasons, shortening the recharge season. Warmer winters could increase the amount of runoff available for groundwater recharge. However, the additional runoff would occur at a time when some basins, particularly in Northern California, are being recharged at their maximum capacity.

Where precipitation is projected to increase in California, the increases are focused in Northern California. However, various California climate models provide mixed results regarding changes in total annual precipitation in the State through the end of this century; therefore, no conclusion on an increase or decrease can be made. Considerable uncertainties about the precise effects of climate

[11] California Climate Change Center, 2006, op. cit.

change on California hydrology and water resources will remain until there is more precise and consistent information about how precipitation patterns, timing, and intensity will change.[12]

The Contra Costa Water District (CCWD) supplies water for the City, including the project site. The CCWD provides water to Antioch, Bay Point, Brentwood (portion), Clayton, Clyde, Concord, Oakley, Pittsburg, Port Costa, and to portions of Martinez, Pleasant Hill, and Walnut Creek. CCWD's sources originate from rivers within the Sierra, where the water flows into the Sacramento and San Joaquin rivers, eventually finding its way into the Delta.[13] A diminished snowpack in the Sierras could impact the CCWD's water supply. To address the current drought the CCWD has implemented a Drought Emergency Plan to reduce water consumption overall by 28 percent. The plan requires single family and multi-family residential, commercial and institutional customers to reduce water consumption by 25 percent compared to 2013, and its irrigation customers are required to reduce consumption by 45 percent.[14]

(3) Sea Level Rise. Rising sea level is one of the major areas of concern related to global climate change. Two of the primary causes for a sea level rise are the thermal expansion of ocean waters (water expanding as it heats up) and the addition of water to ocean basins by the melting of land-based ice. From 1961 to 2003, global average sea level rose at an average rate of 0.07 inches per year, and at an accelerated average rate of about 0.12 inches per year during the last decade of this period (1993 to 2003).[15] Over the past 100 years, sea levels along California's coasts and estuaries have risen about 7 inches.[16]

Sea levels could rise an additional 22 to 35 inches by the end of the century as global climate change continues.[17] Although these projections are on a global scale, the rate of sea level rise along California's coast is relatively consistent with the worldwide average rate observed over the past century. Therefore, it is reasonable to assume that changes in worldwide sea level rise would also be experienced along California's coast.[18]

Sea level rise of this magnitude would increasingly threaten California's coastal regions with more intense coastal storms, accelerated coastal erosion, threats to vital levees, and disruption of inland water systems, wetlands, and natural habitats. Rising sea levels and more intense storm surges could increase the risk for coastal flooding. The San Francisco Bay Conservation and Development

[12] California, State of, 2006. Department of Water Resources. *Progress on Incorporating Climate Change into Management of California's Water Resources*. July.

[13] Contra Costa Water District. *The Source of Your Water*. Website: https://ca-contracostawaterdistrict.civicplus.com/365/The-Source-of-Your-Water.

[14] Contra Costa Water District. *State Mandated 2015/16 Drought Emergency Plan*. Website: http://www.ccwater.com/529/State-Mandated-2015-Drought-Emergency-Pl.

[15] California, State of, 2008. California Energy Commission's Public Interest Energy Research Program. *The Future is Now: An Update on Climate Change Science, Impacts, and Response Options for California*. September.

[16] Ibid.

[17] California Climate Change Center, 2006. *Our Changing Climate. Assessing the Risks to California.* July.

[18] California, State of. Department of Water Resources, 2006. *Progress on Incorporating Climate Change into Management of California's Water Resources*. July.

Commission (BCDC) employed geographic information system software to identify the shoreline areas likely to be most impacted by a 1.0 meter rise in sea level.[19]

In the San Francisco Bay Area, the background rate of sea level rise has been estimated to be approximately 0.079 inch per year over the past 100 years.[20] An increased rate of sea level rise is anticipated in the near future due to projected global climate change. Although the rate of increase has not been precisely modeled and cannot be known with certainty, several projections predict a rise in sea level of at least 50 centimeters (approximately 20 inches) and as much as 200 centimeters (approximately 80 inches) by the year 2100.

(4) Water Quality. Water quality depends on a wide range of variables such as water temperature, flow, runoff rates and timing, waste discharge loads, and the ability of watersheds to assimilate wastes and pollutants. Climate change could alter water quality in a variety of ways, including higher winter flows that reduce pollutant concentrations (through dilution) or increased erosion of land surfaces and stream channels, leading to higher sediment, chemical, and nutrient loads in rivers. Water temperature increases and decreases water flows which can result in increasing concentrations of pollutants and salinity. Increases in water temperature alone can lead to adverse changes in water quality, even in the absence of changes in precipitation.

Land and resource use changes can have impacts on water quality comparable to or even greater than those from global climate change. The net effect on water quality for rivers, lakes, and groundwater in the future is dependent not just on climate conditions, but also on a wide range of other human actions and management decisions.

(5) Public Health. Global climate change is anticipated to result in not only changes to average temperature but also to more extreme heat events.[21] These extreme heat events increase the risk of death from dehydration, heart attack, stroke, and respiratory distress, especially with people who are ill, children, the elderly, and the poor, who may lack access to air conditioning and medical assistance. According to the California Climate Change Center, more research is needed to understand the effects of higher temperatures and how adapting to these temperatures can minimize health effects.

c. Regulatory Framework. The federal and State regulatory framework related to greenhouse gas emissions is described below.

(1) Federal Laws and Regulations. The United States has historically had a voluntary approach to reducing greenhouse gas emissions. However, on April 2, 2007, the United States Supreme Court ruled [549 U.S. 497 (2007)] that the U.S. Environmental Protection Agency (U.S. EPA) has the authority to regulate CO_2 emissions under the federal Clean Air Act (CAA). While there currently are no adopted federal regulations for the control or reduction of greenhouse gas emissions,

[19] California, State of, 2009. San Francisco Bay Conservation and Development Commission. *Climate Change*. Website: www.bcdc.ca.gov/planning/climate_change/climate_change.shtml (accessed June 24, 2014).

[20] National Oceanic & Atmospheric Administration (NOAA), 2007. *Mean Sea Level Trend (station)9414290 San Francisco, California.* http://co-ops.nos.noaa.gov/sltrends/sltrends_station.shtml?stnid=9414290 (accessed June 24, 2014).

[21] California Climate Change Center, 2006. *Our Changing Climate. Assessing the Risks to California.* July.

the U.S. EPA commenced several actions in 2009 to implement a regulatory approach to global climate change, including the ones described below.

On September 22, 2009, the U.S. EPA issued a final rule for mandatory reporting of greenhouse gases from large greenhouse gas emission sources in the United States. In general, this national reporting requirement would provide the U.S. EPA with accurate and timely greenhouse gas emissions data from facilities that emit 25,000 metric tons or more of CO_2 per year. This publicly-available data would allow the reporters to track their own emissions, compare them to similar facilities, and aid in identifying cost-effective opportunities to reduce emissions in the future. Reporting is at the facility level, except that certain suppliers of fossil fuels and industrial greenhouse gases, along with vehicle and engine manufacturers, would report at the corporate level. An estimated 85 percent of the total U.S. greenhouse gas emissions, from approximately 10,000 facilities, are covered by this rule.

On December 7, 2009, the U.S. EPA Administrator signed a final action under the CAA, finding that six greenhouse gases (CO_2, CH_4, N_2O, HFCs, PFCs, SF_6) constitute a threat to public health and welfare, and that the combined emissions from motor vehicles contribute to global climate change. This U.S. EPA action does not impose any requirements on industry or other entities. However, the findings are a prerequisite to finalizing the greenhouse gas emission standards for light-duty vehicles discussed further below. The U.S. EPA received ten petitions challenging this determination. On July 29, 2010, U.S. EPA denied these petitions.

On April 1, 2010, the U.S. EPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) announced a final joint rule to establish a national program consisting of new standards for model year 2012 through 2016 light-duty vehicles that would reduce greenhouse gas emissions and improve fuel economy. U.S. EPA is finalizing the first-ever national greenhouse gas emissions standards under the CAA, and NHTSA is finalizing Corporate Average Fuel Economy standards under the Energy Policy and Conservation Act. The U.S. EPA greenhouse gas standards require light-duty vehicles to meet an estimated combined average emissions level of 250 grams of CO_2 per mile in model year 2016, equivalent to 35.5 miles per gallon.

In December 2010, the U.S. EPA issued its plan for establishing greenhouse gas pollution standards under the CAA in 2011. The agency looked at a number of sectors and is moving forward on greenhouse gas standards for fossil fuel power plants and petroleum refineries – two of the largest industrial sources, representing nearly 40 percent of the greenhouse gas pollution in the United States.

On August 9, 2011, U.S. EPA and the NHTSA announced the first-ever standards to reduce greenhouse gas emissions and improve the fuel efficiency of heavy-duty trucks and buses. The final combined standards of the Heavy-Duty National Program would reduce CO_2 emissions by about 270 million metric tons (MMT) and save about 530 million barrels of oil over the life of vehicles built for the 2014 to 2018 model years. The heavy duty sector addressed in the U.S. EPA and NHTSA rules (including the largest pickup trucks and vans, semi-trucks, and all types and sizes of work trucks and buses in between) accounts for nearly 6 percent of all U.S. greenhouse gas emissions and 20 percent of transportation emissions. In addition, air quality would continue to improve as less fuel use leads to reduced ozone and particulate matter.

(2) State Laws and Regulations. In 1967, the California Legislature passed the Mulford–Carrell Act, which combined two Department of Health bureaus, the Bureau of Air Sanitation and the

Motor Vehicle Pollution Control Board, to establish the ARB. Since its formation, the ARB has worked with the public, the business sector, and local governments to find solutions to California's air pollution problems.

The ARB is typically the lead agency for implementing climate change regulations in the State. Many regulations and statutes in California address, both directly and indirectly, greenhouse gas emissions, such as renewable portfolio standards (SB 1078, SB 107, SB 2[1X]) and energy efficiency standards (Title 24, Cal. Code Regs.). Key State regulatory activities specifically addressing climate change and greenhouse gas emissions are discussed below.

Assembly Bill 1493 (2002). In a response to the transportation sector's significant contribution to California's CO_2 emissions, AB 1493 (Pavley) was enacted on July 22, 2002. AB 1493 requires the ARB to set greenhouse gas emission standards for passenger vehicles and light duty trucks (and other vehicles whose primary use is noncommercial personal transportation in the State) manufactured in 2009 and all subsequent model years. These standards (starting in model years 2009 to 2016) were approved by the ARB in 2004, but the needed waiver of CAA Preemption was not granted by the U.S. EPA until June 30, 2009. The ARB responded by amending its original regulation, now referred to as Low Emission Vehicle III, to take effect for model years starting in 2017 to 2025.

Executive Order S-3-05 (2005). Governor Arnold Schwarzenegger signed Executive Order S-3-05 on June 1, 2005, which proclaimed that California is vulnerable to the impacts of climate change. To combat those concerns, the executive order established California's greenhouse gas emissions reduction targets, with the following goals:

- Greenhouse gas emissions should be reduced to 2000 levels by 2010;
- Greenhouse gas emissions should be reduced to 1990 levels by 2020; and
- Greenhouse gas emissions should be reduced to 80 percent below 1990 levels by 2050.

The Secretary of the California Environmental Protection Agency is required to coordinate efforts of various State agencies in order to collectively and efficiently reduce greenhouse gases. A biannual progress report must be submitted to the Governor and State Legislature disclosing the progress made toward greenhouse gas emission reduction targets. In addition, another biannual report must be submitted illustrating the impacts of global warming on California's water supply, public health, agriculture, the coastline, and forestry, and report possible mitigation and adaptation plans to address these impacts.

Executive Order B-30-15 (2015). Governor Jerry Brown signed Executive Order B-30-15 on April 29, 2015, which added the immediate target of:

- Greenhouse gas emissions should be reduced to 40 percent below 1990 levels.

All state agencies with jurisdiction over sources of greenhouse gas emissions were directed to implement measures to achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 targets. ARB was directed to update the AB 32 Scoping Plan to reflect the 2030 target, and therefore, is moving forward with the update process. The mid-term target is critical to help frame the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to continue reducing emissions.

Assembly Bill 32 (2006), California Global Warming Solutions Act. California's major initiative for reducing greenhouse gas emissions is AB 32, passed by the State Legislature on August 31, 2006. This effort aims at reducing greenhouse gas emissions to 1990 levels by 2020. The ARB has established the level of greenhouse gas emissions in 1990 at 427 MMT CO_2e. The emissions target of 427 MMT requires the reduction of 169 MMT from the State's projected business-as-usual 2020 emissions of 596 MMT. AB 32 required the ARB to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce greenhouse gases that contribute to global climate change. The Scoping Plan was approved by the ARB on December 11, 2008, and contains the main strategies California will implement to achieve the reduction of approximately 169 MMT of CO_2e, or approximately 30 percent, from the State's projected 2020 emission level of 596 MMT of CO_2e under a business-as-usual scenario (this is a reduction of 42 MMT CO_2e, or almost 10 percent from 2002-2004 average emissions). The Scoping Plan also includes ARB-recommended greenhouse gas reductions for each emissions sector of the State's greenhouse gas inventory. The Scoping Plan calls for the largest reductions in greenhouse gas emissions to be achieved by implementing the following measures and standards:

- Improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO2e);
- The Low-Carbon Fuel Standard (15.0 MMT CO2e);
- Energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO2e); and
- A renewable portfolio standard for electricity production (21.3 MMT CO2e).

The Scoping Plan identifies 18 emission reduction measures that address cap-and-trade programs, vehicle gas standards, energy efficiency, low carbon fuel standards, renewable energy, regional transportation-related greenhouse gas targets, vehicle efficiency measures, goods movement, solar roof programs, industrial emissions, high speed rail, green building strategies, recycling, sustainable forests, water, and air. The measures would result in a total reduction of 174 MMT CO_2e by 2020.

On August 24, 2011, the ARB unanimously approved both ARB's new supplemental assessment and reapproved its Scoping Plan, which provides the overall roadmap and rule measures to carry out AB 32. The ARB also approved a more robust CEQA equivalent document supporting the supplemental analysis of the cap-and-trade program. The cap-and-trade took effect on January 1, 2012, with an enforceable compliance obligation that began January 1, 2013.

ARB has not yet determined what amount of greenhouse gas reductions it recommends from local government operations and local land use decisions; however, the Scoping Plan states that land use planning and urban growth decisions would play an important role in the State's greenhouse gas reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions (meanwhile, ARB is also developing an additional protocol for community emissions). ARB further acknowledges that decisions on how land is used will have large impacts on the greenhouse gas emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. The Scoping Plan states that the ultimate greenhouse gas reduction assignment to local government operations is to be determined. With regard to land use planning, the Scoping Plan expects an approximately 5.0 MMT CO_2e reduction due to implementation of SB 375.

In addition to reducing greenhouse gas emissions to 1990 levels by 2020, AB 32 directed the ARB and the newly created Climate Action Team (CAT) to identify a list of "discrete early action greenhouse gas reduction measures" that could be adopted and made enforceable by January 1, 2010. On January 18, 2007, Governor Schwarzenegger signed Executive Order S-1-07, further solidifying California's dedication to reducing greenhouse gases by setting a new Low Carbon Fuel Standard. The Executive Order sets a target to reduce the carbon intensity of California transportation fuels by at least 10 percent by 2020 and directs the ARB to consider the Low Carbon Fuel Standard as a discrete early action measure. In 2011, U.S. District Court Judge Lawrence O'Neil issued an injunction preventing implementation of the Low Carbon Fuel Standard, ruling that it is unconstitutional. In 2012, the Ninth Circuit Court of Appeal stayed the District Court's injunction, allowing implementation of the Low Carbon Fuel Standard while the appeal is pending. The Ninth Circuit has not yet issued its decision.

In June 2007, the ARB approved a list of 37 early action measures, including three discrete early action measures (Low Carbon Fuel Standard, Restrictions on GWP Refrigerants, and Landfill CH_4 Capture).[22] Discrete early action measures are measures that were required to be adopted as regulations and made effective no later than January 1, 2010, the date established by Health and Safety Code Section 38560.5. The ARB adopted additional early action measures in October 2007 that tripled the number of discrete early action measures. These measures relate to truck efficiency, port electrification, reduction of PFCs from the semiconductor industry, reduction of propellants in consumer products, proper tire inflation, and SF_6 reductions from the non-electricity sector. The combination of early action measures is estimated to reduce State-wide greenhouse gas emissions by nearly 16 MMT.[23]

The ARB approved the First Update to the Climate Change Scoping Plan on May 22, 2014, which is currently underway. The First Update identifies opportunities to leverage existing and new funds to further drive greenhouse gas emission reductions through strategic planning and targeted low carbon investments. The First Update defines ARB's climate change priorities until 2020, and also sets the groundwork to reach long-term goals set forth in Executive Orders S-3-05 and B-16-2012. The Update highlights California's progress toward meeting the "near-term" 2020 greenhouse gas emission reduction goals as defined in the initial Scoping Plan. It also evaluates how to align the State's "longer-term" greenhouse gas reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use. The ARB is moving forward with a second update to the Scoping Plan to reflect the 2030 target established in Executive Order B-30-15.

Senate Bill 350 (2015) Clean Energy and Pollution Reduction Act. SB 350, signed by Governor Jerry Brown on October 7, 2015, updates and enhances AB 32 by introducing the following set of objectives in clean energy, clean air, and pollution reduction for 2030:

- Raise California's renewable portfolio standard from 33 percent to 50 percent; and
- Increase energy efficiency in buildings by 50 percent by the year 2030.

[22] California Air Resources Board, 2007. *Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California Recommended for Board Consideration*. October.

[23] California Air Resources Board, 2007. "ARB approves tripling of early action measures required under AB 32" News Release 07-46. October 25.

The 50 percent renewable energy standard would be implemented by the California Public Utilities Commission for the private utilities and by the California Energy Commission for municipal utilities. Each utility must submit a procurement plan showing it will purchase clean energy to displace other non-renewable resources. The 50 percent increase in energy efficiency in buildings must be achieved through the use of existing energy efficiency retrofit funding and regulatory tools already available to state energy agencies under existing law. The addition made by this legislation requires state energy agencies to plan for, and implement those programs in a manner that achieves the energy efficiency target.

Senate Bill 375 (2008). Signed into law on October 1, 2008, SB 375 supplements greenhouse gas reductions from new vehicle technology and fuel standards with reductions from more efficient land use patterns and improved transportation. Under the law, the ARB approved greenhouse gas reduction targets in February 2011 for California's 18 federally designated regional planning bodies, known as Metropolitan Planning Organizations (MPOs). The ARB may update the targets every four years and must update them every eight years. MPOs in turn must demonstrate how their plans, policies and transportation investments meet the targets set by the ARB through Sustainable Community Strategies (SCS). The SCS are included with the Regional Transportation Plan (RTP), a report required by State law. However, if an MPO finds that their SCS will not meet the greenhouse gas reduction target, they may prepare an Alternative Planning Strategy (APS). The APS identifies the impediments to achieving the targets.

Senate Bill 97 (2007). SB 97, signed by the Governor in August 2007 (Chapter 185, Statutes of 2007; Public Resources Code, Sections 21083.05 and 21097), acknowledges climate change is a prominent environmental issue that requires analysis under CEQA. This bill directed the State Office of Planning and Research (OPR) to prepare, develop, and transmit to the California Natural Resources Agency guidelines for mitigating greenhouse gas emissions or the effects of greenhouse gas emissions, as required by CEQA.

The California Natural Resources Agency adopted the amendments to the CEQA Guidelines in January 2010, which went into effect in March 2010. The amendments do not identify a threshold of significance for greenhouse gas emissions, nor do they prescribe assessment methodologies or specific mitigation measures. The amendments encourage lead agencies to consider many factors in performing a CEQA analysis, but preserve the discretion granted by CEQA to lead agencies in making their own determinations based on substantial evidence. The amendments also encourage public agencies to make use of programmatic mitigation plans and programs when they perform individual project analyses.

(3) Regional Laws and Regulations. The Bay Area Air Quality Management District (BAAQMD) is the regional government agency that regulates sources of air pollution within the nine San Francisco Bay Area counties. The BAAQMD regulates greenhouse gas emissions through the following plans, programs, and guidelines.

Clean Air Plans. BAAQMD and other air districts prepare clean air plans in accordance with the State and federal CAAs. The Bay Area 2010 Clean Air Plan is a comprehensive plan to improve Bay Area air quality and protect public health through implementation of a control strategy designed to reduce emissions and ambient concentrations of harmful pollutants. The 2010 Clean Air Plan also

includes measures designed to reduce greenhouse gas emissions. The BAAQMD is in the process of updating this plan and will release an updated Clean Air Plan in 2016.

BAAQMD Climate Protection Program. The BAAQMD established a climate protection program to reduce pollutants that contribute to global climate change and affect air quality in the San Francisco Bay Area Air Basin. The climate protection program includes measures that promote energy efficiency, reduce vehicle miles traveled, and develop alternative sources of energy, all of which assist in reducing emissions of greenhouse gas and in reducing air pollutants that affect the health of residents. BAAQMD also seeks to support current climate protection programs in the region and to stimulate additional efforts through public education and outreach, technical assistance to local governments and other interested parties, and promotion of collaborative efforts among stakeholders.

BAAQMD CEQA Air Quality Guidelines. The BAAQMD CEQA Air Quality Guidelines were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background air quality information. The guidelines also include recommended assessment methodologies for air toxics, odors, and greenhouse gas emissions. In June 2010, the BAAQMD's Board of Directors adopted CEQA thresholds of significance and an update of the CEQA Guidelines. In May 2011, the updated BAAQMD CEQA Air Quality Guidelines were amended to include a risk and hazards threshold for new receptors and modified procedures for assessing impacts related to risk and hazard impacts.

As discussed in Section 4.B., Air Quality, under the 2011 CEQA Air Quality Guidelines, a local government may prepare a Qualified Greenhouse Gas Reduction Strategy that is consistent with AB 32 goals. If a project is consistent with an adopted qualified Greenhouse Gas Reduction Strategy and General Plan that addresses the project's greenhouse gas emissions, it can be presumed that the project would not have significant greenhouse gas emissions under CEQA. The 2011 Guidelines also included a quantitative threshold for project level analyses based on estimated greenhouse emissions as well as per capita metrics.

(4) Local Laws and Regulations. The City regulates greenhouse gas emission through implementation of the City's 2030 General Plan and the Citywide Climate Action Plan (CAP).

City of Concord General Plan. The Concord General Plan was adopted in October 2007 and addresses climate change through Principle S-1.4 and Policy S-1.4.1.[24] These policies work to reduce greenhouse gas emissions consistent with State objectives, and prepare and implement climate action plans for the Concord Reuse Project site and for the city as a whole to reduce greenhouse gas emissions associated with future development and existing urban activities. The following principles and policies specifically address air quality.

- *Principle S-1.4*: Reduce Greenhouse Gas Emissions Consistent with State Objectives.
- Policy S-1.4.1: Prepare and implement climate action plans for the Concord Reuse Project site and for the city as a whole to reduce greenhouse gas emissions associated with future development and existing urban activities.

[24] Concord, City of, 2007. *Concord 2030 General Plan*. October.

The City is taking action to address climate change through its land use and transportation policies by working on a Concord Community Reuse Project (CRP) Area Plan for the Concord Naval Weapons Station. The CRP Area Plan is intended to be one of the largest mixed-use, transit-oriented community developments in Northern California, and will be less reliant on automobiles and will yield far lower levels of greenhouse gas emissions per capital than conventional development.[25] The CRP Area Plan includes a Climate Action Plan that outlines the strategies for achieving this objective.

City of Concord Citywide Climate Action Plan. The City of Concord's Citywide Climate Action Plan (Citywide CAP) was adopted July 23, 2013.[26] The City's Citywide CAP meets the BAAQMD requirements for a Qualified Greenhouse Gas Reduction Strategy. The primary goals of the Citywide CAP are to reduce the emissions of greenhouse gases and reduce the City's contribution to global climate change. The City has identified the ways it will take action to support these goals while supporting the local economy and quality of life.[27] The strategies in the Citywide CAP include:

- **Building Performance** strategies save energy, water, and waste disposal costs through practical approaches for new, upgraded and existing buildings. These strategies fill information gaps for local building owners and anticipate statewide efficiency requirements.
- **Transportation Systems and Land Use** strategies make incremental, long-term improvements to increase the variety of viable transportation options within Concord and to make motor vehicle infrastructure more energy-efficient.
- **Adaptation** strategies coordinate infrastructure plans and emergency response programs, support habitat adaptation, and outreach to building owners to adapt to energy supply shortages during peak periods.
- **Participation** strategies applaud and engage local climate action leaders, and clearly identify the benefits of climate-friendly choices that community members can make, such as home retrofits, purchases large and small, energy choices, recycling, and water conservation.

The Citywide CAP aims to achieve a reduction of greenhouse gas emissions consistent with the BAAQMD 2010 Clean Air Plan, as shown in Table 4.F-2.

Table 4.F-2: Citywide CAP Greenhouse Gas Emissions Targets

Concord Citywide Target	Metric Tons CO_2e per year		
	2020	2030	2035
Per Person[1]	5.0[2]	4.0	3.2
Total	1,078,632	1,117,080	959,474

Notes:
1 Number of people includes both residents and employees in Concord.
2 The 2020 target could be as high as 6.6 metric tons CO_2e per person per year based on BAAQMD guidance, but is reduced to reflect direction from BAAQMD not to exceed the baseline per capita figure of 5.0.
Source: City of Concord, 2013.

[25] Ibid.
[26] Concord, City of, 2013. *City of Concord Citywide Climate Action Plan*. July.
[27] Ibid.

The Citywide CAP includes various strategies for reducing greenhouse gas emissions and adapting to the effects of climate change. The following strategies are applicable to the project:

- **BE1: Green Building Ordinance.** Implement the Tier I CALGreen Reach Code for building efficiency for new commercial buildings.
- **BE10: Construction Energy Use.** Reduce emissions from building construction by using cleaner fuels and equipment.
- **BH1: Water Efficient Indoor Fixtures and Appliances.** Improve fixture and appliance water efficiency in commercial and residential buildings by promoting information about rebates and incentives, and by continuing to ensure implementation of the CALGreen code.
- **BH2: Water Efficient Outdoor Irrigation.** Minimize water used to irrigate outdoor areas through application of the Development Code and promotion of expanded water-efficiency opportunities.
- **BH3: Water-Metering and Monitoring.** Incorporate best-in-class water use metering and monitoring for all new commercial and multi-family development.
- **BH4: Recycled Water.** Extend CRP recycled water system to the rest of the City for appropriate use in outdoor places and in buildings, and plan ahead for future expansion of the system.
- **TL5: Bike Parking Installations.** Require bike parking facilities for all multi-family projects and non-residential uses.
- **TL9: City Forest Plan.** Develop a street tree master plan for Downtown Concord and key street corridors. Specify species of shade trees with ample canopies in a list of approved trees for the City that are either native trees or otherwise likely to be drought-tolerant.
- **TL12: TDM and Transportation Management Associations.** Assess the feasibility of transportation management associations (TMAs), particularly for downtown and other areas with concentrations of employees. TMAs could include such Transportation Demand Management (TDM) measures as promotion of flexible schedules and telecommute options; active commuter showers; emergency ride-home programs; parking cash-out programs; carpool and vanpool facilitation programs; shuttle services, etc. and informational programs such as Contra Costa 511.
- **TL19: Parking Lot Shading.** Develop city-wide parking lot shading regulations to reduce the heat island effect and thereby lower local temperatures. Shading can be achieved through photovoltaic canopies, neighboring buildings, or shade trees of native species. Requirements may be stated as percent of lot area shaded per average daylight hour, averaged over one year in a modeled solar path.

  Allow additional shade trees (from list of approved, native or low-water shade trees, considering low-VOC trees) to be installed in existing non-residential parking lots without requiring replacement of lost parking spaces (when increase in building area or change in use is not being proposed) up to 10 percent of the parking spaces available before planting.
- **TL20: Cool Pavements.** Require paving that meets minimum Solar Reflectance Index (SRI) values that are higher than conventional paving in new developments and significant retrofit projects.
- **TL23: Preferred Motor Vehicle Parking.** Require designated, convenient parking stalls with signage for low-emitting, fuel-efficient vehicles and carpool/vanpool vehicles for workplaces

with at least 50 employees in appropriate locations. Adopt policies or policy modifications to allow use of public parking garages and public parking lots for car share use, consistent with planning efforts already underway for specific areas of Concord.

- **TL24: Active Commuter Showers.** Require showers for active commuters to freshen up at all new buildings or building additions as is appropriate to the number of commuters.
- **TL25: Electric Vehicle Charging Technology.** Study electric vehicle infrastructure technologies and policies to ensure there are no policy barriers to establishing charging stations in the City of Concord.

The strategies above are in addition to the CAP included in the CRP Area Plan (January 2012) for the site of the former Concord Naval Weapons Station. The strategies found in the CRP CAP will enable the City to meet its greenhouse gas reduction targets in the short- and medium-term through the development of the CRP Area Plan. The CRP CAP contributes significantly to the City's efforts to meet the target, representing up to 44 percent of the Buildings Performance reductions and up to 78 percent of the transportation systems and land use reductions, depending upon the level of building activity.[28]

d. Emissions Inventories. An emissions inventory that identifies and quantifies the primary human-generated sources and sinks of greenhouse gases is a well-recognized and useful tool for addressing climate change. This section summarizes the latest information on global, United States, California, and local greenhouse gas emission inventories.

(1) Global Emissions. Worldwide net emissions (including the effects of land use and forestry) of greenhouse gases in 2010 were 46 billion metric tons[29] of CO_2e per year.[30] This represents a 35 percent increase from 1990.

(2) United States Emissions. In 2012, the United States emitted about 6.5 billion metric tons of CO_2e or about 21 metric tons per year per person. The total 2012 CO_2e emissions represent a 5 percent increase since 1990 but a 10 percent decrease since 2005. Of the six major sectors nationwide – residential, commercial, agricultural, industry, transportation, and electricity generation – electricity generation accounts for the highest amount of greenhouse gas emissions since 1990 (approximately 32 percent), with transportation being a close second at 27 percent since 1990; these emissions are generated entirely from direct fossil fuel combustion.[31]

(3) State of California Emissions. The ARB is responsible for developing the California Greenhouse Gas Emission Inventory. This inventory estimates the amount of greenhouse gases emitted to and removed from the atmosphere by human activities within the State and supports the AB 32 Climate Change Program.

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[28] Ibid.

[29] A metric ton is equivalent to approximately 1.1 tons.

[30] U.S. Environmental Protection Agency, 2014. *Climate Change Indicators in the United States: Global Greenhouse Gas Emissions.* Website: www.epa.gov/climatechange/science/indicators/ghg/global-ghg-emissions.html.

[31] Ibid.

According to ARB emission inventory estimates, California emitted approximately 460 million metric tons of CO_2e emissions in 2012.[32] California ranks second in the nation in terms of total greenhouse gas emissions (Texas is highest), with a per-capita greenhouse gas emission rate of approximately 12 metric tons per person (43 percent less than the national average in 2012); only 5 other states (all in the northeast) have lower per-capita greenhouse gas emissions.[33]

California greenhouse gas emissions from the transportation sector—still the State's largest single source of greenhouse gases, contributing 36 percent of total emissions—declined modestly compared to 2011; however, over the past 7 years, transportation-related greenhouse gas emissions have dropped 12 percent.[34] The ARB attributes much of this decrease to the growing Statewide fleet of fuel-efficient vehicles—the hybrid vehicle market share increased in 2012 to 7.4 percent from the 2011 level of 5.4 percent.[35]

ARB staff has projected 2020 unregulated greenhouse gas emissions, which represent the emissions that would be expected to occur in the absence of any greenhouse gas reduction actions, at 507 MMT of CO_2e.[36] The total emissions are lower than originally forecast (596 MMT) in the AB 32 Scoping Plan to account for new estimates for future fuel and energy demand and accounting for the recent economic recession.

Greenhouse gas emissions in 2020 from the transportation sector as a whole are expected to increase to 184 MMT of CO_2e (2012 inventory is 167 MMT of CO_2e). The industrial sector consists of large stationary sources of greenhouse gas emissions and includes oil and gas production and refining facilities, cement plants, and large manufacturing facilities. Emissions for this sector are forecast to grow to 91.5 MMT of CO_2e by 2020, an increase of approximately 3 percent from the 2012 emissions inventory level. The commercial and residential sectors are expected to contribute 45.3 MMT of CO_2e, or about 9 percent of the total Statewide greenhouse gas emissions in 2020.[37]

(4) San Francisco Bay Area Emissions. The BAAQMD established a climate protection program in 2005 to acknowledge the link between climate change and air quality. The BAAQMD regularly prepares inventories of criteria and toxic air pollutants to support planning, regulatory and other programs. The most recent emissions inventory estimates greenhouse gas emissions produced by the San Francisco Bay Area in 2011.[38] The inventory, published in January 2015, updates the BAAQMD's previous greenhouse gas emission inventory for base year 2007.

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[32] California Air Resources Board, 2014. *Greenhouse Gas Inventory Data for 2000–2012*. http://www.arb.ca.gov/cc/inventory/data/data.htm.

[33] California Air Resources Board, 2014. *California Greenhouse Gas Emissions for 2000 to 2012: Trends of Emissions and Other Indicators*. 13 May. http://www.arb.ca.gov/cc/inventory/data/data.htm.

[34] Ibid.

[35] Ibid.

[36] California Air Resources Board, 2013. *Greenhouse Gas Inventory: 2020 Emissions Forecast.* http://www.arb.ca.gov/cc/inventory/data/forecast.htm.

[37] Ibid.

[38] Bay Area Air Quality Management District, 2010. *Source Inventory of Bay Area Greenhouse Gas Emissions.* February.

In 2011, 86.6 million metric tons of CO_2e of greenhouse gases were emitted by the San Francisco Bay Area. Fossil fuel consumption in the transportation sector was the single largest source of the San Francisco Bay Area's greenhouse gas emissions in 2011. The transportation sector (including on-road motor vehicles, locomotives, ships and boats, and aircraft) contributed 39.7 percent of greenhouse gas emissions and the industrial and commercial sectors (excluding electricity and agriculture) contributed 35.7 percent of greenhouse gas emissions in the Bay Area. Energy production activities such as electricity generation and co-generation were the third largest contributor with approximately 14 percent of the total greenhouse gas emissions. Off-road equipment such as construction, industrial, commercial, and lawn and garden equipment contributed 1.5 percent of greenhouse gas emissions.

(5) City of Concord Emissions. The City has prepared a baseline emissions inventory for 2005 and has forecast emissions inventories for 2020, 2030, and 2035.[39] The Citywide 2005 Baseline greenhouse gas emissions come from the following sources:

- On-road – Emissions from cars and trucks, based on the total number of vehicle miles traveled (VMT) for all trips that begin and end in the City and half of the total vehicle miles traveled for all trips that either begin or end in the City.
- Off-road – Emissions are based on hours of operation of off-road equipment including, construction equipment, landscaping equipment, all-terrain vehicles (ATVs), and other small sources owned by City businesses and residents.
- Electricity – Emissions from the electricity used in residential, commercial and industrial buildings or building construction, and also includes electric-powered public infrastructure such as public streetlights and traffic signals.
- Natural Gas – Emissions from the natural gas used in residential, commercial and industrial buildings.
- Water – Emissions from energy associated with water and wastewater treatment and conveyance, as well as the emissions released during the process of wastewater treatment.
- Waste – Emissions from energy used in waste management (such as waste hauling, waste processing and waste disposal operations), as well as emissions that are released when waste breaks down.

The 2005 baseline community-wide greenhouse gas emissions total 928,497 metric tons (MT) of CO_2e.[40] The breakdown of baseline emissions by source is shown in Table 4.F-3.

[39] Concord, City of. 2013, op. cit.

[40] Ibid.

Table 4.F-3: Citywide Greenhouse Gas Emissions by Source

Source	Percent Greenhouse Gas Emissions	Total Greenhouse Gas Emissions (MT CO_2e)
Mobile on-road	52	482,818.44
Mobile off-road	6	55,709.82
Electricity	16	148,559.52
Natural Gas	16	148,559.52
Water	1	9,248.97
Waste	9	83,564.73
Total	**100**	**928,497**

Source: City of Concord, 2013.

As shown in Table 4.F-3, approximately 58 percent of the greenhouse gas emissions in the City are related to transportation. This percentage reflects vehicles traveling on State highways as well as local roads.

2. Impacts and Mitigation Measures

The following section presents a discussion of the impacts related to greenhouse gas emissions that could result from implementation of the project.

A single project typically does not generate a sufficient quantity of greenhouse gas emissions to affect global climate change; therefore, the global climate change impacts of the project are discussed in the context of cumulative impacts, following the approach recommended by the BAAQMD. Therefore, this section begins by establishing the thresholds to determine whether an impact is significant. The latter part of this section identifies greenhouse gas emissions associated with existing operations within the project area and evaluates the greenhouse gas emissions expected to result from the project and the recommended feasible mitigation measures, if required.

a. Criteria of Significance. Section 15064.4 of the CEQA Guidelines states that: "A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project." In performing that analysis, the lead agency has discretion to determine whether to use a model or methodology to quantify greenhouse gas emissions, or to rely on a qualitative analysis or performance-based standards. In making a determination as to the significance of potential impacts, the lead agency then considers the extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting, whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project, and the extent to which the project complies with regulations or requirements adopted to implement a Statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions.

According to the BAAQMD CEQA Guidelines, if a project is consistent with an adopted qualified Greenhouse Gas Reduction Strategy that meets the standards, it can be presumed that the project would not have significant greenhouse gas emission impacts. This approach is consistent with the State CEQA Guidelines, Section 15183.5, and will be used in this analysis.

The City's Citywide CAP meets the BAAQMD requirements for a Qualified Greenhouse Gas Reduction Strategy. Therefore, the project's greenhouse gas emissions would not be considered a significant impact if the project would be consistent with the City's Citywide CAP.

b. Less-than-Significant Impacts. This project does not have any less than significant impacts related to greenhouse gas emissions. The project's contribution to greenhouse gas emissions are discussed in the Significant Impacts section below.

c. Significant Impacts. This section describes the potentially significant impacts of the project.

Impact GHG-1: Demolition and construction activities associated with the project would produce substantial greenhouse gas emissions (S)

(1) Demolition and Construction Impacts. Greenhouse gas emissions associated with the project would occur over the short term from demolition and construction activities, consisting primarily of emissions from equipment exhaust. Although the project's anticipated emissions from demolition and construction activities are quantified herein, in determining the potential significance from such activities, it is important to note the BAAQMD has not established quantified thresholds for construction greenhouse gas emissions. The BAAQMD recommends that greenhouse gas emissions are quantified and lead agencies are encouraged to incorporate best management practices to reduce greenhouse gas emissions during construction, as feasible and applicable.[41]

Demolition and construction activities associated with the project would produce combustion emissions from various sources. During demolition and construction, greenhouse gas emissions 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. The combustion of fossil-based fuels creates greenhouse gases such as CO_2, CH_4, and N_2O. Furthermore, CH_4 is emitted during the fueling of heavy equipment. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

The California Emissions Estimator Model version 2013.2.2 (CalEEMod) was used to estimate the project's demolition and construction-related emissions. Precise details of demolition and construction activities are unknown at this time; therefore, default assumptions (e.g., construction fleet activities) from CalEEMod were assumed.[42] According to the Applicant, demolition and construction activities are estimated to last 12 to 18 months. For purposes of this analysis the demolition and construction schedule for all improvements was assumed to be approximately 15 months. Using CalEEMod, it is estimated that total project construction activities would emit approximately 746 metric tons of CO_2e. Model output sheets with calculation details are included in Appendix C**.** As previously stated, the project's impacts would be considered significant and in conflict with the Citywide CAP if the project does not incorporate all feasible means to reduce greenhouse gas emissions during construction activities. Implementation of Mitigation Measures GHG-1a and GHH-1b would require the project to implement all feasible measures recommended by the BAAQMD to reduce construction-related greenhouse gas emissions.

[41] BAAQMD, 2011. Op. Cit.

[42] Default data in CalEEMod is based on a survey of construction sites grouped by construction phase and lot acreage and is recommended for use when site specific equipment and phases data is not available.

Mitigation Measure GHG-1a: Implement Mitigation Measure AIR-1.

Mitigation Measure GHG-1b: The Applicant shall ensure the following measures are implemented through all construction contracts and specifications for the project:

- The idling time of diesel powered construction equipment shall be minimized to 2 minutes.
- Low VOC (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings) shall be used.
- All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control Technology for emission reductions of NO_x and PM.
- All contractors shall use equipment that meets the ARB's most recent certification standard for off-road heavy-duty diesel engines.
- The project contractor shall use construction equipment that utilizes cleaner fuel and equipment. (LTS)

Implementation of Mitigation Measure GHG-1a and GHG 1b would incorporate all feasible means to reduce greenhouse gas emissions during the demolition and construction period to the extent feasible. Therefore, the project's demolition-related and construction-related impacts associated with greenhouse gas emissions would be considered less than significant.

Impact GHG-2: Long-term operation of the project could generate substantial greenhouse gas emissions from area and mobile sources as well as indirect emissions from sources associated with energy consumption, potentially in conflict with the City's Citywide Climate Action Plan (CAP). (S)

(2) Operational Emission Impacts. Long-term operation of the project would generate greenhouse gas emissions from area and mobile sources as well as indirect emissions from sources associated with energy consumption. Mobile-source greenhouse gas emissions would include project-generated vehicle trips associated with customer, employee, and vendor trips to the project site. Area-source emissions would be associated with consumption of natural gas and electricity and activities such as landscaping and maintenance of proposed land uses.

As discussed in Chapter 3.0, Project Description, approximately 795 trees were located on the site at the commencement of environmental review in January 2016, all of which are proposed for removal. Sixty-one of the trees are considered protected trees.[43] The project applicant would be required to obtain a permit to allow for the proposed removal and replacement of protected trees at a 3:1 replacement ratio. New landscaping compatible with the new shopping center layout would be installed throughout the project site. Pursuant to CMC 18.165, Landscaping, 20 percent of the project site would be landscaped with vegetation, including approximately 700 trees. Implementation of Mitigation Measure GHG-2 would ensure that the landscape plan would be in compliance with the City's Citywide CAP.

[43] As discussed in Section 4.C, Biological Resources, 93 trees were subsequently removed from the site in late January 2016, including 3 protected trees which will be replaced per City requirements.

The City's Citywide CAP meets the BAAQMD requirements for a Qualified Greenhouse Gas Reduction Strategy and, therefore, the significance of the project's impacts is based on the project's compliance with the measures identified in the Citywide CAP. Any project relying on the Citywide CAP for CEQA purposes must demonstrate consistency with the Citywide CAP.

The project's greenhouse gas emissions would not be considered a significant impact if the project were consistent with the strategies included in the CAP. The project's consistency with the relevant Citywide CAP strategies is discussed below in Table 4.F-4.

Table 4.F-4: Project Consistency with Citywide Climate Action Plan Strategies

Climate Action Plan Strategy	Project Consistency with Strategy
Building Performance Strategies	
BE1: Green Building Ordinance. Implement the Tier I CALGreen Reach Code for building efficiency for new commercial buildings.	***To Be Demonstrated.*** The City Building Division is not currently requiring that new commercial buildings comply with Title 24, Part 11 (Tier 1). In addition, current plans for the project do not provide sufficient detail to demonstrate consistency with this higher performance building standard. To the extent deemed feasible by the Building Official, the project construction plans would be reviewed for consistency with the applicable Title 24, Part 11 (Tier 1) standards prior to building permit issuance. Such standards may include, for example, requirements for indoor lighting efficiency, skylights in stores with controls to shut off lights when daylight is available, cool roof coating requirements, duct insulation, and efficient space conditioning. In addition, energy conservation features may include, for example: cool roof; high efficient windows; high efficiency domestic water heaters; LED lights; day light sensors that dim lighting when natural light is available; sky lights to bring in natural light; all interior and exterior lights that shut off 100 percent after hours (except for emergency lighting); occupancy sensors in offices, storage and bathrooms; HVAC systems with alarms to notify operations staff if economizer is faulty; and thermostats programmed and locked to not deliver conditioned air after hours.
BE10: Construction Energy Use. Reduce emissions from building construction by using cleaner fuels and equipment.	***To Be Demonstrated.*** Implementation of Mitigation Measure GHG-1b would include a requirement that the applicant submit a plan to demonstrate that construction equipment to be used at the site incorporates the best available technology and modern equipment utilizing cleaner fuels to minimize emissions.
BH1: Water Efficient Indoor Fixtures and Appliances. Improve fixture and appliance water efficiency in commercial and residential buildings by promoting information about rebates and incentives, and by continuing to ensure implementation of the CALGreen code.	***To Be Demonstrated.*** Current plans for the project do not provide sufficient detail to demonstrate compliance with Title 24, Part 11 (Tier 1), including the use of water efficient fixtures and appliances. To the extent deemed feasible by the Building Official, the project construction plans would be reviewed for consistency with the applicable Title 24, Part 11 (Tier 1) standards prior to building permit issuance.
BH2: Water-Efficient Outdoor Irrigation. Minimize water used to irrigate outdoor areas through application of the Development Code and promotion of expanded water-efficiency opportunities.	***Consistent.*** The project's landscaping and irrigation would be required to comply with CMC 18.165, Landscaping, and 18.170, Water Efficient Landscaping, consistent with the State's Model Water Efficient Landscape Ordinance. Also, the project's use of recycled water to irrigate landscaping would reduce demand for potable water.
BH3: Water-Metering and Monitoring. Incorporate best-	***To Be Demonstrated.*** Current plans for the project do not

Table 4.F-4: Project Consistency with Citywide Climate Action Plan Strategies

Climate Action Plan Strategy	Project Consistency with Strategy
in-class water use metering and monitoring for all new commercial and multi-family development.	provide sufficient detail to demonstrate the use of best-in-class water use metering and monitoring, Construction plans would be reviewed for water metering and monitoring features prior to building permit issuance.
BH4: Recycled Water. Extend CRP recycled water system to the rest of the City for appropriate use in outdoor places and in buildings, and plan ahead for future expansion of the system.	***Consistent.*** The project would utilize recycled water to irrigate landscaping at the project site, to the extent feasible and as permitted by the plumbing code.
Transportation Systems and Land Use Strategies	
TL5: Bike Parking Installations. Require bike parking facilities for all multi-family projects and non-residential uses.	***Consistent.*** The project would provide the required parking for bicycles (anticipated to be approximately 200 spaces), consistent with the City's requirement to provide short-term parking (intended for customers) equivalent to 5 percent of the required parking, and long-term parking (intended for employees) equivalent to 10 percent of the required parking. Short-term bicycle parking would be provided in bike racks throughout the shopping center. Long-term bicycle parking for employees would be provided in a secure storage area behind the main plaza, adjacent to restroom and shower facilities for employees.
TL9: City Forest Plan. Develop a street tree master plan for Downtown Concord and key street corridors. Specify species of shade trees with ample canopies in a list of approved trees for the City that are either native trees or otherwise likely to be drought-tolerant.	***Consistent.*** The project would include the planting of street trees pursuant to CMC 18.165, Landscaping. Street tree species would be reviewed and approved by staff prior to building permit issuance.
TL12: TDM and Transportation Management Associations. Assess the feasibility of transportation management associations (TMAs), particularly for downtown and other areas with concentrations of employees. TMAs could include such Transportation Demand Management (TDM) measures as promotion of flexible schedules and telecommute options; active commuter showers; emergency ride-home programs; parking cash-out programs; carpool and vanpool facilitation programs; shuttle services, etc. and informational programs such as Contra Costa 511.	***To Be Demonstrated.*** The project does not propose a TDM program. However, implementation of a TDM plan is recommended by Mitigation Measure TRANS-3.
TL19: Parking Lot Shading. Develop city-wide parking lot shading regulations to reduce the heat island effect and thereby lower local temperatures. Shading can be achieved through photovoltaic canopies, neighboring buildings, or shade trees of native species. Requirements may be stated as percent of lot area shaded per average daylight hour, averaged over one year in a modeled solar path. Allow additional shade trees (from list of approved, native or low-water shade trees, considering low-VOC trees) to be installed in existing non-residential parking lots without requiring replacement of lost parking spaces (when increase in building area or change in use is not being proposed) up to 10 percent of the parking spaces available before planting.	***Consistent.*** Pursuant to CMC 18.165, Landscaping, new landscaping compatible with the new shopping center layout would be installed on 20 percent of the project site, A minimum of 10 percent of the parking lot area would be landscaped, with trees planted within the parking areas so that 50 percent shading of the pavement is achieved within 10 years.
TL20: Cool Pavements. Require paving that meets minimum Solar Reflectance Index (SRI) values that are higher than conventional paving in new developments and significant retrofit projects.	***To Be Demonstrated.*** Current plans for the project do not provide sufficient detail to demonstrate the use of cool pavements. Construction plans would be reviewed for the incorporation of cool paving prior to the issuance of building permits.
TL23: Preferred Motor Vehicle Parking. Require	***Consistent.*** The project would designate eight parking

Table 4.F-4: Project Consistency with Citywide Climate Action Plan Strategies

Climate Action Plan Strategy	Project Consistency with Strategy
designated, convenient parking stalls with signage for low-emitting, fuel-efficient vehicles and carpool/vanpool vehicles for workplaces with at least 50 employees in appropriate locations. Adopt policies or policy modifications to allow use of public parking garages and public parking lots for car share use, consistent with planning efforts already underway for specific areas of Concord.	spaces for electric vehicles (EV), with electrical conduit to facilitate the potential future installation of charging stations.
TL24: Active Commuter Showers. Require showers for active commuters to freshen up at all new buildings or building additions as is appropriate to the number of commuters.	***Consistent.*** The project would provide a restroom and shower facility for employees.
TL25: Electric Vehicle Charging Technology. Study electric vehicle infrastructure technologies and policies to ensure there are no policy barriers to establishing charging stations in the City of Concord.	***Consistent.*** The project would designate eight parking spaces for electric vehicles with electrical conduit to facilitate the potential future installation of charging stations.

Source: LSA Associates, Inc., March 2016.

Implementation of the project would result in a long-term demand for electricity and natural gas. The project site currently has electricity and natural gas services provided by PG&E. As discussed in Section 4.K, Public Services and Utilities, the project would generate an annual electricity demand of approximately 7,359,524 kilowatt-hours per year (kWh/yr), and would result in an increase of approximately 5,408,234 kWh/year from the existing energy demand at the site due to its partial occupancy. For natural gas demand, the project would generate an annual natural gas demand of approximately 155,214 therms per year (therms/yr), which would result in an increase of 138,166 therms/yr from the existing condition (partial occupancy). Therefore, implementation of the project would result in an increase in demand for electricity and natural gas compared to the existing condition. As discussed in Table 4.F-4 above, the project would be in compliance with Title 24 and would implement energy conservation measures in the construction of the project and operation of the facilities; therefore, implementation of the project is not anticipated to result in a significant impact to the supply and distribution of electricity and natural gas.

As demonstrated in Table 4.F-4, the project's consistency with many of the Citywide CAP strategies would be determined by construction design decisions that are currently not evident from the conceptual plans evaluated for the environmental analysis in this Draft EIR. Implementation of Mitigation Measure GHG-2 would ensure the project incorporates design features consistent with the applicable Citywide CAP strategies.

> Mitigation Measure GHG-2: Prior to the issuance of a building permit, the applicant shall submit to the Planning Division a Greenhouse Gas Reduction Plan referencing construction plans details and specifications to document implementation and compliance with the following applicable Citywide CAP strategies. Implementation of the following Citywide CAP strategies is considered to be applicable, feasible, and effective in reducing greenhouse gas emissions generated by the project:
>
> - BE1: Design the proposed commercial buildings pursuant to the applicable provisions of Title 24, Part 11 (Tier 1), to the extent deemed feasible by the Building Official.
> - BE10: Implement a construction emissions reduction plan, as required by Mitigation Measure GHG-1b.

- BH1: Ensure all appliances and fixtures installed in project buildings are water efficient in accordance with Title 24, Part 11, Tier 1, to the extent deemed feasible by the Building Official.
- BH2: Implement water-efficient outdoor irrigation consistent with CMC 18.165 and CMC 18.170.
- BH3: Incorporate best-in-class water use metering and monitoring for all project buildings.
- BH4: Utilize recycled water for outdoor water irrigation, to the extent feasible, as permitted by the plumbing code
- TL5: Provide bicycle parking facilities.
- TL9: Install street tree species approved by City staff pursuant to CMC 18.165.
- TL12: Incorporate Transportation Demand Management (TDM) measures as required by Mitigation Measure TRANS-3.
- TL19: Install trees in the parking lots so that 50 percent shading of pavement is achieved within 10 years, pursuant to CMC 18.165.
- TL20: Install paving with Solar Reflectance Index (SRI) values greater than conventional paving.
- TL23: Provide preferred parking spaces for EVs and /or carpool vehicles, as required by Mitigation Measure TRANS-3.
- TL24: Provide a restroom and shower facility for employees as required by Mitigation Measure TRANS-3.
- TL25: Provide preferred parking spaces for EVs and /or carpool vehicles, as required by Mitigation Measure TRANS-3. (LTS)

With implementation of these strategies as required by Mitigation Measure GHG-2, the project would be in compliance with the Citywide CAP. The mitigated project would implement greenhouse gas reduction strategies in compliance with the Citywide CAP and would not be a significant source of greenhouse gas emissions. Therefore, the project's impacts would be less than significant.

(3) Compliance with the ARB Statewide Greenhouse Gas Emission Reduction Strategies. The Cal/EPA CAT and the ARB have developed several reports to achieve the State's greenhouse gas targets that rely on voluntary actions of California businesses, local government and community groups, and State incentives and regulatory programs. These reports include the CAT's 2006 "Report to Governor Schwarzenegger and the Legislature,"[44] ARB's 2007 "Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California,"[45] and ARB's "Climate Change Scoping Plan: a Framework for Change."[46] These 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 greenhouse gas reductions from direct regulations, alternative

[44] California Air Resources Board, 2006. *Report to Governor Schwarzenegger and the Legislature*.

[45] California Air Resources Board, 2007. *Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California Recommended for Board Consideration*. October.

[46] California Air Resources Board, 2008. *Climate Change Scoping Plan: a framework for change*. December.

compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as cap-and-trade systems.

In addition to reducing greenhouse gas emissions to 1990 levels by 2020, AB 32 directed ARB to identify a list of "discrete early action greenhouse gas 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,[47] and Landfill Methane Capture).[48]. 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.[49]

ARB's focus in identifying the 44 early action items was to recommend measures that ARB staff concluded were "expected to yield significant greenhouse gas emission reductions, [and] are likely to be cost-effective and technologically feasible." The combination of early action measures is estimated to reduce Statewide greenhouse gas emissions by nearly 16 MMT. Accordingly, the 44 early action items focus on industrial production processes, and the agriculture and transportation sectors. Early action items associated with industrial production and agriculture do not apply to the project. The transportation sector early action items such as truck efficiency, low carbon fuel standard, proper tire inflation, truck stop electrification, and the strengthening of light duty vehicle standards are either not specifically applicable to the project or would result in a reduction of greenhouse gas emissions associated with the project but are under the control of other regulatory agencies. State measures include emission reductions assumed as part of the Scoping Plan, including light-duty vehicle greenhouse gas standards (Pavley Standards), the low carbon fuel standard, and energy efficiency measures. The measures applicable to the project include energy efficiency measures, water conservation and efficiency measures, and transportation and motor vehicle measures, as discussed below.

Energy efficient measures are intended to maximize energy efficiency building and appliance standards, pursue additional efficiency efforts including new technologies and new policy and implementation mechanisms, and pursue comparable investment in energy efficiency from all retail providers of electricity in California. In addition, these measures are designed to expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings. As discussed in Table 4.F-4 above, the project would be required to comply with the applicable updated Title 24, Part 11 (Tier 1) standards for building construction including exterior lighting requirements.

Water conservation and efficiency measures are intended to continue efficiency programs and use cleaner energy sources to move and treat water. Increasing the efficiency of water transport and reducing water use would reduce greenhouse gas emissions. As described in Table 4.F-4 above, the project would comply with CMC 18.165, Landscaping, and CMC 18.170, Water Efficient Landscaping. In addition, with implementation of Mitigation Measure GHG-2, the project would

[47] Ibid.

[48] Ibid.

[49] Ibid.

utilize best-in-class water use metering and monitoring for all project buildings and recycled water for outdoor water irrigation. Therefore, the project would not conflict, but rather be consistent, with any of the water conservation and efficiency measures.

The goal of transportation and motor vehicle measures is to develop regional greenhouse gas emissions reduction targets for passenger vehicles. Local governments will play a significant role in the regional planning process to reach passenger vehicle greenhouse gas emissions reduction targets. Local governments have the ability to directly influence both the siting and design of new residential and commercial developments in a way that reduces greenhouse gases associated with vehicle travel. Specific regional emission targets for transportation emissions would not directly apply to the project. However, with implementation of Mitigation Measure GHG-2, the project would implement a TDM program, consistent with the intent of these transportation measures. The project would not conflict, but rather be consistent, with the identified transportation and motor vehicle measures.

Therefore, the project would not conflict with the AB 32 Scoping Plan, or the applicable early Statewide action measures in light of the sustainability measures incorporated into the project design. In addition, with implementation of Mitigation Measure GHG-2, the project would be in compliance with the City's Citywide CAP. The purpose of the Citywide CAP is to be consistent with State mandates, including AB 32, to reduce greenhouse gas emissions. The project would be compliant with the strategies developed by the State to reduce greenhouse gas emissions, and implementation of Mitigation Measure GHG-2 would ensure this consistency throughout the life of the project. Therefore, the project would be consistent with Statewide plans and strategies to reduce greenhouse gas emissions.

d. Cumulative Impacts. As discussed above, an analysis of impacts related to greenhouse gas is inherently cumulative. Given the project's consistency with the Citywide CAP and the nature of the project (commercial shopping center), the project would not result in a cumulatively considerable contribution to greenhouse gas emissions with the implementation of measures that are proposed as part of project, required by State or local regulations, or included as mitigation measures described above.

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G. HAZARDS AND HAZARDOUS MATERIALS

This section assesses the project's potential environmental impacts related to hazards and hazardous materials[1]. Information in this section is used to evaluate the potential impacts of the project with respect to the significance criteria set forth in the Impacts and Mitigation Measures section.

1. Setting

This section summarizes the existing conditions of the project site and environmental investigation activities performed to evaluate potential hazardous materials concerns. The regulatory framework related to hazardous materials and hazardous waste, hazardous building materials, and applicable worker health and safety requirements are also described.

a. Hazardous Materials Setting. The following sections summarize current and historical land uses at the project site and sampling activities conducted to evaluate potential environmental concerns. This section primarily relies on a Phase I/Phase II Environmental Site Assessment (Phase I/II) report prepared for the project site in September 2015.[2] The Phase I/II report is included in Appendix G. Phase I activities included the review of historical and regulatory records for the project site and vicinity and a site reconnaissance to determine the potential for Recognized Environmental Conditions (REC)[3], including hazardous materials contamination, to be present at the project site. Phase II activities included the collection and laboratory analysis of soil, soil vapor, groundwater, and surface wipe samples from the project site and comparison of the laboratory results to established risk-based screening levels.

The Phase I activities evaluated the potential for on-site and off-site sources of hazardous materials to affect the project site. The site reconnaissance and historical land use review evaluated both the project site and adjoining properties. The regulatory record review included a database search of hazardous materials sites listed in the project vicinity on federal, State, and local databases. This record review evaluated sites within approximately 1 mile of the project site, with the database search distance varying depending on the database. For example, the federal National Priorities List (NPL, popularly referred to as "Superfund") was searched up to 1.125 miles from the project site, while the Contra Costa County hazardous materials program listings, including sites that have a registered

[1] The California Health and Safety Code Section 25501 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 the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment."

[2] Northgate Environmental Management, 2015. *Phase I and Phase II Environmental Site Assessment, 2001/2003 Diamond Boulevard, Concord, California*, September 11, 2015.

[3] Recognized Environmental Condition (REC) means the presence or likely presence of hazardous substances or petroleum products on the site under conditions that indicate an existing release, a past release, or a material threat of a release of hazardous materials or petroleum products into structures on the subject site; or into the ground, groundwater, or surface water of the subject property. The term includes hazardous substances or petroleum products even under conditions in compliance with existing laws. The term is not intended to include de minimus conditions that generally do not present a material risk of harm to public health or the environment, and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

underground storage tank (UST), generate hazardous waste, or having a hazardous materials business plan, were searched up to 0.375 mile from the project site.

Using the hazardous materials site database search results, the Phase I/Phase II report evaluated the potential for listed sites to affect the project site. Based on review of available information, including distance from the project site, type of release, status of site investigation and remediation, and local groundwater flow direction, the report authors concluded that none of the hazardous materials sites in the project site vicinity had a significant potential to affect soil, soil vapor, or groundwater quality at the project site. Therefore, the Phase I/Phase II report focused on evaluating site-specific hazardous materials concerns relating to current and historical land uses at the project site.

(1) Current and Historical Land Uses. Based on historical aerial photographs, topographic maps, and city directories, the project site was used for agriculture from at least 1939 until the early 1970s when Buildings 1 and 2 were constructed. Additional buildings were built at the site by the mid-1980s. No changes to the project site were apparent after the mid-1980s. Based on interviews, the project site buildings were used as offices, primarily for credit-card processing, and no industrial land uses are known to have taken place at the project site. Hazardous materials use was limited to those required for a large office building complex, and included the use of refrigerants for air conditioning systems and lubricating oil in engines in natural-gas powered backup electrical generators and a natural-gas powered cogeneration plant.

During the 1980s, a cogeneration plant was constructed in Building 4 that used two natural-gas fueled engines to produce electricity for the facility while directing the heat generated to heat exchangers and absorption chillers used to provide hot water and cooling for the building. After the cogeneration plant was replaced by a modern boiler and condenser system in 2010, two USTs associated with the cogeneration plant, including one 4,000-gallon oil UST and one 2,500-gallon used oil UST, were removed from the west side of Building 4 under supervision of the Contra Costa Health Services (CCHS) Hazardous Materials Program. Composite soil samples from the base of the UST excavation pit and from the excavated soil were collected during UST removal activities and analyzed for oil and grease, petroleum hydrocarbons, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and metals. Although oil and grease and petroleum hydrocarbons in the diesel range were identified in the excavated soil sample, believed to be related to a minor release occurring during removal of UST piping, no contaminants of concern were detected in the base of the excavation. CCHS issued a letter in April 2011 stating that soils at the site did not pose a threat to human health and the environment, and that no further action was required at the site.

(2) Potential Hazardous Materials Concerns. Based on current and historical land uses, the Phase I report identified five potential hazardous materials concerns at the project site. These potential concerns are summarized below, and the subsequent evaluation results for these concerns are discussed under Phase II Sampling Activities and Phase II Sampling Results.

Agricultural Chemical Residues. The project site was used for agriculture from at least 1939 until the 1970s. During this period, many organic and inorganic agricultural chemicals no longer legal today were commonly used. Some of these compounds, including DDT and other organochlorine pesticides, do not readily break down under ambient conditions and, if historically used at the project site, may remain in project site soils.

Fill of Unknown Origin. Buildings 1 and 2 at the project site and landscape berms around Building 4 are elevated above surrounding areas and likely are underlain by imported fill material. As no documentation of the source of this fill material was available, it could potentially contain agricultural chemical residues or other hazardous materials from off-site sources.

Electrical Transformers. Electrical transformers were identified at two locations at the project site. Electrical transformers use dielectric fluid for insulation and cooling. Dielectric fluids used in the past often contained PCBs, prior to the banning of PCBs in 1979. If releases of dielectric fluid from the transformers had occurred in the past, PCBs could be present in nearby soils.

Elevator Hydraulic Fluid. A previous site evaluation cited in the Phase I/II report noted some minor staining from hydraulic fluid in two concrete-lined elevator pits at the project site. Hydraulic fluid manufactured prior to 1979 may contain PCBs; if such hydraulic fluid was used and released, PCBs could be present on the concrete floor in the elevator pits.

Cogeneration Plant and Heating and Cooling Systems. Although no documented releases of hazardous materials at the project site were identified during Phase I activities, operation of the cogeneration plant and cooling towers at the project site required the use of significant quantities of hazardous materials, including petroleum products and refrigerants. A release of these chemicals could result in contaminants being present in soil, soil vapor, and/or groundwater at the project site.

(3) Phase II Sampling Activities. Phase II activities were conducted in August 2015 to evaluate the hazardous materials concerns identified above and generally characterize soil vapor and groundwater quality at the project site. The sampling activities are described below, with results provided in the next section.

Agricultural Chemical Residues. Sixteen shallow soil samples were collected from seven locations at the project site and analyzed for organochlorine pesticides, total arsenic, and total lead.

Fill of Unknown Origin. Four shallow soil samples were collected from four locations on elevated fill pads and landscape berms at the project site and analyzed for petroleum hydrocarbons, organochlorine pesticides, and total metals.

Electrical Transformers. Four shallow soil samples were collected near the two transformer banks and analyzed for PCBs.

Elevator Hydraulic Fluid. Wipe samples were collected from the concrete floor of hydraulic elevator pits in Buildings 2 and 3 and analyzed for PCBs.

Former Cogeneration Plant and Heating and Cooling Systems. Nine deeper soil samples were collected from four locations near the cooling towers, former cogeneration plant, former UST locations, and former oil/water separator. These samples were analyzed for petroleum hydrocarbons, VOCs, and metals.

Groundwater Quality Evaluation. Based on surface topography, shallow groundwater in the project vicinity is presumed to flow to the north or northwest.[4] Two groundwater samples were collected in the southern part of the site to characterize upgradient groundwater quality (groundwater migrating onto the site). One groundwater sample was collected near the northern site boundary to characterize groundwater migrating off the site, to compare it to the upgradient samples. Six additional samples were collected near the former cogeneration plant and heating and cooling systems. The groundwater samples were analyzed for petroleum hydrocarbons, VOCs, and metals, with four samples near the cooling towers also analyzed for hexavalent chromium.

Soil Vapor Quality Evaluation. Seven soil vapor samples were collected from the project site and analyzed for VOCs. Three locations were parking lots in the southern and eastern portions of the project site (hydraulically upgradient), one sample was located near the northern site boundary (hydraulically downgradient), and three samples were located north (hydraulically downgradient) of the former cogeneration plant and cooling towers.

(4) Phase II Sampling Results. Laboratory results from the Phase II activities were compared to Environmental Screening Levels (ESLs) established by the San Francisco Bay Area Regional Water Quality Control Board (RWQCB). ESLs are conservative, risk-based thresholds used for preliminary review of laboratory data. Values exceeding ESLs do not necessarily constitute a health risk but do indicate that additional investigation or analysis may be warranted. ESLs have been established for both residential and commercial/industrial land uses; since the proposed project is a commercial land use, ESLs for commercial/industrial land uses are used in the discussion below.

Metals results were also compared to naturally occurring concentrations and California hazardous waste thresholds, and groundwater results were compared to State Maximum Contaminant Levels (MCLs), which are drinking water standards. Results are summarized below.

Shallow Soil Quality. Organochlorine pesticides, including DDT, dieldrin, and endrin, were identified in 15 of the 20 shallow soil samples. All concentrations were below commercial/industrial ESLs. Arsenic and lead were identified at concentrations consistent with naturally occurring concentrations in Bay Area soils. PCBs were not identified in any of the shallow soil samples. Petroleum hydrocarbons in the diesel and motor oil range were identified in samples of the undocumented fill material, but below applicable ESLs.

Deeper Soil Samples. No VOCs were identified above laboratory reporting limits. Two of the nine deeper samples contained petroleum hydrocarbons in the diesel range; the concentrations were below ESLs. Metals concentrations were consistent with naturally occurring concentrations.

Groundwater. The VOC MTBE (associated with gasoline) was identified in one of the two upgradient groundwater samples. The MTBE concentration was below the applicable MCL and the ESL for potential vapor intrusion risks.

[4] Ibid.

One of the six groundwater samples near the former cogeneration plant and cooling towers contained petroleum hydrocarbons in the diesel range slightly above the ESL for drinking water. As diesel does not contain volatile components, no ESLs for vapor intrusion risks have been established.

Three of the six groundwater samples near the former cogeneration plant and cooling towers contained VOCs. The VOCs included benzene, toluene, tert butanol, and naphthalene (associated with gasoline and diesel fuel); DBCP (an agricultural fumigant), and 1,2,4-trichlorobenzene (associated with mothballs). Of the VOCs, only DBCP was identified above MCLs and ESLs for vapor intrusion risks. Following receipt of this result, two additional groundwater samples were collected from locations about 75 feet upgradient and 150 feet downgradient of the location containing DBCP. DBCP and other VOCs were not identified in the two additional samples.

Soil Vapor. Five of the seven soil vapor samples did not contain VOCs above the laboratory reporting limit. The remaining two samples, located north of the former cogeneration plant and cooling towers, contained the VOCs benzene, ethylbenzene, and xylenes (associated with gasoline) and Freon 11 and Freon 12 (refrigerants) above laboratory reporting limits, but below commercial/industrial ESLs.

Wipe Samples. None of the wipe samples from the hydraulic elevator pits contained PCBs above laboratory reporting limits.

(5) Phase II Conclusions. No soil result was detected above ESLs. The only laboratory result identified above commercial/industrial ESLs for vapor intrusion (for organic compounds) or naturally occurring concentrations (for metals) was a groundwater sample containing DBCP. Additional samples collected immediately upgradient and downgradient of the sampling location did not contain DBCP; therefore, the DBCP result is isolated and does not appear to represent a significant historical hazardous materials release warranting additional investigation and/or remediation. [5]

b. Hazardous Materials Regulatory Framework. The following section provides the federal, State, and local regulatory framework for hazardous materials and hazardous waste, hazardous building materials (such as lead and asbestos) that could be encountered during building demolition activities, and worker health and safety.

(1) Hazardous Materials and Hazardous Waste. The use, storage, and disposal of hazardous materials, including management of contaminated soils and groundwater, is regulated by numerous local, State, and federal laws and regulations. The U.S. Environmental Protection Agency (U.S. EPA) is the federal agency that administers hazardous materials and hazardous waste regulations. State and local agencies include the California EPA (Cal/EPA), which includes the California Department of Toxic Substances Control (DTSC), the State Water Board, the California Air Resources Board (CARB), the San Francisco Bay Regional Water Quality Control Board (Regional Water Board), the Bay Area Air Quality Management District (BAAQMD), and the Contra Costa Health Services (CCHS) Hazardous Materials Programs. A brief description of each federal,

[5] Ibid.

State, and regional/local agency's jurisdiction and involvement in the management of hazardous materials and wastes is provided below.

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 Act of 1986 (SARA), and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). The U.S. EPA provides oversight for certain site investigation and remediation projects and has developed protocols for sampling, testing, and evaluation of solid wastes.[6]

State. Three State agencies, described below, regulate hazardous materials and waste that may occur on or around the project site.

Department of Toxic Substances Control. In California, DTSC is authorized by the U.S. EPA to enforce and implement federal hazardous materials laws and regulations. California regulations pertaining to hazardous materials are equal to or exceed federal regulation requirements. Most State hazardous materials regulations are contained in Title 22 of the California Code of Regulations (CCR). DTSC often 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.

State Water Resources Control Board. The State Water Board enforces, among other statutes and regulations, those regulations pertaining to implementation of UST programs. It also allocates monies to eligible parties who request reimbursement of State funds to clean up soil and groundwater pollution from UST leaks. The State Water Board also enforces the Porter-Cologne Water Quality Act of 1969 through its nine regional boards, including the Regional Water Board, described below.

California Air Resources Board. This agency is responsible for coordination and oversight of State and local air pollution control programs in California, including implementation of the California Clean Air Act of 1988. CARB has developed State air quality standards and is responsible for monitoring air quality in conjunction with the local air districts.

Regional and Local Agencies. The following regional and local agencies have regulatory authority over the proposed project.

San Francisco Bay Regional Water Quality Control Board. The Regional Water Board can act as lead agency to provide oversight of sites where the quality of groundwater or surface waters is threatened and has the authority to require investigations and remedial actions. The Regional Water Board also administers permits under the National Pollutant Discharge Elimination System (NPDES) program to protect water quality, discussed in more detail in Section 4.H, Hydrology and Water Quality.

[6] U.S. Environmental Protection Agency, 2007. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846*.

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 the U.S. EPA and CARB). The BAAQMD is responsible for preparing attainment plans for non-attainment criteria pollutants, control of stationary air pollutant sources, management of VOC-containing soils (District Rule 8-40), and the issuance of permits for activities including asbestos demolition and renovation activities (District Rule 11-2).

*Contra Costa Health Services (CCHS) Hazardous Materials Programs.*CCHS is the Certified Unified Program Agency (CUPA) for the project site and enforces State and local regulations pertaining to hazardous waste generators and risk management prevention programs in Contra Costa County. The purpose of the Unified Program is to ensure that facilities properly manage and disclose hazardous materials used to minimize the risk of a hazardous materials release and improve emergency response actions in the event of a release. As established by Cal/EPA, the Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities for the following six environmental and emergency response programs:

- Hazardous Waste Generator Program (Health and Safety Code [H&SC] Chapter 6.5)
- Hazardous Waste Tiered Permitting (H&SC Chapter 6.5)
- USTs (H&SC Chapter 6.7)
- Aboveground Storage Tanks (ASTs) (H&SC Chapter 6.67)
- Hazardous Materials Business Plans (H&SC Chapter 6.95)
- California Accidental Release Prevention Program (H&SC Chapter 6.95)

CCHS issues permits for USTs and oversees UST removals, and it ensures Spill Prevention Control and Countermeasure (SPCC) Plans are prepared for sites with large ASTs. In addition, CCHS may act as lead agency to ensure proper remediation of LUST sites and other contaminated sites.

Concord General Plan. The Safety and Noise Element of the City of Concord General Plan contains goals and policies related to hazardous materials that would apply to the project. These policies are discussed in Table 4.I-1 in Section 4.I, Land Use and Planning Policy.

(2) Lead, Asbestos, and Other Hazardous Building Materials. Prior to 1978, lead compounds were commonly used in exterior and interior paints. Lead is a suspected human carcinogen (i.e., may cause cancer), a known teratogen (i.e., causes birth defects), and a reproductive toxin (i.e., can cause sterility). Prior to the 1980s, building materials often contained asbestos fibers, which are a known human carcinogen. Asbestos, used to provide strength and fire resistance, was frequently incorporated into insulation, roofing, and siding, textured paint and patching compounds used on wall and ceiling joints, vinyl floor tiles and adhesives, and water and steam pipes.

PCBs have been used as coolants and lubricants in transformers, capacitors, heating/cooling equipment, and other electrical equipment. PCBs have not been manufactured in the United States since 1977 but may still be found in older electrical equipment and other building materials, such as light ballasts. PCBs have been associated with acne-like skin conditions in adults and changes in the nervous and immune system in children. PCBs are also known to cause cancer in laboratory animals

and are probable human carcinogens.[7] PCB or PCB-contaminated items require proper off-site transport and disposal at a facility that can accept such wastes.

Fluorescent lighting tubes and ballasts, computer displays, and several other common items containing hazardous materials (including mercury, a heavy metal) are regulated as "universal wastes" by the State of California. Universal waste regulations allow common, low-hazard wastes to be managed under less stringent requirements than other hazardous wastes. Management of other hazardous wastes is governed by DTSC hazardous waste rules.

(3) Worker Health and Safety. Worker health and safety is regulated at the federal level by the U.S. Department of Labor, OSHA. The Federal Occupational Safety and Health Act of 1970 authorizes states to establish their own safety and health programs with OSHA approval. Worker health and safety protections in California are 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 consultant assistance to employers. California standards for workers dealing with hazardous materials are contained in California Code of Regulations (CCR) Title 8 and include practices for all industries (General Industrial Safety Orders), and specific practices for construction, and other industries. Workers at hazardous waste sites (or workers who may be exposed to hazardous wastes that might be encountered during excavation of contaminated soils) must receive specialized training and medical supervision according to the Hazardous Waste Operations and Emergency Response (HAZWOPER) regulations.[8] Additional regulations have been developed for construction workers potentially exposed to lead[9] and asbestos.[10] Cal/OSHA enforcement units conduct on-site evaluations and issue notices of violation to enforce necessary improvements to health and safety practices.

c. Aviation Setting and Regulatory Framework. The project site is located approximately 0.5 mile south of Buchanan Field. Buchanan Field served as an Army airbase during World War II and was acquired by Contra Costa County and converted to a public use airport in 1946.[11]

The entire project site is located within the Airport Influence Area of Buchanan Field, and the western portion of the project site is located within Safety Zone 4.[12] In accordance with the Airport Land Use Compatibility Plan, land uses within Safety Zone 4 must be limited to buildings with no more than four habitable floors above ground, and aboveground storage of more than 2,000 gallons of fuel or other hazardous materials is prohibited in residential or commercial areas.

Aviation in Contra Costa County is regulated by the Federal Aviation Administration, the California Department of Transportation Division of Aeronautics, and the Airports Division of the Contra Costa

[7] Agency for Toxic Substances and Disease Registry, 2001. *Toxic FAQs for Polychlorinated Biphenyls*. February.

[8] California Code of Regulations, Title 8, Section 5192.

[9] California Code of Regulations, Title 8, Section 1532.1.

[10] California Code of Regulations, Title 8, Section 1529.

[11] Contra Costa County Airport Land Use Commission, 2000, *Contra Costa County Airport Land Use Compatibility Plan*, December 13.

[12] Ibid.

County Public Works Department. The Contra Costa County Airport Land Use Commission (ALUC) enforces these regulations as they apply to land uses at and near County airports.

The Land Use Element of the Concord General Plan contains policies regarding land use near airports that will affect the project. These policies are listed and discussed in Table 4.I-1 in Section 4.I, Land Use and Planning Policy.

2. Impacts and Mitigation Measures

The following section presents a discussion of the impacts related to hazards and hazardous materials that could result from implementation of the proposed project. The section begins with the criteria of significance, which establishes the threshold for determining whether an impact is significant. The latter part of this section presents the impacts associated with implementation of the proposed project and the recommended mitigation measures, if required.

a. Significance Criteria. Pursuant to the CEQA Guidelines Appendix G, Environmental Checklist Form, the project would result in a significant impact related to hazards and hazardous materials if it 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 or accident conditions involving the release of hazardous materials into the environment;
- Create a significant hazard to the public or environment through exposure to hazardous materials which may be present in soils, groundwater, and/or building materials as a result of historical land uses at the project site or in the project vicinity;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;
- Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area; 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 Impacts. Less-than-significant impacts related to hazards and hazardous materials are discussed below.

(1) Routine Transport, Use, or Disposal of Hazardous Materials. The proposed project involves construction of commercial retail buildings. Most retail land uses do not involve transport, use, or disposal of significant quantities of hazardous materials. Generally, small quantities of

hazardous materials, such as paints, cleaning chemicals, and fertilizers, would be used for routine maintenance and landscaping. Some retail uses, such as a clothing drycleaners, could transport, use, store, and dispose of hazardous materials such as laboratory chemicals and dry cleaning solvents. Existing hazardous materials programs overseen by CCHS would apply to any significant transport, use, or disposal of hazardous materials. These existing programs would ensure protection of human health and the environment during project operations.

During project construction, hazardous materials such as fuel, lubricants, paint, sealants, and adhesives would be transported and used at the project site. As the project site is greater than 1 acre in area, management of these materials at the project site during construction would be subject to the requirements of the Construction General Stormwater Permit (CGP) in accordance with the National Pollutant Discharge Elimination System (NPDES). Compliance with the CGP would require preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) designed to reduce the risk of spills or leaks from reaching the environment (discussed in Section 4.H, Hydrology and Water Quality). The SWPPP would also include a Spill Response Plan to address minor spills of hazardous materials.

Compliance with applicable laws and regulations would ensure that potentially significant hazards associated with routine transport, use, or disposal of hazardous materials during and after construction would be less than significant.

(2) Release of Hazardous Materials. Hazardous materials (e.g., fuels, lubricants, paints, adhesives) would be transported and used on-site for proposed construction and redevelopment activities. As noted above, a Spill Response Plan would be required for project construction as part of the SWPPP. This would reduce potential impacts from releases of hazardous materials during construction to a less-than-significant level. During operation of the project, hazardous materials used at the retail development would be managed in accordance with applicable hazardous materials programs and no significant impact related to hazardous materials release would be anticipated.

(3) Hazardous Materials Associated with Historical Uses. No evidence of soil, soil vapor, or groundwater contamination likely to affect human health or the environment was identified during Phase II investigation of the project site. However, buildings to be demolished as part of project construction could contain hazardous materials that could be released during construction, potentially causing a health risk to construction workers and nearby members of the general public.

Buildings at the project site were built during the 1970s and early 1980s and therefore may have lead-based paint, asbestos-containing materials, and/or other hazardous building materials such as PCB-containing transformers, capacitors, heating/cooling equipment, and/or light ballasts, and/or mercury-containing fluorescent light bulbs and thermometers. Although these hazardous materials do not pose a significant threat to public health or the environment in their intact condition, demolition/renovation activities have the potential to break up and release these materials to the air, where they can pose a potential hazard. Any construction that could disturb asbestos is subject to BAAQMD Rule 11-2, Asbestos Demolition, Renovation, and Manufacturing. Section 303.8 of the rule requires a survey of structures for asbestos-containing materials prior to demolition or renovation activities. Section 401 requires BAAQMD notification 10 days prior to demolition where a significant quantity of asbestos may be removed. All abatement is subject to state regulations in Title 8 California Code of Regulations, Sections 341.6-341.14 and 1529.

Compliance with the programs and regulations above would ensure that potential significant hazards associated with the potential release of hazardous building materials during demolition and renovation activities would be less than significant.

(4) Emit Hazardous Materials Near Schools. There are no existing schools located within a quarter mile of the project site. The nearest existing school is the Valley View Middle School, which is located approximately 0.5 mile southwest of the project site in the City of Pleasant Hill. Therefore, this potential impact is less than significant.

(5) Government Code Section 65962.5. No hazardous materials releases at the project site were identified on any environmental list or database reviewed for the Phase I/II investigation. As discussed above, under Hazardous Materials Setting, regulatory agency lists and databases were searched up to a distance of 1.125 miles from the project site to identify hazardous materials sites with the potential to affect the project site. Although the project site was listed on databases for aboveground and underground storage tanks and disposal of hazardous waste, none of these listings were related to a spill or release of hazardous materials. None of the other hazardous materials sites identified in the list and database search were judged to have the potential to affect the project site. Therefore, this impact is less than significant.

(6) Emergency Response/Evacuation Plans. The proposed project would not be expected to impair implementation of or interfere with any emergency response or evacuation plans in the vicinity of the project site. The proposed project would redevelop an already developed parcel and no significant changes to vehicular or pedestrian traffic near the project site would be anticipated. Potential impacts to emergency evacuation routes or emergency response plans from the proposed project are therefore considered less than significant.

(7) Aviation Hazards. As noted in the Aviation Setting section, the project site is located within a safety zone and the Airport Influence Area (AIA) of Buchanan Field. The heights of the proposed one-story retail buildings to be developed for the project (generally 30-40 feet with a maximum structure height of 60 feet) are similar to the current building heights at the project site (up to 65 feet). Because of its location, the project is subject to review by the ALUC in accordance with General Plan policies LU-7.1.2, LU-7.1.3, and LU-7.1.4 to ensure that the design does not create a potential obstruction hazard for aircraft using Buchanan Field or other safety hazard. The City forwarded the proposed application to the ALUC for review, and ALUC staff determined that the project is consistent with the ALUC Plan.[13] Therefore, potential aviation hazards associated with the proposed project are considered less than significant.

(8) Increased Risk of Exposure to Wildland/Urban Fires. The project site is surrounded by urbanized uses and is not located within a mapped wildland fire hazard area.[14] The proposed project would be required to conform to the California Fire Code and California Building Code, and other requirements of the City of Concord Building Division and Contra Costa County Fire Protection District (which services Concord) to reduce the potential for structural fires. The District conducted

[13] Contra Costa County Airport Land Use Commission, 2016. *CENTERCAL Shopping Center, File #PL15-0466-ALUC Review letter to Frank Abejo*. January 11.

[14] Cal Fire, 2009. *Contra Costa County Very High Fire Hazard Severity Zones in LRA*. September 3.

an initial review of the proposed project in January 2016 and did not identify any significant concerns.[15] Compliance with City and County requirements and building codes would reduce potential impacts from fire hazards, including wildland fires, to a less-than-significant level.

c. Significant Impacts. The project would not result in any significant impacts with compliance with the regulatory practices and requirements specified above.

d. Cumulative Impacts. Cumulative impacts occur when impacts from a proposed project combine with similar impacts from other past, present, or reasonably foreseeable projects in a similar geographic area. The geographic context for cumulative hazards and hazardous materials impacts is the project site and adjoining areas that could be affected by releases of hazardous material that could migrate across property lines, such as fugitive dust generated during construction activities.

No cumulative impacts related to hazards or hazardous materials were identified that would be compounded by additional projects that may be implemented in the project vicinity. During project construction, construction activities may occur at one or more of the cumulative projects listed on Table 6.E-1 or other sites in the vicinity. One or more of these sites may have contaminated soils which could potentially result in a cumulative impact related to hazardous materials in fugitive dust. However, all construction sites would be subject to the requirements of the BAAQMD and other regulatory agencies which are designed to abate common sources of hazardous materials at construction sites (such as lead-based paint and asbestos) and prevent fugitive dust with contaminants from escaping construction sites. Furthermore, the project would be required to adhere to all applicable laws and regulations and would be subjected to similar mitigation measures to ensure impacts are less than significant. Therefore, the project's contribution to any potential cumulative impact would not be considerable. Similarly, the operation of other cumulative developments would be required to comply with the applicable regulatory framework and otherwise to feasibly mitigate impacts related to hazards and hazardous materials. As described above, operation of the project would not result in any significant cumulative impacts related to hazards and hazardous materials because no significant use of hazardous materials (beyond minor quantities of maintenance and other chemicals associated with retail uses) would occur during the operational phase of the project.

Since the project site is not located within a wildfire hazard area, no individual-level or cumulative impact would occur relative to wildfire hazards. Similarly, since the project would not exceed specified building heights, no cumulative impact related to aviation hazards would occur.

[15] Contra Costa County Fire Protection District, 2016. *CenterCal Shopping Center; PL 15466, project review letter to Frank Abejo*. January 7.

H. HYDROLOGY AND WATER QUALITY

This section assesses the project's potential environmental impacts on hydrology and water quality. Information in this section is used to evaluate the potential impacts of the project with respect to the significance criteria set forth in the Impacts and Mitigation Measures section.

1. Setting

This subsection describes the existing hydrological setting at and near the project site; the laws and regulations affecting water resources at the federal, State, and local level; and local policies and programs related to hydrology and water quality.

a. Existing Conditions

(1) Climate. The climate of the San Francisco Bay Area is characterized as Mediterranean, with cool, wet winters and warm, dry summers. The mean annual rainfall in the vicinity of the project site for the period between 1991 and 2012 was approximately 18 inches, with rainfall occurring primarily from November through March.[1] During the period of record, annual rainfall has varied from approximately 11 inches (2007) to approximately 27 inches (1995).[2] The average annual high temperature is approximately 73º Fahrenheit (F); the average annual low temperature is approximately 50º F.[3] Wetter and drier cycles lasting several years are common in the region; the San Francisco Bay Area and much of California is currently in an extended drought.

(2) Runoff and Drainage. The approximately 30-acre project site is developed with office buildings, paved parking lots and driveways, and landscaped areas. The existing landscaping covers approximately 19 percent of the project site. The project site is relatively flat with elevations ranging from approximately 26 to 28 feet referenced to the National Geodetic Vertical Datum of 1929 (NGVD).[4] Stormwater drainage and collection services to the project site are provided by the City of Concord (City). Stormwater runoff at the project site currently drains through a network of storm drain inlets interconnected by subsurface storm drain lines that connect to City stormwater drainage infrastructure. Stormwater runoff from much of the project site is conveyed to existing twin 24-inch diameter outfalls near the northwest corner of the project site that discharge into a storm drain along the northeast side of I-680. Existing 12-inch diameter and 15-inch diameter storm drain lines drain smaller areas within the northeastern portion of the project site to a storm drain box culvert located beneath Diamond Boulevard.

The project site is located within the Grayson Creek Sub-Watershed of the Walnut Creek Watershed. The Walnut Creek Watershed drains an area of 93,556 acres in Central Contra Costa County between

[1] Western Regional Climate Center, 2012a. *Period of Record General Climate Summary – Precipitation. Station 041967 – Concord Waste Water Plant.* Available online at: http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca1967 (accessed February 5, 2016).

[2] Ibid.

[3] Ibid.

[4] Kier & Wright, Civil Engineers & Surveyors Inc., 2015. T*opographic Survey of 2001-2003 Diamond Boulevard.* September.

the west side of Mount Diablo and the east side of the East Bay Hills and the Grayson Creek Sub-Watershed drains an area of 11,021 acres in the northwestern portion of the Walnut Creek Watershed.[5] The project site is located between Grayson Creek (a drainage channel approximately 0.25 mile to the west) and Walnut Creek (a drainage channel approximately 0.25 mile to the east). Based on an inspection of the drainage facilities during the February 2016 site reconnaissance, and the review of a storm drain map provided by the City of Concord[6] and Google Earth aerial imagery, stormwater runoff from the project site is conveyed to the box culvert beneath Diamond Boulevard and is discharged to an earthen drainage ditch that flows from south to north through the center of the Buchanan Field Golf Course and then along the west side of the Buchanan Field Airport prior to being discharged into Grayson Creek. Grayson Creek conveys stormwater runoff from south to north, and discharges to Walnut Creek north of the Buchanan Field Airport. Walnut Creek ultimately discharges into Suisun Bay.

(3) Flooding. The project site is not located within a 100-year flood hazard area mapped by the Federal Emergency Management Agency (FEMA).The project site is within FEMA Zone X - Other Flood Hazard Areas that includes areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.[7] According to FEMA's National Flood Hazard Layer for Google Earth,[8] the project site is located within an area of 0.2% annual chance flood and is not within an area protected from flooding by levees; thus the project site has a low flooding risk.

In general, catastrophic dam failures can cause flooding in downstream areas. Some of the primary causes of collapse and structural failure of dams are: severe storms, earthquakes, internal erosion and foundation leakage.[9] Based on a dam failure inundation map prepared by the Association of Bay Area Governments (ABAG), [10] the project site may be located within the dam inundation area of the Lafayette Reservoir that surrounds Walnut Creek.[11] The safety of dams in Contra Costa County is regulated by the State Department of Water Resources (DWR), Division of Safety of Dams (DOSD).[12] All large reservoirs in Contra Costa County have been investigated and many have been

[5] Contra Costa County Community Development Agency, 2004. *Contra Costa County Watershed Atlas*. Available online at: http://38c.6ce.myftpupload.com/wp-content/uploads/Watershed-Atlas.pdf (accessed February 5, 2016).

[6] City of Concord, 2011. Op. cit.

[7] Federal Emergency Management Agency, 2009. *Flood Insurance Rate Map (FIRM), Contra Costa County, California, Map Number 06013C0281F*. June 16.

[8] Federal Emergency Management Agency, 2015. *National Flood Hazard Layer for Google Earth*, Available at: https://www.fema.gov/national-flood-hazard-layer-nfhl (accessed February 8, 2016).

[9] Contra Costa County 2015. C*ontra Costa County Emergency Operations Plan.* Available at: http://ca-contracostacounty2.civicplus.com/DocumentCenter/View/37349 (accessed February 8, 2016).

[10] Association of Bay Area Governments 1995. *Dam Failure Inundation Areas.* Available at: http://resilience.abag.ca.gov/wp-content/documents/Map-Plates.pdf (accessed February 8, 2016).

[11] It is difficult to distinguish whether the project site is located within or just in close proximity to the dam failure inundation area of the Lafayette Reservoir due to the scale of the ABAG map. More detailed mapping of dam failure inundation areas in the vicinity of the project site could not be located. Therefore, for purposes of a conservative analysis, this DEIR assumes the project site is located within the above-referenced dam failure inundation area.

[12] Contra Costa County 2000. C*ontra Costa County General Plan, Chapter 10, Safety Element.*

strengthened.[13] East Bay Municipal Utility District (EBMUD, the dam operator) performed a geotechnical investigation of the Lafayette Reservoir in 2008 and concluded that the Lafayette Reservoir is deemed safe for continued operation.[14] Contra Costa County categorizes dam failure as a low risk natural hazard; a lower risk event than earthquakes, severe weather, landslides, floods, wildfires, and drought.[15]

(4) Coastal Hazards. The elevation of the project site, ranging from approximately 26 to 28 feet NGVD,[16] and its distance from the Suisun Bay (approximately 5 miles to the north), precludes it from damage associated with coastal hazards, such as sea level rise, coastal seiches, tsunami, or extreme high tides, which tend to present hazards for sites at lower elevations.

(5) Seiches. A seiche is the oscillation of a body of water. Seiches occur most frequently in enclosed or semi-enclosed basins such as lakes, bays, or harbors. Seiches can be triggered in an otherwise still body of water by strong winds, changes in atmospheric pressure, earthquakes, tsunamis, or tides. Triggering forces that set off a seiche operate at specific frequencies relative to the size of an enclosed basin. Coastal measurements of sea level often show seiches with amplitudes of a few centimeters and periods of a few minutes due to oscillations of the local harbor, estuary, or bay, superimposed on the normal tidal changes.[17] Seiches could also occur in reservoirs and cause overtopping of dams, particularly when the reservoirs are near capacity, releasing flow downstream. For purposes of this analysis, it is assumed that the project site is located in a dam failure inundation area of the Lafayette Reservoir; therefore overtopping of the dam due to seiching could potentially result in flood flow traveling toward the project site. Flood flows resulting from overtopping of dams are far less significant than flood flows resulting from catastrophic dam failure. Based on the distance from the Lafayette Reservoir to the project site (approximately 7.5 miles), potential flood flows from seiche related dam overtopping at the Lafayette Reservoir would not result in flooding at the project site.

(6) Water Quality. The quality of storm water, surface water, and groundwater in the vicinity of the project site is affected by past and current land uses at the project site and within the watershed, and by the composition of geologic materials in the vicinity.

Stormwater and Surface Water Quality. As explained above, stormwater runoff from the project site drains to Grayson Creek, which discharges to Walnut Creek and ultimately to the Suisun Bay. The Water Quality Control Plan (Basin Plan) for the San Francisco Bay Area[18] indicates that

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[13] Ibid.

[14] East Bay Municipal Utility District, 2008. *Supplemental Geotechnical Investigation Report, Lafayette Dam, 31-2*. November.

[15] Contra Costa County 2015. C*ontra Costa County Emergency Operations Plan.* Available at: http://ca-contracostacounty2.civicplus.com/DocumentCenter/View/37349 (accessed February 8, 2016).

[16] Kier & Wright, Civil Engineers & Surveyors Inc., 2015. T*opographic Survey of 2001-2003 Diamond Boulevard.* September.

[17] Borrero, J., L. et al., 2006. *Numerical Modeling of Tsunami Effects at Marine Oil Terminals in San Francisco Bay*. Prepared for the Marine Facilities Division of the California State Lands Commission. June 8.

[18] San Francisco Bay Regional Water Quality Control Board, 2015a. *San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan)*. March 20.

Grayson Creek and Walnut Creek provide the existing beneficial uses of cold and warm freshwater habitat, fish migration, preservation of rare and endangered species, wildlife habitat, and water contact and non-contact recreation. Walnut Creek additionally provides the existing beneficial use of fish spawning habitat. Suisun Bay provides all of the beneficial uses discussed above with the exception of cold and warm freshwater habitat, and also provides the beneficial uses of industrial and process water supply, commercial and sports fishing, estuarine habitat, and navigation. [19]

The San Francisco Bay Regional Water Quality Control Board (Regional Water Board) has designated Grayson Creek, Walnut Creek, and Suisun Bay as impaired water bodies pursuant to Section 303(d) of the Clean Water Act.[20] Grayson Creek is list as impaired for trash, Walnut Creek is listed as impaired for the pesticide diazinon, and Suisun Bay is listed as impaired for pesticides, dioxin compounds, furan compounds, invasive species, metals, polychlorinated biphenyls (PCBs), and polybrominated diphenyl ethers (PBDEs). Total daily maximum loads (TDMLs) have been established for diazinon in Walnut Creek and for mercury in Suisun Bay. TMDLs are being developed for the other contaminants in Suisun Bay.[21] TDMLs describe the maximum amount of a pollutant that a water body can receive while still meeting water quality standards. Once a TMDL has been developed, they are implemented by allocating waste loads via National Pollutant Discharge Elimination System (NPDES) permits. The regulatory framework for designating impaired water bodies, establishing TMDLs, and NPDES permits is discussed below.

Groundwater Quality. The Ygnacio Valley groundwater basin underlies the project site and is listed in the Basin Plan as having the potential to support the beneficial uses of municipal and domestic water supply, industrial process water supply, industrial service water supply, and agricultural water supply. [22] Potable water service to the project site, provided by Contra Costa Water District (CCWD), is primarily imported from the Sacramento- San Joaquin Delta, and does not rely on the local groundwater basin. During geotechnical investigation activities performed in August 2015, groundwater was encountered beneath the project site at depths ranging from approximately 10 to 15 feet below ground surface (bgs).[23] The depth to groundwater may fluctuate in response to seasonal changes, prolonged rainfall, changes in surface topography, and other factors. Concentrations of volatile organic compounds (VOCs), petroleum hydrocarbons, and heavy metals were detected in groundwater samples collected at the project site in 2015.[24]

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[19] San Francisco Bay Regional Water Quality Control Board, 2015a. *San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan)*. March 20.

[20] State Water Resources Control Board, 2012. *Impaired Water Bodies.* Available: http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2012.shtml (accessed February 8, 2016).

[21] The TMDLs for Suisun Bay are still under development and are not anticipated to be adopted prior to approval of the project.

[22] San Francisco Bay Regional Water Quality Control Board, 2015. *San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan)*. March 20.

[23] GeoDesign Inc., 2015. *Report of Geotechnical Engineering Services, Proposed Retail Center, 2001- 2003 Diamond Boulevard, Concord, California*. September 29.

[24] Northgate Environmental Management, Inc., 2015. *Phase I and Phase II Environmental Site Assessment, 2001/2003 Diamond Boulevard, Concord, California.* September 11.

b. Regulatory Framework. Federal, State, and local laws, regulations, orders, and plans relevant to hydrology and water resources that may be affected by the project are presented below**.**

(1) Federal Clean Water Act. The federal Clean Water Act (CWA) of 1972 and subsequent amendments, under the enforcement authority of the U.S. Environmental Protection Agency (USEPA), were enacted "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The CWA gave the USEPA the authority to implement pollution control programs, such as setting wastewater standards for industry. It also set water quality standards for surface waters and established the NPDES program to protect water quality.

CWA Section 303(d). In accordance with Section 303(d) of the CWA, states must present the USEPA with a list of "impaired water bodies," defined as those water bodies that do not meet water quality standards. The CWA requires the development of TMDLs or other actions to improve water quality of impaired water bodies. Implementation of this program in the project area is conducted by the Regional Water Board as discussed under State regulations, below.

CWA Section 402. Under Section 402 of the CWA, discharge of pollutants to navigable waters is prohibited unless the discharge is in compliance with an NPDES permit. Implementation and enforcement of the NPDES program is conducted through the State Water Board and the nine Regional Water Quality Control Boards (RWQCBs). The RWQCBs set standard conditions for each permittee in their region, which includes effluent limitations and monitoring programs. The proposed project would be subject to NPDES permits described under the State regulatory framework, below.

(2) State. Water quality in stormwater, surface water, and groundwater in California is regulated by the State Water Board and the RWQCBs**.**

Porter-Cologne Water Quality Control Act. The Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code) provides for the protection of the quality of all waters of the State of California for use and enjoyment by the people of California. The act also establishes provisions for a statewide program for the control of water quality, recognizing that waters of the State are increasingly influenced by interbasin water development projects and other statewide considerations, and that factors such as precipitation, topography, population, recreation, agriculture, industry, and economic development vary regionally within the State. The statewide program for water quality control is therefore administered on a local level with statewide oversight. Within this framework, the act authorizes the State Water Board and RWQCBs to oversee the coordination and control of water quality within California.

San Francisco Bay Area Water Quality Control Plan (Basin Plan). The RWQCB implements the Basin Plan,[25] a master 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. The Regional Water Board also evaluates the water quality within water bodies to determine if they are impacted by pollutants such that it would impair its use. Impaired waters are rivers, lakes,

[25] San Francisco Bay Regional Water Quality Control Board, 2015a. *San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan)*. March 20.

or streams that do not meet one or more water quality standards and are considered too polluted for the intended beneficial uses.

Stormwater. The State Water Board administers a number of stormwater programs to regulate the discharge of pollutants to surface waters from various sources, including municipal stormwater discharges and construction site stormwater discharges.

Municipal Regional Permit. Pursuant to Section 402 of the Clean Water Act and the Porter-Cologne Water Quality Control Act, municipal stormwater discharges in the City of Concord are regulated under a regional NPDES permit (NPDES Permit No. CAS612008, State Water Board Order No. R2-2015-0049) for the discharge of stormwater from municipal separate storm sewer systems (Municipal Regional Permit). The State Water Board issues the Municipal Regional Permit that is locally overseen by the RWQCB. The City of Concord is a part of the Contra Costa County Clean Water Program (CCCCWP) that assists cities, towns, and unincorporated areas across the County with complying with the Municipal Regional Permit, provides guidance and staff training, and implements some public outreach and water-quality monitoring. Provision C.3 of the Municipal Regional Permit requires implementation of low impact development (LID) source control, site design, and stormwater treatment for regulated projects. Projects that replace over 5,000 square feet of impervious uncovered parking lot area are regulated and categorized as a Special Land Use. Additionally, projects that include alteration of over 50 percent of the impervious surface of a previously existing development that was not subject to Provision C.3 of the Municipal Regional Permit require stormwater treatment systems to be designed and sized to treat stormwater runoff from the entire site. LID employs principles such as preserving and recreating natural landscape features and minimizing impervious surfaces to create functional and appealing site drainage that treats stormwater as a resource, rather than as a waste product. Practices used to adhere to these LID principles may include, among others, 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.[26] The City of Concord requires regulated projects to prepare a Stormwater Control Plan in accordance with the Stormwater C.3. Guidebook prepared by CCCCWP, which provides guidance on compliance with Provision C.3 of the Municipal Regional Permit.[27] The project would be subject to such laws and regulations and would be required to comply with all applicable requirements and standards.

Provision C.3.g of the Municipal Regional Permit pertains to hydromodification management.[28] The Municipal Regional Permit requires that stormwater discharges do not cause an increase in the erosion potential of the receiving stream over the existing condition. Increases in runoff flow and volume must be managed so that the post-project runoff does not exceed estimated pre-project rates and durations, where such increased flow and/or volume is likely to cause increased potential for

[26] California Regional Water Quality Control Board, San Francisco Bay Region, 2015b. *San Francisco Bay Region, Municipal Regional Stormwater NPDES Permit, Order No. R2-2015-0049, NPDES Permit No. CAS612008.* November 19.

[27] City of Concord, 2016. *Stormwater Guide.* Available: http://www.cityofconcord.org/page.asp?pid=6400 (accessed February 8, 2016).

[28] Hydromodification or hydrograph modification causes streambank erosion, channelization, increased flood flows, and other physical modifications that can adversely impact aquatic ecosystems due to increased sedimentation and reduced water quality (e.g., higher water temperatures, lower dissolved oxygen concentrations).

erosion of creek beds and banks, silt pollutant generation, or other adverse impacts on beneficial uses due to increased erosive force. The project site is located within an area where regulated projects are subject to hydromodification management. Accordingly, the project would be subject to such laws and regulations and would be required to comply with all applicable requirements and standards.

Construction General Permit. Projects disturbing more than 1 acre of land during construction are required to comply with the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ (as amended by Order No. 2010-0014-DWQ and 2012-006-DWQ), NPDES No. CAS000002 (Construction General Permit [CGP]). Similar to the MS4 Permit, the CGP is issued by the State Water Board and locally is overseen by the Regional Water Board.

To obtain coverage under the CGP, the project applicant must provide via electronic submittal, a Notice of Intent (NOI), a Storm Water Pollution Prevention Plan (SWPPP), and other documents required in Attachment B of the Construction General Permit. Activities subject to the Construction General Permit include clearing, grading, and disturbing the ground, such as grubbing or excavation. The permit also covers linear underground and overhead projects such as pipeline installations.

The CGP uses a risk-based permitting approach and mandates certain requirements based on the project risk level (i.e., Level 1, Level 2, or Level 3). The project risk level is based on the risk of sediment discharge and the receiving water risk. The sediment discharge risk depends on the project location and timing (i.e., wet season versus dry season activities). The receiving water risk depends on whether the project would discharge to a sediment-sensitive receiving water. The project applicant would determine the project risk level when filing the NOI.

The CGP performance standard requires 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 conventional pollutants. A Qualified SWPPP Developer (QSD) must prepare a SWPPP 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 BMPs to reduce or eliminate sediment and other pollutants in stormwater as well as non-stormwater discharges resulting from construction activity. A Qualified SWPPP Practitioner (QSP) must oversee the operation of BMPs that meet the requirements outlined in the permit.

The SWPPP requires a construction site monitoring program. The monitoring program may include, depending on a particular project's 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 CGP allows the non-stormwater discharge of dewatering effluent if the water is not contaminated and is properly filtered or treated, using appropriate technology. These technologies may include, but are not limited to retention in settling ponds (where sediments settle out prior to discharge of water) and filtration using gravel and sand filters (to mechanically remove the sediment). The discharge of dewatering effluent is authorized under the CGP if the following conditions are met:

1. The discharge does not cause or contribute to a violation of any water quality standard;
2. The discharge does not violate any other provision of the CGP;
3. The discharge is not prohibited by the applicable Basin Plan;
4. The discharger has included and implemented specific BMPs required by the CGP to prevent or reduce the contact of the non-stormwater discharge with construction materials or equipment;
5. The discharge does not contain toxic constituents in toxic amounts or (other) significant quantities of pollutants;
6. The discharge is monitored and meets the applicable numeric action levels (NALs); and
7. The discharger reports the sampling information in the Annual Report.

If any of the above conditions are not satisfied, the discharge of dewatering effluent is not authorized by the CGP.

(3) Local Policies. Applicable local policies and regulations related to hydrology and water quality in the project area are described below.

Contra Costa County General Plan. The Contra Costa County General Plan[29] goals, policies, and implementation measures related to hydrology and water quality are presented below.

Water Resources Goals

- *Goal 8-T.* To conserve, enhance and manage water resources, protect their quality, and assure an adequate long-term supply of water for domestic, fishing, industrial and agricultural use.
- *Goal 8-U.* To maintain the ecology and hydrology of creeks and streams and provide an amenity to the public, while at the same time preventing flooding, erosion and danger to life and property.
- *Goal 8-V.* To preserve and restore remaining natural waterways in the county which have been identified as important and irreplaceable natural resources.
- *Goal 8-W.* To employ alternative drainage system improvements which rely on increased retention capacity to lessen or eliminate the need for structural modifications to watercourses, whenever economically possible.

Water Resource Policies

- *Policy 8-74.* Preserve watersheds and groundwater recharge areas by avoiding the placement of potential pollution sources in areas with high percolation rates.
- *Policy 8-75.* Preserve and enhance the quality of surface and groundwater resources.
- *Policy 8-76.* Ensure that land uses in rural areas be consistent with the availability of groundwater resources.

[29] Contra Costa County, 2005. *Contra Costa County General Plan.* January 18.

- *Policy 8-77.* Provide development standards in recharge areas to maintain and protect the quality of groundwater supplies.

Water Resources Implementation Measures

- *Implementation Measure 8-cv.* As a priority, define and implement a development review process for new projects that ensures conformance with the stream and riparian corridor protection policies of this plan.

Flood Hazard Goals

- *Goal 10-G.* To ensure public safety by directing development away from areas which may pose a risk to life from flooding, and to mitigate flood risks to property.

Flood Hazard Policies

- *Policy 10-40.* Planning Agency and Flood Control District review of any significant project proposed for areas in the County which are not presently in Flood Zones shall include an evaluation of the potential downstream flood damages which may result from the project.
- *Policy 10-55.* The potential effects of dam or levee failure are so substantial that geologic and engineering investigation shall be warranted as a prerequisite for authorizing public and private construction of either public facilities or private development in affected areas.
- *Policy 10-57.* Dam and levee failure, as well as potential inundation from tsunamis and seiche, shall be a significant consideration of the appropriateness of land use proposals.

Flood Hazard Implementation Measures

- *Implementation Measure 10-y.* Through the environmental review process, ensure that potential flooding impacts, due to new development, including on-site and downstream flood damage, subsidence, dam or levee failure, and potential inundation from tsunamis and seiche, are adequately assessed. Impose appropriate mitigation measures (e.g. flood-proofing, levee protection, Delta reclamations).

Contra Costa County Code of Ordinances. The Contra Costa County Code of Ordinances Division 1014, Stormwater Management and Discharge Control, contains the County's regulations for protecting and enhancing water quality consistent with the Porter-Cologne Water Quality Control Act, the federal Clean Water Act. This division also specifies the conditions for compliance with the County's NPDES permit and the requirements applicable to the construction and operation of private development projects.

City of Concord General Plan. The Concord General Plan policies related to hydrology and water quality are discussed in Table 4.I-1 in Section 4.I, Land Use and Planning Policy.

City of Concord Municipal Code. Concord Municipal Code Chapter 16.05, Stormwater Management and Discharge contains the City's regulations for protecting and enhancing water quality consistent with the Porter-Cologne Water Quality Control Act, the federal Clean Water Act. The chapter also specifies the conditions for compliance with the City's NPDES permit and the requirements applicable to the construction and operation of private development projects.

2. Impacts and Mitigation Measures

The following section presents a discussion of the impacts related to hydrology and water quality that could result from implementation of the project. The section begins with the criteria of significance and establishes the thresholds to determine if an impact is significant. The latter part of this section presents the impacts associated with implementation of the project and the recommended feasible mitigation measures, if required.

a. Criteria of Significance. Pursuant to CEQA Guidelines Appendix G, Environmental Checklist Form, the project would have a significant impact related to hydrology and water quality if it would:

- Violate any water quality standards or waste discharge requirements, or otherwise substantially degrade water quality;
- 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 that would not support existing land uses or planned uses for which permits have been granted);
- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Substantially alter the existing drainage pattern of area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;
- 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;
- Place within a 100-year flood hazard area structures that would impede or redirect flood flows;
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- Expose people or structures to a substantial risk of inundation by seiche, tsunami, extreme high tides, and/or sea level rise.

b. Less-than-Significant Impacts. The following describes the project's less-than-significant impacts related to hydrology and water quality that would result from implementation of the project.

(1) Groundwater Supplies. The project would increase the pervious surface area of the project site from approximately 19 percent to approximately 22 percent, and would direct runoff from impervious pavement areas into landscaped areas with biotreatment planters, decreasing the amount of runoff and increasing the amount of infiltration and recharge of groundwater compared to the existing condition. Therefore, the project would not interfere with groundwater recharge.

The project would not use local groundwater supplies, as discussed in more in detail in Chapter 4.K, Public Services and Utilities. As discussed above, dewatering of excavations could occur during construction activities. Any dewatering would be temporary and affect only the uppermost water-

bearing zone. Therefore, the potential for the project to substantially deplete groundwater supplies is less than significant.

(2) Place Housing or Structures within a Flood Hazard Zone. The project is not located within a 100-year flood hazard zone and does not propose construction of new housing. Therefore, no impact would result.

(3) Failure of a Levee or Dam. The project site is not located in an area protected from flooding by levees.[30] As noted above, for purposes of a conservative analysis, the project site is considered to be located within the dam failure inundation area of the Lafayette Reservoir. The safety of dams in Contra Costa County is regulated by the DOSD.[31] Contra Costa County has investigated the safety of all large reservoirs in the County and many have been strengthened;[32] catastrophic dam failure is categorized as the lowest risk natural hazard in the County.[33] Based on the results of a 2008 geotechnical investigation of the Lafayette Reservoir, EBMUD concluded that the dam is safe for continued operation.[34] Therefore, the project site would not be at a significant risk of flooding as a result of dam failure, and this potential impact is less than significant.

(4) Seiche, Tsunami, Extreme High Tides, and Sea Level Rise. Based on the elevation of the project site and its distance from the coast, coastal hazards associated with sea level rise, seiches, tsunamis, and extreme high tides are less than significant. The potential for flooding of the project site from seiche related dam overtopping at the Lafayette Reservoir is also less than significant due to the distance of the project site from the Lafayette Reservoir.

(5) Water Quality – Operation. Operation of the proposed shopping center would generate pollutants that could result in the degradation of stormwater runoff quality from the project site if not properly managed. Pollutants associated with vehicles (e.g., fuel, oil/lubricants, brake dust, and fallout from exhaust) would be deposited on the surface of parking areas and driveways that would contribute petroleum hydrocarbons, heavy metals, and sediment to the pollutant load in runoff which could then be transported to receiving waters. Degradation of the water quality of receiving waters could result if not captured and treated prior to being released to the storm drain system.

The project would be required to comply with the requirements of the Municipal Regional Permit, as implemented by the City of Concord through the Stormwater Management and Discharge Control Ordinance (Chapter 16.05 of the City of Concord Municipal Code). Requirements include, but are not limited to, incorporating source control measures, site design measures, and stormwater treatment measures in accordance with the requirements of Provision C.3 of the Municipal Regional Permit. The project would be regulated and categorized as a Special Land Use project under the Municipal

[30] Federal Emergency Management Agency, 2015. *National Flood Hazard Layer for Google Earth*, Available at: https://www.fema.gov/national-flood-hazard-layer-nfhl (accessed February 8, 2016).

[31] Contra Costa County 2005. C*ontra Costa County General Plan, Chapter 10, Safety Element.*

[32] Ibid.

[33] Contra Costa County 2015. C*ontra Costa County Emergency Operations Plan.* Available at: http://ca-contracostacounty2.civicplus.com/DocumentCenter/View/37349 (accessed February 8, 2016).

[34] East Bay Municipal Utility District, 2008. *Op.cit.*

Regional Permit as it would replace over 5,000 square feet of impervious uncovered parking lot area. Additionally, because the project would include alteration of over 50 percent of the impervious surface of the existing development that was not subject to Provision C.3 of the Municipal Regional Permit, stormwater treatment systems would be required to be designed and sized to treat stormwater runoff from the entire project site.

Preliminary designs for the project include the installation of pervious pavement (concrete pavers) in parking areas and landscaped areas with biotreatment planters throughout the project site that would allow a portion of runoff from parking areas and driveways to infiltrate the ground surface rather than being discharged directly to the storm drainage system. Typically, biotreatment planters are designed so that pollutants contained in runoff exceeding the infiltration capacity of the project site are filtered from runoff as it percolates through biotreatment soil in the upper portion of the biotreatment planters prior to being discharged to the storm drain system through perforated pipes located in the lower portion of the biotreatment planters. With proper design, operation, and maintenance of the biotreatment planters, pollutants would be removed from stormwater runoff prior to discharge to the storm drain system.

The proposed change in land use from an office use to a commercial use would result in the establishment of restaurants and retail establishments at the site, and would increase the solid waste generated at the project site. Littering and accidental releases of trash could be carried to receiving waters in stormwater runoff, causing adverse effects to water quality. The project includes trash disposal and collection facilities designed to manage solid waste generated by the shopping center tenants and their customers. Additionally, the project's operation and maintenance plan would ensure that litter is managed to avoid discharges to receiving waters. The project's stormwater drainage system would be designed and constructed to include stormwater control measures to prevent trash from being carried to receiving waters in stormwater runoff from the project site. These measures may include the use of specially designed catch basins that prevent trash from entering on-site storm drains, or installation of trash collectors near the project site's storm drain outfalls that would separate trash from stormwater prior to discharging to the City's storm drain system.

To ensure that the stormwater design measures would adequately remove pollutants from runoff and comply with the requirements of the Municipal Regional Permit, a Stormwater Control Plan would be prepared in accordance with the most recent version of the Stormwater C.3. Guidebook, prepared by Contra Costa County Clean Water Program (CCCCWP).

To ensure that the stormwater management facilities at the project site would be properly maintained and continue to adequately remove pollutants from runoff, a Stormwater Facilities Operation and Maintenance Plan describing the person(s) or organization(s) responsible for maintenance of the stormwater management facilities, the maintenance activities that would be performed, the maintenance schedule, and how maintenance costs will be funded would be prepared and implemented for review and approval by the City. Conformance with the plans throughout the lifetime of the project would ensure that project operation would have a less than significant impact on water quality.

(6) Water Quality – Construction. Soil exposure, non-stormwater discharges, and hazardous materials used during construction could result in the degradation of stormwater runoff quality from the project site if not properly managed. Demolition, excavation, grading and

construction would require the removal of existing structures, pavements, and vegetative cover within the project site, resulting in the disturbance and exposure of shallow soils to runoff, potentially causing erosion and entrainment of sediment and pollutants in the runoff, which could adversely affect receiving water quality. Additionally, chemicals such as fuels, oils, paints, and solvents would be used during construction of the proposed project. If released, these substances could be transported to nearby surface waterways and/or groundwater in stormwater runoff, wash water, and dust control water, potentially reducing the quality of the receiving waters.

Pursuant to requirements of the CGP, the project is required to prepare and implement a SWPPP to address stormwater runoff during project construction. The SWPPP will be submitted to the City of Concord Building Division for review and approval prior to the issuance of a building permit. Preliminary designs for the proposed project include erosion and sediment control measures to be installed during proposed construction activities, including erosion and sediment control BMPs at storm drain inlets, entrances/exits, and along the perimeter of the project site. Proper design, installation, and maintenance of the erosion and sediment control measures would prevent pollution in stormwater runoff.

The SWPPP must be prepared by a QSD and will include the minimum BMPs required for this type of project such as erosion and sediment control, site management and housekeeping, waste management, management of non-stormwater discharges (including discharges of pumped groundwater), run-on and runoff controls, and BMP inspection/maintenance/repair activities. The SWPPP requires a construction site monitoring program that identifies requirements for dry weather visual observations of pollutants at all discharge locations, and as appropriate (depending on the project Risk Level), sampling of the site effluent and receiving waters. A QSP will be responsible for implementing the BMPs at the project site and for performing all required monitoring and BMP inspection, maintenance, and repair activities.

Depth to groundwater at the project site ranged from approximately 9 to 15 feet bgs in August 2015, and the depth to groundwater may fluctuate in response to seasonal changes, prolonged rainfall, changes in surface topography, and other factors. Depending on the depths of excavation performed during construction activities, dewatering of excavations might be required. Concentrations of VOCs, petroleum hydrocarbons, and heavy metals were detected in groundwater samples collected at the project site in 2015. If the management and discharge of dewatering effluent into the storm drainage system were not properly handled, this could adversely affect water quality in the receiving waters as contaminants and sediment may be present in the dewatering effluent. As specified in the SWPPP, any groundwater generated by temporary construction dewatering activities will be contained in an appropriately sized storage tank and tested to determine whether the groundwater is contaminated prior to discharging of the groundwater. Testing and discharging of the groundwater will be performed in accordance with the CGP, including treating the groundwater prior to discharge, if necessary. If the groundwater is not suitable for discharge to storm drains, as discussed above, dewatering effluent will be discharged to sanitary sewer systems or transported for disposal at an appropriate off-site treatment or disposal facility. If the groundwater would be discharged to sanitary sewer, the project would obtain a Special Discharge Permit from Central Contra Costa Sanitary District.

Implementation of the SWPPP consistent with the CGP, and compliance with the Special Discharge Permit, if applicable, would reduce potential water quality impacts from construction to less than significant.

(7) Alter Drainage Patterns, or Substantially Increase the Rate or Amount of Surface Runoff, in a Manner that Exceeds the Capacity of Existing or Planned Stormwater Drainage Systems, Causes On- or Off-Site Flooding, or Causes On- or Off-Site Erosion or Siltation. The existing condition of the project site includes approximately 19 percent pervious (landscaped) surface area. The project would include approximately 22 percent pervious surface area, including landscaped areas with biotreatment planters, and pervious pavement areas, and would direct runoff from impervious pavement areas into landscaped areas with biotreatment planters, decreasing the amount of runoff as compared to existing conditions. Therefore, the project would not be subject to the hydromodification management requirements of Provision C.3.g of the Municipal Regional Permit.

Currently stormwater runoff from much of the project site is discharged through storm drains at the northwest corner of the site, and runoff from smaller portions of the project site is discharged to a box culvert beneath Diamond Boulevard. The preliminary designs for the project include installing twin 24-inch storm drain pipes in Galaxy Way to connect to the existing box culvert in Diamond Boulevard. Storm water from the eastern portion of the site near Diamond Boulevard would be pumped to the north and drain to Galaxy Way where the new twin 24-inch storm drain pipes are proposed. The south and west sides of the site would continue to drain to the existing twin 24-inch storm drain pipes at the northwest corner of the site discharging to the storm drain along the north side of I-680.

The new stormwater drainage system for the project would be designed to ensure that: 1) runoff volumes and flow rates generated by the design storm would not exceed the capacity of the proposed new on-site stormwater drainage systems or existing or proposed off-site stormwater drainage systems that would receive runoff from the project site; 2) the flow control requirements of Provision C.3 of the Municipal Regional Permit would be achieved; and 3) the runoff volumes and flow rate of stormwater that would be discharged to the City's existing storm drain system would not exceed pre-project runoff volumes and flow rates to ensure that the proposed project does not contribute to increased erosion or siltation in downstream drainage ditches and creeks. Compliance with the above C.3 design requirements will ensure that potential storm drainage impacts would be reduced to less than significant.

c. Significant Impacts. No significant hydrology or water quality impacts have been identified; all potential impacts would be less than significant due to compliance with existing regulations.

d. Cumulative Impacts. The geographic area considered for cumulative hydrology and water quality impacts is the Grayson Creek Sub-Watershed of the Walnut Creek Watershed. Stormwater in the project vicinity discharges to Grayson Creek, then Walnut Creek, and ultimately to Suisun Bay.

Stormwater discharges are affected by urban pollutants that contribute to the degradation of the water quality of Grayson Creek, Walnut Creek, and Suisun Bay. Urban pollutants in stormwater include petroleum hydrocarbons, sediments, metals, pesticides, and trash. Past, current and reasonably foreseeable projects in the vicinity of the project site (listed in Table 6.E-1) could result in cumulative impacts associated with stormwater discharges, similar to the potential impacts from construction and

operation of the project. In order to adequately address cumulative water quality impacts, stormwater regulations have become progressively more stringent since the passage of the federal Clean Water Act, and current NPDES permits now require new development and redevelopment projects to manage and treat all significant sources of stormwater pollutants and reduce runoff. These NPDES permit requirements apply to the cumulative projects listed in Table 6.E-1 as well as the project. As such, a reduction in runoff and overall pollutant loads in stormwater in the vicinity of the project site is anticipated over time, thereby reducing cumulative impacts. Although overall water quality in Grayson Creek, Walnut Creek, and Suisun Bay is anticipated to improve over time, these water bodies are currently designated as "impaired" by the State Water Board.

The project would not use, handle, store, or substantially generate any of the compounds or constituents contributing to the impaired status of the above water bodies, with the exception of trash which may be generated during construction activities and the operation period. The proper storage and disposal of trash during construction and operation of the project as required by the applicable regulations as described above would ensure that the project would not have a cumulatively considerable impact on water quality.

Stormwater drainage generated by the project site would not cause an increase in the flow rate or volume of stormwater being discharged to the City's storm drain system, and therefore the proposed project would not have a cumulatively considerable impact on flooding, erosion, or exceeding storm drainage capacity.

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I. LAND USE AND PLANNING POLICY

This section assesses the project's potential environmental impacts related to land use and planning policy. Information in this section is used to evaluate the potential impacts of the project with respect to the criteria of significance set forth in the Impacts and Mitigation section.

This section also evaluates the proposed project's consistency with applicable planning policies. While this section contains a discussion of the consistency of the proposed project with relevant land use policies, policy conflicts do not, in and of themselves, constitute a significant environmental impact. Policy conflicts are considered to be environmental impacts only when they would result in significant and adverse physical impacts in accordance with specified thresholds. Land use policies are discussed in this section for informational purposes only. All other associated physical impacts are discussed in this EIR in specific topical sections such as noise, air quality, and transportation.

1. Setting

The following section describes the existing land uses and regulatory context of the project site and vicinity.

a. Existing Land Use. Land uses on the project site and adjacent area are shown in Figure 4.I-1 and are described below. Photographs of the site are provided in Chapter 3, Project Description, Figure 3-3.

(1) Project Site. As described in more detail in Chapter 3, Project Description, the 30-acre site, located at 2001-2003 Diamond Boulevard, is generally bounded by Diamond Boulevard to the northeast, Galaxy Way to the northwest, Interstate 680 (I-680) to the southwest, and Willow Way and the Willows Shopping Center to the southeast. Willow Way is a public street and transitions into a private driveway at Willows Shopping Center.

The project site currently consists of office buildings, parking, landscaping, and other improvements that were developed between 1970 and 1984 as a regional office for Chevron Corporation. The office buildings are located in the center of the site and total approximately 619,000 square feet of floor area. The one- to four-story buildings have a dated contemporary architectural style and include glass and concrete façades. The site elevation is approximately 26 feet above mean sea level, and the buildings are constructed on or surrounded by a 4-foot high pad.

Surface parking lots with a total of approximately 1,690 parking spaces surround the office buildings. Landscaping, primarily consisting of turf and trees, covers approximately 19 percent of the site. Mature trees are planted in landscape strips around the perimeter of the project site and along the main entrance driveway. Trees and landscaping are also planted adjacent to the buildings and within the parking lots. Approximately 795 trees were located on the site at the commencement of environmental review in January 2016.[1] In addition, landscaped courtyards are located adjacent to the buildings.

[1] In late January 2016, approximately 93 trees were removed along the freeway frontage; a total of 702 trees now exist on the project site, including 58 protected trees. For the purposes of a conservative analysis, this Draft EIR considers the number of trees existing at the project site at the commencement of the environmental analysis, 795 (including 61 protected trees).

(2) Surrounding Area. A variety of commercial and office uses surround the project site, including office and government services, retail, hotel, education, restaurants, and automobile sales and repair. The Willows Shopping Center abuts the project site to the southeast. Buchanan Field, a regional airport owned and managed by Contra Costa County, is less than 0.5 mile north of the project site (north of Concord Avenue) and is within the City's Sphere of Influence (but outside of the City's municipal boundaries). Buchanan Field Golf Course, also operated by Contra Costa County, is located on the south side of the airport and adjacent to Concord Avenue.

The Iron Horse Regional Trail, a Class I multi-use trail, and the Walnut Creek drainage channel are located approximately one-quarter mile east of the project site, behind the Hilton Hotel and the Home Depot properties, and south of the Willows Shopping Center. Waterworld California, a large commercial water park open from May through October, is located on the east side of the Walnut Creek drainage channel. State Route 242 (SR-242) is located approximately one-half mile east of the project site, and merges with I-680 south of Willow Pass Road.

I-680 abuts the project site to the southwest, and the Sunvalley Shopping Center, a large regional shopping mall, is located to the west of the freeway and south of the project site. A large commercial district is located in the vicinity of this mall, generally along Contra Costa Boulevard. The City of Pleasant Hill is west of Contra Costa Boulevard and I-680. Residential neighborhoods and Diablo Valley College are located between Golf Club Road and Taylor Boulevard/Sunvalley Boulevard.

b. Regulatory Context. Planning and regulatory documents guiding land use and development on the project site include the Concord 2030 Urban Area General Plan, Concord Development Code, and Concord Community Design Guidelines, as well as the Contra Costa County Land Use Compatibility Plan (which relates to Buchanan Field Airport). Brief descriptions of these documents are provided below.

(1) Concord 2030 Urban Area General Plan (General Plan). The General Plan, adopted in 2007, provides the community's long-range policy direction intended to guide future growth, development, and conservation of resources.[2] The General Plan provides policy direction through seven elements: Economic Vitality, Land Use; Growth Management; Transportation and Circulation; Parks, Open Space and Conservation; Safety and Noise; Public Facilities and Utilities; and Housing. Policy direction is provided in each element through a series of goals, principles, and policies, with each organized by broad issues of importance to the community.

The General Plan Land Use Diagram applies land use designations to all public and private parcels within the City's municipal boundaries and related planning area. General Plan land use designations in the vicinity of the project site are depicted in Figure 4.I-2. The project site is within the Central Concord planning subarea (known as Planning Subarea 1). The Central Concord planning subarea lies along both sides of Willow Pass Road from the westerly City limits to the Civic Center near Parkside Drive. The subarea includes West Concord, Stanwell Business Park, Concord Industrial Park (south of Willow Pass Road), Central Downtown (between SR-242 and Port Chicago Highway), Sun Valley Mall and the Willows Shopping Center, and frontages along Willow Pass Road between Downtown and the Civic Center.

[2] City of Concord, 2007. *Concord 2030 Urban Area General Plan.* October 2.

The General Plan land use designation for the project site is West Concord Mixed Use (WCMU). This designation is intended for use in the area generally located between the I-680 and SR-242 freeways, south of Concord Avenue. It allows for a mix of office and commercial development, including such uses as new auto dealers, hotels, restaurants, and showroom/warehouses. Public/quasi-public uses also are allowed. Residential development is not allowed in this mixed-use category, as it is intended to create a campus-like office environment. [3] The maximum floor area ratio (FAR) is 4.0.

Surrounding properties are within the same General Plan land use designation, with the exception of the Sunvalley Shopping Center west of I-680, which is within the Regional Commercial (RC) General Plan land use designation.

Table 4.I-1 lists Concord General Plan policies relevant to land use and development on the project site. The table also lists General Plan policies related to other environmental topic areas evaluated in this EIR (transportation, air quality, noise, etc.). The table groups the policies according to these EIR topic areas.

[3] Ibid.

LSA

FIGURE 4.I-1

LEGEND

Project Site

City Limits

N

0 250 500

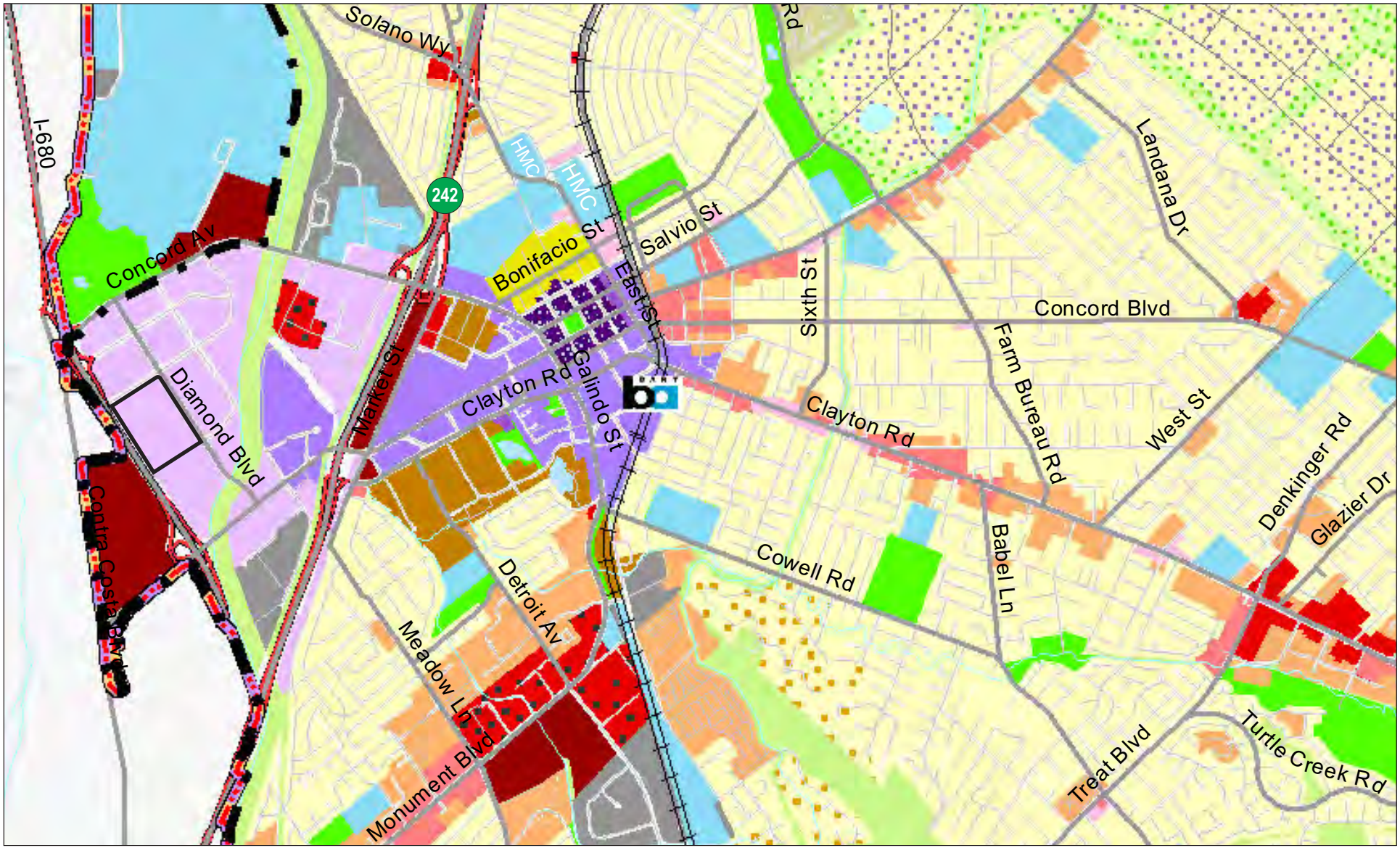
FEET

SOURCE: Esri World Imagery (2014).

The Veranda Shopping Center

Existing Land Uses in the Project Area

I:\CYR1502\GIS\Maps\EIR\Figure 4.I-1_Existing Land Uses in the Project Area.mxd (3/24/2016)



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Project Site
City Limits
Sphere of Influence
Rural Residential
Low Density Residential
Medium Density Residential
High Density Residential
North Todos Santos
Community Office
Commercial Mixed Use
Neighborhood Commercial
Regional Commercial
Service Commercial
Downtown Pedestrian
Downtown Mixed Use
West Concord Mixed Use
Business Park
CRP Neighborhood and Village Districts
CRP Open Space
Military
Public/ Quasi-Public
HMC Hospital/ Medical Center
Open Space
Parks and Recreation
Wetlands/Resource Conservation
Unclassified

SOURCE: City of Concord, Dyett & Bhatia, Arup, 2011, LSA, 2016.

FIGURE 4.I-2

The Veranda Shopping Center

General Plan and Land Use Designations

P:\CYR1502\g\EIR\Figure 4.I-2_General Plan and Land Use Designations.cdr (3/15/2016)

(2) Concord Municipal Code Chapter 18 (Development Code). The purpose of the Development Code is to promote the orderly growth of the city, while also ensuring, promoting, and protecting the health, safety, peace, comfort and general welfare of city residents and businesses.[4] The Development Code implements General Plan policy by establishing zoning districts that identify the specific land uses permitted within each district, consistent with the intent of the underlying General Plan designation; providing development standards to regulate the height, bulk and location of buildings; specifying parking, landscaping and open space requirements; and providing processing procedures for development or use applications within each district.

Figure 4.I-3 is the zoning map showing the project site and surrounding parcels. The project site is zoned West Concord Mixed Use (WMX), which applies to the area bounded by Concord Avenue, the Walnut Creek drainage channel, and I-680. The WMX district is intended for a mix of commercial, office, retail, multi-tenant office/warehouses, and institutional development up to 4.0 FAR. The WMX district allows new automobile dealers, shopping centers, hotels, restaurants, office buildings and multi-tenant commercial spaces, including contractor showrooms and storage uses when located entirely within a building and public/quasi-public uses. The WMX district does not allow residential uses. The WMX district is consistent with and implements the WCMU land use designation of the General Plan.

(3) Concord Community Design Guidelines. The Concord Community Design Guidelines, adopted in 1987, are intended to provide direction to development project designers/applicants and reviewers by establishing criteria to review project aesthetics. The purpose of the guidelines is to stimulate high-quality design that encourages creativity and diversity, and improve impressions of the community, as well as to achieve harmony among the built and natural environments, including compatibility between new developments and established neighborhoods. The guidelines provide community design principles to address views of Concord as seen 1) from surrounding hills or freeways, 2) in motion along City arterial streets, 3) from neighborhood streets and business and residential complexes, and 4) from within the compactly built-up downtown core.

The guidelines are very detailed and are applicable to residential and non-residential development projects alike. As such, the guidelines are provided in nine sections, as described below.

- Area Context—Considers the impact of the project design on the City, the neighborhood, the street, and the immediately adjacent area.
- Site Plan—Provides direction to address the interrelationship of all elements on the site in conjunction with those in the surrounding area, including natural and built features, through the orientation of buildings, use of open spaces and setbacks, site grading, building floor elevations, pedestrian circulation, refuse and outdoor storage, lighting, and fencing.
- Amenities—Describes project-specific, streetscape, and artwork amenities that are included in project design to enhance the quality of life for persons residing and employed in Concord.
- Building Design—Provides direction to ensure that the bulk of buildings remains in scale with humans; colors and materials provide visual relief, rhythm and variety; and necessary facilities (e.g., surveillance equipment, transformers, heating and cooling equipment) are appropriately integrated and screened with the building's design.

[4] City of Concord, 2015. *Concord Municipal Code Chapter 18.45.* December 8.

- Landscape Design—Ensures that landscaping is integrated into project design in order to provide adequate screening, shade, delineation of space, and accents and focal points by addressing set-back areas, transitions, coordination, visibility, maintenance requirements, site grading and drainage, and planting materials utilized.
- Parking—Provides vehicular circulation distances to building entrances, parking stall space requirements, screening with berms, landscaping, and walls, joint access to minimize unnecessary driveways, covered parking, parking area landscaping, and integration of pedestrian walkways.
- Signage—Describes design characteristics, such as quality and appropriateness of materials, in order to fully integrate sign design with all other aspects of a project's design.
- Utilities—Requires coordination with utility providers early in the development review process to ensure that utility apparatus are concealed within buildings or in underground vaults.

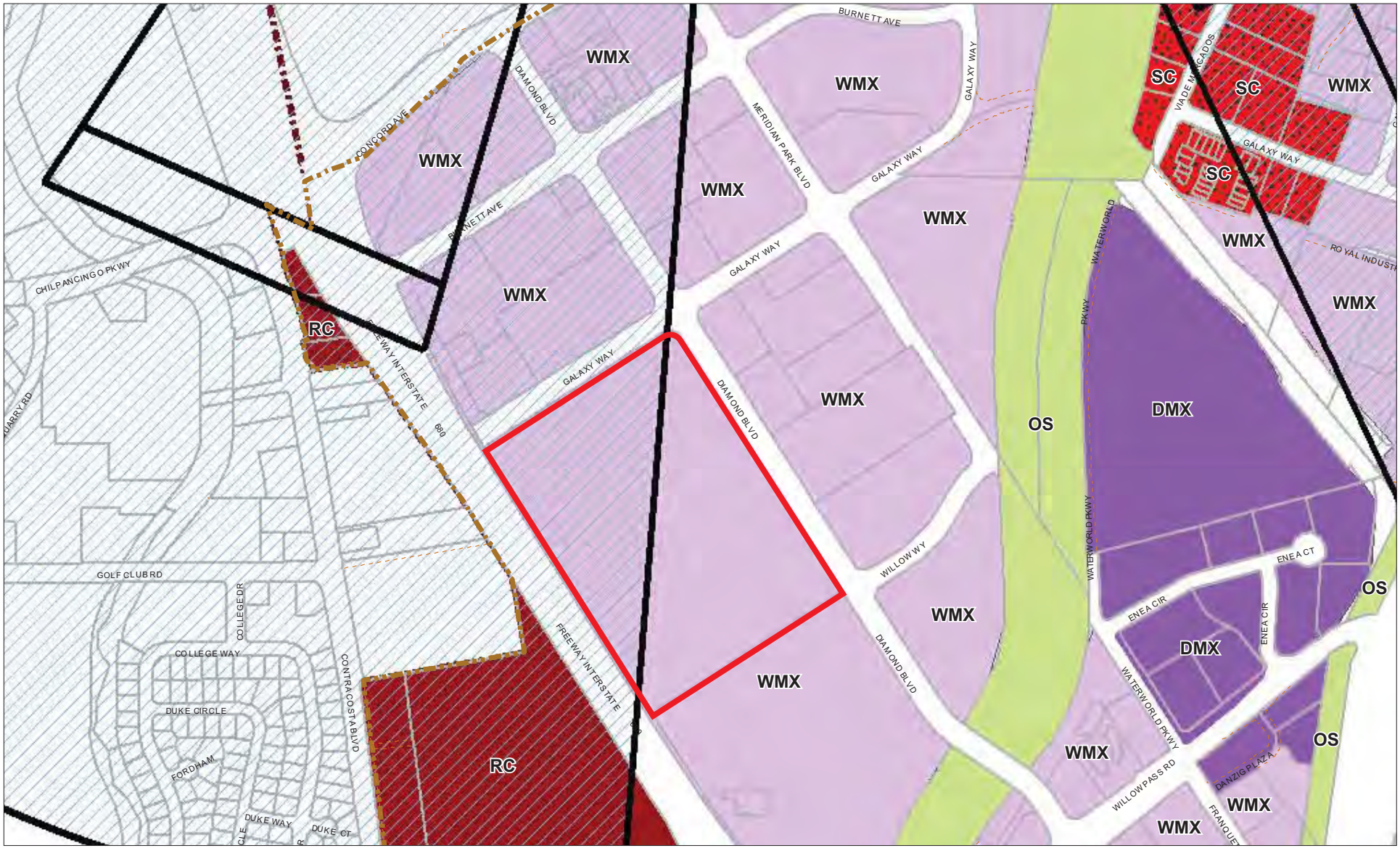
(4) Contra Costa County Airport Land Use Compatibility Plan (ALUCP). The Contra Costa County Airport Land Use Commission (ALUC) is responsible for reviewing and ensuring the land use compatibility of the County's two airports, Byron Airport and Buchanan Field, with adjacent land use development proposals, in accordance with the County's Airport Land Use Compatibility Plan (ALUCP).[5] Buchanan Field is located on unincorporated Contra Costa County lands within the City's sphere of influence. Byron Airport is located in unincorporated Contra Costa County south of the City of Brentwood. The ALUCP provides compatibility criteria for noise, safety, overflights, and airspace protection that are applicable to local agencies and property owners when preparing or amending land use plans, ordinances, and development projects. The ALUCP's policies are designed to ensure that future land uses in the areas surrounding these airports will be compatible with potential aircraft activity and airport operations.

The project site is located within the Buchanan Field Airport influence area, and the western half of the project site is overlain by the airport's Safety Zone 4. Projects located within the Buchanan Field Airport influence area are subject to ALUC review to determine consistency with the ALUCP. All new development projects located within Safety Zone 4 that are taller than 50 feet, or those located within any safety zone with more than 20,000 square feet of building area, are also subject to ALUC review to determine consistency with the ALUCP.[6] The area of the project site overlain by Safety Zone 4, in particular, is limited to building heights of no more than four habitable floors above ground, and is prohibited from having more than 2,000 gallons of fuel or other hazardous materials stored in aboveground storage tanks.[7]

[5] Contra Costa County Airport Land Use Commission, 2000. *Contra Costa County Airport Land Use Compatibility Plan*. December 13.

[6] Ibid.

[7] Ibid.



LSA

Concord City Limit
Sphere of Influence
Project Boundary
Airport Safety Zones

Regional Commercial (RC)
Service Commercial (SC)
Downtown Mixed Use (DMX)
West Concord Mixed Use (WMX)
Open Space (OS)
Unzoned (U)

N

0 300 600
FEET

SOURCE: City of Concord, LSA, 2016.

FIGURE 4.I-3

The Veranda Shopping Center

Existing Zoning in Project Area

P:\CYR1502\g\EIR\Figure 4.I-3_Existing Zoning in Project Area.cdr (3/15/2016)

2. Impacts and Mitigation Measures

As noted earlier, conflicts between a project and applicable policies do not constitute significant physical environmental impacts in and of themselves; as such, the proposed project's consistency with applicable policies is discussed separately from physical land use impacts. 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 of this EIR.

a. Criteria of Significance. Pursuant to the CEQA Guidelines Appendix G, Environmental Checklist Form, the project would have a significant land use impact if it would:

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over a project, including, but not limited to, a general plan, specific plan, or zoning ordinance, adopted for the purpose of avoiding or mitigating an environmental effect; or
- Conflict with an applicable habitat conservation plan or natural community conservation plan.

b. Less-than-Significant Impacts. Implementation of the project would result in the less-than-significant impacts described below.

(1) Division of an Established Community. 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.

The proposed project would redevelop an existing office campus with a new commercial shopping center that is within an existing commercial district. The project site is bordered by local streets and a highway on three sides, and another shopping center on one side. Therefore the project would not result in the physical division or disruption of an established community, and impacts would be considered less than significant.

(2) Compatibility with Surrounding Land Uses. Implementation of the proposed project would not result in the development of incompatible land uses nor would it interfere with the daily operations of the existing, surrounding land uses. The project would include commercial retail compatible with and similar to other commercial uses in the vicinity, and would be in conformance with the General Plan land use designation and uses allowed by zoning. Therefore, land use compatibility impacts be would considered less-than-significant.

(3) Conflict with Applicable Land Use Plans and Policies. The proposed project's consistency with planning and regulatory documents guiding land use and development on the project

site, including the General Plan, Development Code, Concord Community Design Guidelines, and ALUCP, is discussed below.

General Plan. The proposed project is consistent with the land use provisions of the General Plan. The West Concord Mixed Use (WCMU) land use designation allows for a mix of office and commercial development, including uses proposed for the project, such as restaurants, retail, theater, and offices. The project would have a floor area ratio of 0.29, consistent with the WCMU designation, which sets a maximum FAR of 4.0.

Table 4.I-1 at the end of this section evaluates the consistency of the proposed project with relevant General Plan policies grouped by each environmental topic. As indicated in the table, the project, with mitigation measures recommended in this EIR, would be consistent with the relevant General Plan policies.

Concord Municipal Code Chapter 18 (Development Code). The proposed project is consistent with the West Concord Mixed Use (WMX) zoning for the site, which allows mixed uses, including restaurants, retail, theater, and offices. The WMX district has a maximum FAR of 4.0, a minimum lot area of 25,000 feet, and a maximum building height of 150. The project complies with these and other applicable development standards (parking, landscaping, lighting, etc.) and is undergoing review pursuant to the development review process to ensure consistency with said standards and requirements. Additionally, the proposed project would provide sufficient vehicle parking to serve the uses developed on the project site in accordance with the City's general retail parking requirement for shopping centers, and would also provide sufficient bicycle parking pursuant to the City's applicable standards.

Sign Ordinance. The master sign program proposed as part of the project includes signage that is intended to be viewed from the freeway. The freeway oriented signage proposed for the project site includes both highway pylon signs and wall signs with text and graphics. Because the proposed freeway oriented signage is not currently permitted under Concord Municipal Code Section 18.180 (sign ordinance), the proposed signage is considered a policy conflict as of the publication date of this Draft EIR. The proposed project includes a text amendment to the City's sign ordinance (sign ordinance amendment) and would require approval by the City Council. This sign ordinance amendment would allow freeway oriented signage under limited circumstances (e.g., subject to location and size constraints, and time, place, and manner restrictions) subject to specified findings and conditions of approval as part of a master sign program and use permit. The freeway oriented signage proposed by the applicant includes pylon signs up to 60 feet high (including electronic reader boards) and wall signs on building elevations. The draft text of the sign ordinance amendment as submitted by the applicant is included in Appendix L).

Approval of the proposed text amendment to permit freeway oriented signage would also potentially allow for this type of signage at a limited number of other locations in the City, to the extent such applications were submitted by other property owners and approved by the City. These other locations are limited in nature because they would otherwise need to meet the requirements of the amended sign ordinance including: having frontage along I-680 in the City; be commercially zoned; and be large enough in size to accommodate a multi-tenant shopping center of at least 300,000 square feet. Based on these criteria, properties in the vicinity of the project site that could be eligible to apply

for consideration of a master sign program and related use permit for freeway-oriented signs include the Willows Shopping Center and the Sunvalley Shopping Center.

Approval of the proposed sign ordinance amendment would eliminate the policy conflict and would result in a project that is consistent with the revised sections of the Municipal Code.

Concord Community Design Guidelines. The proposed project's consistency with the applicable provisions of the Concord Community Design Guidelines is briefly summarized below:

- Area Context–It appropriately considers the context of the area in which it would be located.
- Site Plan–It provides a well-integrated site plan that has appropriately designed and oriented buildings, landscaping, fencing, and vehicular and pedestrian circulation to be compatible with the surrounding area.
- Amenities–It provides short-term bicycle parking in bike racks throughout the shopping center, and long-term bicycle parking for employees in a secure storage area behind the main plaza; provides restroom and shower facilities for employees; and provides enhanced outdoor landscaped common areas for customer use.
- Building Design–The architectural design uses varying colors, materials, heights, and details in providing visual relief, rhythm, and variety to break up the mass and bulk of their building façades, thereby ensuring that the buildings are in scale with humans.
- Landscape Design–Integrated landscaping into the overall design of the site, providing adequate screening, shade, delineation of space, and accents and focal points, as well as visibility through the site with varied planting material suitable for the project site's climatic conditions.
- Parking–Provides sufficient parking, generally located in the center portion of the site, to serve all patrons and employees of the shopping center tenants; provides required disabled parking spaces, motorcycling spaces, and bicycle parking; and provides electric vehicle (EV) parking spaces with electrical conduit for the future installation of charging stations.
- Signage–Proposes a master sign program for on-site tenant and directional signs that is intended to complement the project's design characteristics, including architecture, landscaping, and building colors, and materials.
- Utilities–Provides new on-site utilities to connect with existing wet and dry utilities that currently serve the site.

Contra Costa County Airport Land Use Compatibility Plan (ALUCP). The northwestern side of the project site is located within Safety Zone 4 of the Buchanan Field Airport Land Use Plan. The project would be consistent with ALUCP provisions for Buchanan Field as follows:

- Noise–A small portion of the project site in the northeastern corner is within the 55-60 dBA CNEL noise contour of the Buchanan Field Airport flight tracks; however the majority of the project site does not lie within this noise contour. In addition, this noise level is considered Normally Acceptable for commercial developments, as shown in Table 4.J-5, Noise and Land Use Compatibility Standards and General Plan Figure 7-8.
- Safety–No uses proposed at the project site have been identified as hazards to flight, such as physical, visual or electronic forms of interference with the safety of aircraft operations, or uses that attract birds. Buchanan Field's Safety Zone 4 overlies the western half of the site. Under the

ALUCP, uses in Safety Zone 4 are restricted to fewer than four habitable floors in height and no aboveground fuel storage of more than 2,000 gallons is allowed. Buildings would primarily be one-story to a maximum height of 60 feet. The project would not include aboveground fuel storage and, therefore, would be consistent with the ALUCP standards.

- Airspace Protection–The maximum structure height of 60 feet combined with the site elevation of approximately 26 feet above mean sea level would be less than the Airspace Protection maximum height for Buchanan Field of 123 feet above mean sea level, as specified by the ALUCP.
- Overflights–Assembly Bill 2776, effective January 1, 2004, requires that sellers of property within an Airport Influence Area, such as the proposed property, disclose to potential buyers that an airport is located in the area. At the time of any land transaction, the seller would have to comply with this State law.

c. Significant Impacts. For the reasons set forth above, implementation of the project would not result in any significant land use impacts.

d. Cumulative Impacts. The proposed project would redevelop an existing office campus with a new shopping center. Development of the proposed project would be consistent with the General Plan's overall vision for development in this area of the City and would not contribute to or cause unplanned growth or result in any considerable contribution to any land use conflicts. Therefore, development of the proposed project, in combination with other past, present, and reasonably probable future projects, would not result in significant cumulative land use impacts. Therefore, this impact is less than significant.

Table 4.I-1: Relationship of Project to Relevant Concord General Plan Policies

General Plan Provision	Goal, Objective, Policy, or Implementation Language	Project's Relationship to Policy
A. AESTHETICS-RELATED POLICIES		
Policy LU-3.1.1	Provide for regional centers that have an appealing mix of tenants and are designed with site amenities to attract customers from both local neighborhoods and region-wide communities.	***Consistent.*** See discussion of Policy LU-3.1.1 under I. Land Use and Planning Policy, below.
Policy LU-9.1.3	Require new commercial development to provide comprehensive landscaping, including hardscape and parking lot areas as well as pervious areas.	***Consistent.*** New landscaping compatible with the new shopping center layout would be installed throughout the site. Landscaped parking lots would occupy the center of the site. Approximately 20 percent of the project site would be landscaped, consistent with City development standards. A landscaped plaza with hardscape is proposed at the southwest corner of the site near the front of the theater building, and may include amenities such as a fountain, play area, stage, and outdoor seating. Trees and planters would be provided within the parking areas to provide shade and capture and treat stormwater runoff.
Policy LU-9.1.5	Require utilities to be placed underground or screened from public view.	***Consistent.*** Utilities would be placed underground or screened from public view consistent with applicable City standards and policies.
Policy LU-9.1.4	Require parking areas to be screened, to the maximum extent possible, from the public rights-of-way or located behind commercial structures instead of adjacent to the right-of-way.	***Consistent.*** Parking would primarily be located within the central portion of the project site; views of the parking lots would be screened by the proposed buildings and landscaping sited around the perimeter.
Policy LU-9.2.2	Allow unique, diverse, and creative design solutions for infill development that are compatible with and enhance existing neighborhoods and shopping areas.	***Consistent.*** The proposed project is designed with a unified architectural theme that is compatible with and would enhance the existing commercial district.
Policy LU-9.2.3	Apply site planning techniques that minimize the amount of impervious paving, promote pedestrian safety, and reduce urban runoff in commercial centers.	***Consistent.*** The project site is designed to direct pedestrian activity to protected walkways in front of the retail storefronts. Crossings of internal driveways would be clearly delineated for pedestrian safety. Pervious paving and biotreatment planters would be located within the parking lot to capture and treat runoff prior to discharge to storm drains.
Policy LU-10.1.2	Require new development to provide and maintain right-of-way improvements along project frontages such as landscaping, street trees, and other amenities that enhance the streetscape appearance.	***Consistent.*** The project would alter the adjacent right-of-way by making improvements necessary to accommodate the project. The streetscape would include substantial landscaping to enhance the appearance of the project site and its appeal to customers.
Policy LU-10.1.5	Require trees and other landscaping within parking lots.	***Consistent.*** See discussion of Policy LU-9.1.3 above.

Table 4.I-1 *Continued*

General Plan Provision	Goal, Objective, Policy, or Implementation Language	Project's Relationship to Policy
B. AIR QUALITY-RELATED POLICIES		
Policy S-1.1.1	Maintain and upgrade traffic control systems to reduce vehicle idling time, emphasizing commute-route signal synchronization and vehicle emissions reductions.	***Consistent.*** As discussed in Section 4.L, Transportation and Circulation, traffic control systems would be modified and synchronized to optimize system performance and minimize vehicle idling time.
Policy S-1.1.2	Site projects in locations and/or in a manner that will reduce air pollution exposure of sensitive receptors.	***Consistent.*** As discussed in Section 4.B, Air Quality, the project is located in an area that does not contain sensitive receptors for air pollution.
Policy S-1.1.3	Require project applicants to implement all feasible control measures to reduce combustion emissions from construction equipment.	***Consistent with Mitigation.*** Section 4.B, Air Quality, evaluates the proposed project in accordance with this policy. The proposed project would be consistent with this policy with the implementation of recommended mitigation measures to reduce dust emissions from construction equipment.
Policy S-1.1.4	Require developers on a case-by-case basis to comply with the BAAQMD regulations in effect at the time of project approval, including regulations relating to dust, toxic air contaminants (TACS), odors, and other air pollutants or air quality issues.	***Consistent with Mitigation.*** Section 4.B, Air Quality evaluates the proposed project in accordance with BAAQMD regulations. The proposed project would be consistent with this policy and applicable BAAQMD regulations with the implementation of recommended mitigation measures that apply to demolition and construction activities.
Policy S-1.1.5	Coordinate with the BAAQMD when addressing air quality issues related to local land use proposals.	***Consistent.*** The BAAQMD was notified of the proposed project through the NOP process. The BAAQMD did not submit any comments in response to the NOP.
Policy S-1.1.7	Require new development to comply with all applicable dust control measures promulgated by the BAAQMD for new construction.	***Consistent with Mitigation.*** The proposed project would be consistent with this policy with the implementation of recommended mitigation measures.
Policy S-1.2.1	Promote pedestrian, bicycle, and transit modes of travel to reduce air pollutant emissions from automobiles.	***Consistent.*** The proposed project is a commercial shopping center that would not generate a significant amount of pedestrian or bicycle trips. However, the project would provide parking for over 200 bicycles consistent with the City's requirement to provide short-term parking (intended for customers) equivalent to 5 percent of the required parking, and long-term parking (intended for employees) equivalent to 10 percent of the required parking. Short-term bicycle parking would be provided in bike racks throughout the shopping center. Long-term bicycle parking for employees would be provided in a secure storage area behind the main plaza. Restroom and shower facilities would also be provided for employees adjacent to the bicycle storage area. Bus lines connecting to the project site will encourage use of transit. In addition, EV parking spaces with electric conduit would be provided.
Policy S-1.2.2	Encourage establishment of Transportation Demand Management (TDM) programs at major employment sites and shopping centers, including provision of preferential carpool parking and car share programs, bicycle lockers, BART shuttles, and jitney service.	***Consistent with Mitigation.*** See discussion of Policy S-1.2.1. As discussed in Section 4.L, Transportation and Circulation, a mitigation measure is recommended requiring the implementation of a TDM program to minimize automobile trips generated by the project, to the extent feasible.

Table 4.I-1 *Continued*

General Plan Provision	Goal, Objective, Policy, or Implementation Language	Project's Relationship to Policy
Policy S-1.2.3	Support the expansion and improvement of local and regional transit systems and ridesharing programs.	***Consistent with Mitigation.*** As discussed in Section 4.L, Transportation and Circulation, the TDM mitigation measure requires the project to support the provision of local commuter service to and from the BART station and the project site on Route 91X. The proposed project would be consistent with this policy with the implementation of recommended mitigation measures.
Policy S-1.2.8	Promote walking and bicycling as a means of improving public health and wellness, as well as a means of improving air quality.	***Consistent.*** See discussion of Policy S-1.2.1.
Policy S-1.3.2	Promote infill development to reduce urbanization of open space and agricultural lands and related increases in automobile travel.	***Consistent.*** The project would redevelop an existing office campus with a commercial shopping center that is complementary to existing uses in the vicinity and is therefore considered infill development.
Policy S-1.3.3	Support transit-oriented development to reduce automobile travel.	***Consistent.*** The project site is not in a Transit Overlay District, but it is served by existing bus lines that connect to the Concord BART station and other transit options; Therefore, it is considered consistent with this policy.
Policy S-1.3.6	Promote the planting and maintenance of trees and other landscaping to absorb carbon dioxide and help reduce air pollution levels.	***Consistent.*** The shopping center would have landscaping be installed throughout the site. A total of 20 percent of the project site would be landscaped, consistent with City development standards. The new landscaping would absorb carbon dioxide, create shade and cool the site, and therefore reduce air pollution levels.
C. BIOLOGICAL RESOURCES-RELATED POLICIES		
Policy POS-3.4.1	Conserve wildlife habitat and wildlife corridors, including seasonal migration routes, and require appropriate mitigation in the event such areas are impacted by development.	***Consistent.*** See Section 4.C, Biological Resources. No wildlife corridors would be adversely affected by the proposed project, since wildlife does not regularly cross the site while traveling from one place to another. The Walnut Creek drainage channel, located approximately 0.25 mile east and south of the site, is the nearest wildlife corridor. The site is bordered on all sides by land uses that are not conducive to terrestrial wildlife movement (i.e., Diamond Boulevard to the northeast, Galaxy Way to the northwest, I-680 to the southwest, and Willow Way and the Willows Shopping Center to the southeast). As such, wildlife movement through the site is not substantial, and the proposed project would be consistent with this policy. See also discussion regarding Policy POS-3.4.2.

Table 4.I-1 *Continued*

General Plan Provision	Goal, Objective, Policy, or Implementation Language	Project's Relationship to Policy
Policy POS-3.4.2	Protect rare, threatened, or endangered species and their habitats through the environmental review process and in accordance with State and Federal law.	***Consistent with Mitigation.*** As discussed in Section 4.C, Biological Resources, because of the disturbed nature of the site, its geographic isolation from open space areas, and the lack of general habitat for the special-status species, the potential for occurrence of most special-status species is extremely low. Special-status species that have the potential to occur on the site include Pallid bats (*Antrozoas pallidus*), Townsend's big-eared bats (*Corynorhinus townsendii*), and other bat species. Bats could roost along the walls, eaves, and overhanging structures of the existing buildings, but there was no evidence of these species during a biological survey in January 2016. In addition, bird species whose active nests are protected by the MBTA and/or California Fish and Game Code could be impacted by the proposed project. Implementation of recommended mitigation measures, requiring surveys prior to demolition or construction activities, would ensure that any special-species, or active bird nests, would be protected.
Policy POS-3.4.3	Retain significant vegetation, including native vegetation and heritage trees, where feasible, and require replacement plantings as appropriate for mitigation.	***Consistent.*** All of the existing on-site trees are proposed for removal. Approximately 61 of the trees that were on site when environmental review commenced are considered protected trees pursuant to the City's tree preservation and protection ordinance due to a trunk diameter over 24 inches, or due to the tree type. Thus, the project would require the issuance of a tree permit to allow for the removal of the protected trees; the project is anticipated to plant at least 183 trees (exceeding a 3:1 ratio) to replace the protected trees to be removed, consistent with Development Code policy. Additional trees and other ornamental landscaping compatible with the shopping center design would be planted throughout the site.
Policy POS-3.4.4	Plant vegetation to increase benefits to wildlife.	***Consistent.*** See discussion of Policies POS-3.4.2, POS-3.4.3 above. Maturation of the new landscaping would provide habitat suitable to urban-adapted species, but it is not intended to provide substantial habitat for wildlife species.
Policy POS-3.4.5	Coordinate with appropriate regulatory and trustee agencies to enhance protection of special status species and sensitive natural communities.	***Consistent with Mitigation.*** See discussion of Policy POS-3.4.2 above. Section 4.C, Biological Resources, discusses coordination with appropriate regulatory and trustee agencies regarding potential impacts to, and mitigation for, sensitive species that could occupy the site, to the extent required by applicable laws and regulations.

Table 4.I-1 *Continued*

General Plan Provision	Goal, Objective, Policy, or Implementation Language	Project's Relationship to Policy
Policy POS-3.4.6	Avoid construction-related activities during breeding and nesting seasons for special status species. Project-related activities within sensitive habitat of special status species will generally not be allowed during the breeding season or season of greatest effect on their survival. If project activities cannot avoid these seasons, the project applicant will have to arrange for surveys of any special status species within 500 feet of the project area and follow applicable trustee agency protocol for species protection	***Consistent with Mitigation.*** As discussed in Section 4.C, Biological Resources, implementation of recommended mitigation measures would ensure that construction-related activities would avoid nesting birds and bat roosting sites, provide appropriate buffers from occupied bird nests, and adequately mitigate for the loss of special-status bat roosting sites.
D. CULTURAL AND PALEONTOLOGICAL RESOURCES-RELATED POLICIES		
Policy POS-4.1.2	Consult with the State Office of Historic Preservation with respect to managing impacts of development and land use on historic and archaeological resources.	***Consistent.*** As discussed in Section 4.D, Cultural and Paleontological Resources, the project site has a low potential for historic and archaeological resources; consultation with the State Office of Historic Preservation would be warranted if a significant cultural resource were identified at the project site.
Policy POS-4.1.3	Preserve important historic and archaeological sites during new development, reuse, and intensification.	***Consistent.*** See discussion of Policy POS-4.1.2 above.
Policy POS-4.1.4	In identified sensitive areas, require archaeological studies as part of the development review process.	***Consistent.*** See discussion of Policy POS-4.1.2 above.
E. GEOLOGY, SOILS, AND SEISMICITY-RELATED POLICIES		
Policy S-3.1.1	Require as part of the development review process a thorough evaluation of geologic-seismic and soils conditions and risks.	***Consistent with Mitigation.*** Section 4.E, Geology, Soils and Seismicity, of this EIR provides a thorough evaluation of geologic, seismic, and soils conditions and risks, and summarizes the findings and recommendations of the site-specific geotechnical engineering report. Implementation of the geotechnical engineering report recommendations would be consistent with this policy.
Policy S-3.1.2	Require all new development to design structures and buildings pursuant to applicable State and local standards and codes.	***Consistent.*** Through the development review process, the City would ensure that the proposed project complies with all applicable State and local standards and codes. The project would be consistent with this policy. See also discussion regarding Policy S-3.1.1. above.
Policy S-3.2.3	Require soils and geologic hazards analysis and mitigation as part of development project review.	***Consistent with Mitigation.*** See discussion of Policy S-3.1.1 above.
Policy S-3.2.4	Regulate all development, including remodeling or structural rehabilitation, to assure adequate mitigation of safety hazards on sites having a history or threat of slope instability, erosion, subsidence, ground failure, ground rupture, and/or liquefaction.	***Consistent with Mitigation.*** See discussion of Policy S-3.1.1 above.

Table 4.I-1 *Continued*

General Plan Provision	Goal, Objective, Policy, or Implementation Language	Project's Relationship to Policy
Policy S-3.2.5	Control erosion of graded areas with revegetation or other acceptable methods.	***Consistent.*** During the construction period, grading and excavation activities would result in exposure of soil to runoff, potentially causing erosion and entrainment of sediment and contaminants in the runoff. As discussed in Section 4.H, Hydrology and Water Quality, implementation and monitoring of best management practices (BMPs) as part of a Storm Water Pollution Prevention Plan (SWPPP) in compliance with the terms of the State General Construction Permit would manage erosion and stormwater runoff. With implementation of these requirements, the proposed project would be consistent with this policy.
F. GREENHOUSE GAS EMISSIONS-RELATED POLICIES (NOTE: SEE ALSO LAND USE-, TRANSPORTATION-, AIR QUALITY-, AND UTILITIES-RELATED POLICIES)		
Policy S-1.4.1	Prepare and implement climate action plans for the Concord Reuse Project site and for the city as a whole to reduce greenhouse gas emissions associated with future development and existing urban activities.	***Consistent with Mitigation.*** Compliance with the Citywide Climate Action Plan is discussed in Section 4.F, Greenhouse Gas Emissions. Greenhouse gas-reducing design features, energy-efficient systems and water-conserving features would be incorporated into project plans and implemented by the project applicant. The project will include Title 24, Part 11 (Tier 1) standards for building construction. Therefore, the proposed project would be consistent with this policy with the implementation of the recommended mitigation measure.
Policy LU-9.1.6	Establish standards for new development and additions to existing development to incorporate green building measures.	***Consistent with Mitigation.*** The Citywide Climate Action Plan recommends that projects meet more restrictive building code standards. See discussion of Policy S-.1.1 above.
G. HAZARDS AND HAZARDOUS MATERIALS-RELATED POLICIES		
Policy S-5.1.1	Coordinate with the Contra Costa County Department of Environmental Health, the Department of Toxic Substances Control, the Department of Defense, the Environmental Protection Agency, and other appropriate regulatory agencies, on the review of proposals at sites which may have toxic contamination or include hazardous materials use.	***Consistent.*** A Notice of Preparation was circulated to applicable regulatory agencies requesting their input on the scope of the Draft Environmental Impact Report. The County Department of Environmental Health submitted comments regarding its permitting requirements that would apply to project development or future tenants of the site. Refer to Section 4.G, Hazards and Hazardous Materials, which discusses evaluations of the project site for toxic contamination or other hazardous materials use. Compliance with applicable regulatory agencies requirements would ensure that the proposed project would be consistent with this policy.
Policy S-5.1.3	Control the transport of hazardous materials to minimize potential hazards to the local population.	***Consistent.*** Most retail land uses do not involve the transport, use, or disposal of significant quantities of hazardous materials. Any project-related hazardous materials transportation, use, and disposal would be subject to Local, State, and federal hazardous materials laws and regulations. Compliance with existing regulatory requirements would ensure that any potential hazards associated with hazardous materials transport would be minimized.

Table 4.I-1 *Continued*

General Plan Provision	Goal, Objective, Policy, or Implementation Language	Project's Relationship to Policy
Policy S-5.1.4	Prior to reuse of former commercial, industrial, and military sites, require clean-up to a level consistent with State and federal regulatory agency standards.	***Consistent.*** Section 4.G discusses the regulatory requirements that ensure that all hazardous materials are properly disposed of to the extent required by applicable laws and regulations. Compliance with these measures would ensure that the proposed project would be consistent with this policy.
H. HYDROLOGY AND WATER QUALITY-RELATED POLICIES		
Policy LU-9.2.3	Apply site planning techniques that minimize the amount of impervious paving, promote pedestrian safety, and reduce urban runoff in commercial centers. All new development in California is required to follow Best Management Practices (BMPs) that reduce erosion, sedimentation and other urban runoff from parking lots and commercial centers through the use of permeable surfaces, on-site detention, sediment trapping and filtering and landscaping. Permeable pavements, in particular, have tremendous potential for stormwater management. Pedestrian safety can be achieved through installing better security lighting and signage, creating grade separated walkways, and marking pedestrian crossings.	***Consistent.*** As discussed in Section 4.H, Hydrology and Water Quality, the project includes a variety of green infrastructure features such as pervious paving and bio retention swales to reduce and treat urban runoff prior to discharge into the storm drain system. Safe pedestrian routes through the project site have been evaluated and integrated into the site design. The proposed project would be consistent with this policy.
Policy GM-7.2.1	Require new development to contribute to or participate in the establishment and improvement of …flood control systems in proportion to the demand generated by project occupants and users. The City will manage a development mitigation program that ensures new development pays its share of the costs associated with the provision of these facilities, consistent with the policies in other elements of the General Plan.	***Consistent.*** The project site is not in a Drainage Fee Area Zone, so drainage fees are not required of the project. Through its incorporation of green infrastructure features, the project would generate less runoff compared to the existing conditions at the site. The proposed project would be consistent with this policy.
Policy S-4.1.1	Manage development to ensure compliance with the City's Flood Management Ordinance and the City's Stormwater Management and Discharge Control Ordinance.	***Consistent.*** The project would be required to comply with these ordinances, as applicable, and therefore would be consistent with this policy.
Policy S-4.1.4	Design storm drainage facilities to meet the Contra Costa County Flood Control and Water Conservation District standards and ensure adequate and safe flow to minimize flooding.	***Consistent.*** As discussed in Section 4.H, the City has reviewed the project plans to confirm that the required modifications to storm drainage facilities would comply with applicable standards.
Policy PF-1.3.1	Require new development to provide any needed storm drains that are not part of the City's master storm drain system and to incorporate features into site improvement plans to minimize surface runoff. Such features may include additional landscaped areas and/or swales, permeable paving, parking area design that minimizes runoff, and stormwater detention basins.	***Consistent.*** See discussion of Policy LU-9.2.3 above.
Policy PF-1.3.5	Ensure that new development contributes needed drainage improvements in proportion to a project's impacts, to assure an equitable distribution of costs to construct and maintain the City's master storm drainage system.	***Consistent.*** See discussion of Policy GM-7.2.1 above.

Table 4.I-1 *Continued*

General Plan Provision	Goal, Objective, Policy, or Implementation Language	Project's Relationship to Policy
I. LAND USE AND PLANNING POLICY-RELATED POLICIES		
Policy LU-1.1.5	Identify opportunities for public/private cooperation and City actions for the mitigation of noise, traffic, and other potential conflicts between commercial uses, multi-family residential, single-family residential neighborhoods.	***Consistent with Mitigation.*** The proposed commercial shopping center project is approximately 0.25 mile from nearest residential area (a single-family residential neighborhood in Pleasant Hill, west of Contra Costa Boulevard and I-680). Development of the proposed project would not result in any significant environmental impacts that would directly affect this residential area, as analyzed more fully in other chapters of the EIR. The project would be complementary to other commercial uses in the vicinity of the project site. Feasible mitigation measures are recommended to minimize air quality and traffic impacts that could have an impact on uses in the vicinity. Therefore, the project is consistent with this policy.
Policy LU-3.1.1	Provide for regional centers that have an appealing mix of tenants and are designed with site amenities to attract customers from both local neighborhoods and region-wide communities.	***Consistent.*** As discussed in Section 4.M, Economic Impact Analysis, and the proposed shopping center is intended to have a successful mix of tenants and enhanced site amenities such as a luxury movie theater and a landscaped plaza that would attract customers from the City as well as a broader market area.
Policy LU-3.1.4	Plan for new commercial development to expand the variety of goods and services to meet region-serving as well as local needs.	***Consistent.*** See discussion of Policy LU-3.1.1. The project is a new commercial development consistent with this policy. The project would serve regional as well as local needs.
Policy LU 3.1.5	Identify new areas for region-serving commercial uses at locations that take advantage of major transportation routes. These areas include, but are not limited to Central Concord, North Concord, and the Concord Reuse Project (CRP) area.	***Consistent.*** See discussion of Policy LU-3.1.1. The project is intended to draw customers from a regional market area. The site is located in close proximity to major transportation routes including Willow Pass Road and Concord Avenue that provide easy access to I-680 and SR-242.
Policy LU-4.1.1	Continue to expand Central Concord's role as a focal point for business, entertainment, dining, cultural, and civic gatherings.	***Consistent.*** The project is intended to be an upscale shopping center with a movie theater, and restaurants, as well as retail shopping opportunities. The project will have enhanced landscaping and amenities for public benefit including outdoor seating and plazas that will function as a public gathering places.
Policy LU-4.2.4	Encourage new development projects to include amenities for public benefit, such as affordable housing, pedestrian-oriented facilities, and historic preservation. Pedestrian-oriented facilities are enhanced with amenities such as outdoor seating, plazas, public art, weather protection, transit waiting areas (benches and shelters), and links to regional trails and bikeways.	***Consistent.*** See discussion of Policy LU-4.2.4.

Table 4.I-1 *Continued*

General Plan Provision	Goal, Objective, Policy, or Implementation Language	Project's Relationship to Policy
Policy LU-5.1.2	Promote a large, diverse regional office sector to ensure a resilient economic base.	***Consistent.*** The project would demolish approximately 619,000 square feet of office buildings on the site that were constructed between 1970 and 1984 as a regional office for Chevron Corporation. The existing office space at the project site is not in high demand. The proposed project is intended to include approximately 5,000 square feet of office space, which may include professional offices, medical, and/or dental offices. The current demand for office space in Concord is relatively weak. City's current total vacancy rate for office space is approximately 14 percent, with approximately 900,000 sf of office space currently available for lease.[8]
Policy LU-7.1.2	Provide for compatibility between the airport and neighboring land uses within the Airport Influence Area through review of new and redevelopment projects for consistency with noise, safety, and airspace protection.	***Consistent.*** The project site is located within the Buchanan Field Airport Influence Area, and approximately half of the project site (the western portion) is overlain by the airport's Safety Zone 4. Under the ALUCP, uses in Safety Zone 4 are restricted to fewer than four habitable floors in height and no aboveground fuel storage of more than 2,000 gallons is allowed. The project proposes buildings and uses consistent with ALUCP standards.
Policy LU-7.1.3	Enforce safety compatibility criteria consistent with the County Airport Land Use Commission (ALUC) Plan for new and redevelopment projects within airport safety zones.	***Consistent.*** See discussion of Policy LU-7.1.2 above.
Policy LU-7.1.4	Forward applications for general plan amendments, rezoning requests, and major land use actions as appropriate to the County Airport Land Use Commission (ALUC) for review.	***Consistent.*** The City forwarded the proposed application to the ALUC for review, and ALUC staff determined that the project is consistent with the ALUC Plan.
Policy LU-9.1.3	Require new commercial development to provide comprehensive landscaping, including hardscape and parking lot areas as well as pervious areas.	***Consistent.*** See discussion of Policy LU-9.1.3 in Section A, Aesthetics-Related Policies Above
Policy LU-10.1.5	Require trees and other landscaping within parking lots.	***Consistent.*** See discussion of Policy LU-9.1.3 above.
J. NOISE-RELATED POLICIES		
Policy S-2.1.1	Use the community noise level exposure standards, shown in [Concord General Plan] Figure 7-8, as review criteria for new land uses. These standards show noise levels that are "normally acceptable", "conditionally acceptable", and "normally unacceptable" and "clearly unacceptable" for different types of land use.	***Consistent.*** Refer to Section 4.J, Noise, which evaluates the proposed project in accordance with these standards. The proposed project would not result in any exceedances in community noise level exposure standards, and therefore the proposed project would be consistent with this policy.

[8] Newmark Cornish & Carey, 2016.*Quarterly Report, North I-680, Office, Flex.* First Quarter 2016.

Table 4.I-1 *Continued*

General Plan Provision	Goal, Objective, Policy, or Implementation Language	Project's Relationship to Policy
Policy S-2.1.2	Require a noise study and mitigation measures for all projects that have noise exposure greater than "normally acceptable" levels. The need for mitigation of exterior noise exposure for development shall be evaluated on a case-by-case basis. Within urban residential neighborhoods where medium and high density residential development and mixed use development is planned, the City will balance the need for noise mitigation with urban design considerations, and may not require exterior walls along streets where an attractive pedestrian-oriented environment with porches and front stoops is desired.	***Consistent.*** Section 4.J, Noise includes an analysis of the project's potential noise impacts. The proposed project would not result in noise exposure greater than "normally acceptable" levels for a commercial shopping center, and would not require mitigation measures.
Policy S-2.1.3	Consider an increase of four or more dBA to be "significant" if the resulting noise level would exceed that described as "normally acceptable" in Figure 7-8. When an increase in noise would result in a "significant" impact to residents or businesses, then mitigation will be required to reduce noise exposure. If the increase is four dBA or more, the change in noise is discretional. If the increase in noise is three dBA or less, then the noise impact is considered insignificant and no mitigation is needed. By setting a specific threshold of significance in the General Plan, this policy will facilitate making a determination of environmental impact, as required by the California Environmental Quality Act. It will help the City judge whether (1) the potential impact of a development project on the noise environment warrants mitigation, or (2) a statement of overriding considerations will be required.	***Consistent.*** Section 4.J, Noise, utilized the identified thresholds set forth in Policy S-2.1.3. In the worst-case condition of traffic in front of the project site, the proposed project would result in a traffic noise increase of less than 3 dBA in both the Existing Plus Project and Cumulative Plus Project conditions. Therefore, this increase is considered less than significant. The increase in traffic noise would be substantially less further from the site as traffic is distributed throughout the road network.
Policy S-2.2.1	Provide for the mitigation of noise exposure in areas of the City exposed to noise levels in excess of the "normally acceptable" standards to the extent feasible.	***Consistent.*** The proposed project would not result in noise exposure greater than "normally acceptable" levels, and would not require any mitigation measures.
Policy S-2.2.2	Reduce noise intrusion generated by miscellaneous noise sources through conditions of approval to control noise-generating activities.	***Consistent.*** The proposed project would not result in noise exposure greater than "normally acceptable" levels, and would not require conditions of approval to control noise generating activities.
Policy S-2.2.3	Use the Buchanan Field Airport-Noise Contour Map for evaluation of noise impacts around Buchanan Field Airport. The Buchanan Field Airport Noise Contours will be used in conjunction with the noise contours for car and truck noise during the development review process.	***Consistent.*** The northwestern corner of the project site is within the 55-60 CNEL noise contours of the Buchanan Field Airport. This noise level is considered normally acceptable for commercial land uses.

Table 4.I-1 *Continued*

General Plan Provision	Goal, Objective, Policy, or Implementation Language	Project's Relationship to Policy
Policy S-2.2.4	Require new noise sources to use best available control technology (BACT) to minimize noise emissions. Noise from mechanical equipment can be reduced by soundproofing materials and sound-deadening installation; controlling hours of operation also will reduce noise impacts during the morning or evening.	***Consistent.*** The proposed project would utilize rooftop heating, ventilation, and air conditioning (HVAC) equipment, as well as ground-floor garbage compactors at the rear of buildings. Rooftop equipment would be screened by parapet walls, which would reduce noise exposure to surrounding uses. Noise levels from equipment and other on-site stationary sources would be within the normally acceptable range for commercial uses.
Policy S-2.2.5	Require developers to reduce the noise impacts of new development on adjacent properties through appropriate means. Increasing setbacks, screening, use of soundproofing materials and double-glazing windows, as well as fences and walls, building orientation and design, and landscaping all can help buffer or mask sound.	***Consistent.*** After accounting for the distance to the nearest sensitive receptors (residences), the resulting noise from constructional and operational activities would be lower than traffic noise on roadways in the project vicinity. Therefore the proposed project would not affect adjacent properties and would comply with the intent of this policy.
K. PUBLIC SERVICES AND UTILITIES-RELATED POLICIES		
Policy GM-7.2.1	Require new development to contribute to or participate in the establishment and improvement of parks, fire, police, sanitary sewer, water and flood control systems in proportion to the demand generated by project occupants and users. The City will manage a development mitigation program that ensures new development pays its share of the costs associated with the provision of these facilities, consistent with the policies in other elements of the General Plan.	***Consistent.*** As discussed in Section 4.K, Public Services and Utilities, while the proposed project may incrementally increase the demand for fire and police services, it would not affect established performance standards. Stormwater runoff from the site would be reduced due to increased pervious surfaces. The project will be required to pay applicable development impact fees consistent with City requirements. The proposed project would therefore be consistent with this policy.
Policy GM-7.2.2	Approve a development project only after making findings that one or more of the following conditions are met: a. An adopted mitigation program will result in performance standards being achieved before or at the time of project occupancy; b. Implementation of project-specific mitigation measures are needed in order to ensure maintenance of performance standards, and such measures will be required of the project applicant; or c. Capital projects planned by the City or special district(s) will result in maintenance of the performance standards.	***Consistent.*** The Final EIR will include the adoption of a Mitigation Monitoring and Reporting Program that requires the implementation of all specified mitigation measures. However, no mitigation measures are required to address project impacts Public Services or Utilities, as compliance with existing City requirements would avoid any significant environmental impacts. The proposed project would therefore be consistent with this policy.
Policy S-7.1.1	Evaluate the effects of new development on law enforcement service and take public safety issues into account when reviewing land use proposals.	***Consistent.*** Section 4.K, Public Services and Utilities, evaluates the effects of the proposed project on law enforcement services and determines that the project would not result in a significant impact on police services. Security features would be implemented as part of the proposed project to minimize the potential increase in demand for police services. The proposed project would therefore be consistent with this policy.

Table 4.I-1 *Continued*

General Plan Provision	Goal, Objective, Policy, or Implementation Language	Project's Relationship to Policy
Policy S-7.2.1	Coordinate plans and activities with the Contra Costa County Fire Protection District (CCCFPD), including siting of fire stations.	***Consistent.*** As discussed in Section 4.K, Public Services and Utilities, CCCFPD has reviewed the plans for the proposed project. The project would not significantly affect the performance standards of the CCCFPD. The project does not require a new fire station.
Policy S-7.2.2	Require new development to incorporate water systems that meet CCCFPD fire flow requirements or to provide adequate on-site water storage.	***Consistent.*** Specific requirements pertaining to site design and fire flow would be included as conditions of approval and assessed through the permit review processes. The proposed project would therefore be consistent with this policy.
Policy S-7.2.3	Ensure that sufficient access for fire protection services is available in all new development.	***Consistent.*** The proposed project would be subject to all Fire and Building Code requirements as well as other applicable codes that are designed to minimize risks of fire and fire hazards to the greatest extent possible. EIR Section L, Transportation and Circulation, includes recommendations to improve the circulation and access for emergency vehicles and trucks. Specific requirements pertaining to site design would also be required as conditions of approval or would be assessed through the permit review processes. The proposed project would therefore be consistent with this policy.
Policy LU-3.1.6	Ensure the timely implementation of necessary infrastructure to support existing and new region-serving development.	***Consistent.*** Refer to Section 4.K, Public Services and Utilities for a discussion of the on-site infrastructure improvements that would be made to serve the project. Existing off-site public infrastructure is adequate to serve the project. The proposed project would therefore be consistent with this policy.
Policy PF-1.1.1	Coordinate with the Contra Costa Water District (CCWD) to provide an adequate and safe water supply.	***Consistent.*** CCWD was consulted regarding the project and anticipates its treated water distribution system is capable of serving the water needs of the project. Refer to Section 4.K, Public Services and Utilities, for a discussion of water supply. The proposed project would therefore be consistent with this policy.
Policy PF-1.1.2	Encourage water conservation through City programs and cooperation with the CCWD.	***Consistent.*** Recycled water, provided by the Central Contra Costa Sanitary District (CCCSD) to the project site, may be used as a potable water alternative for landscaping irrigation, decorative water features, and restroom facilities to conserve CCWD's water supply. The proposed project would therefore be consistent with this policy.
Policy PF-1.2.2	Reduce the need for sewer system improvements by requiring new development to incorporate water conservation measures.	***Consistent.*** Refer to Section 4.K, Public Services and Utilities, the project's water use and conservation measures. Off- -site sewer system improvements are not required for the project. Construction of new buildings at the site would require compliance with current building code requirements which require substantial water conservation features.

Table 4.I-1 *Continued*

General Plan Provision	Goal, Objective, Policy, or Implementation Language	Project's Relationship to Policy
Policy PF-1.4.1	Require new development to coordinate with all utility providers to assure quality services to all residents and businesses throughout the community.	***Consistent.*** Utility providers were consulted regarding the project. Section 4.K, Public Services and Utilities, documents the consultation and evaluates the effects of the proposed project on services and utilities and determines that the project would not result in significant impacts to utility providers. The Applicant would continue to coordinate with all utility providers to ensure services to the project site. The proposed project would therefore be consistent with this policy.
Policy PF-1.5.1	Expand reduction and recycling efforts within the City to divert increasingly larger portions of the waste stream from local landfills.	***Consistent.*** Since the project is over 10,000 square feet, the City Construction and Demolition Recycling Ordinance (CMC 8.20.330 et seq.) would regulate the recycling of demolition waste on the site. The ordinance requires that a minimum 50 percent of all waste from construction and demolition (C&D) waste debris and 75 percent of all concrete, soil, asphalt, and masonry products (inert debris) be recycled or reused. The C&D and inert debris can be recycled on-site, or can be taken to specific recycling facilities. The proposed project would include recycling bins and Concord Disposal Service would provide recycling services to the site, which would continue the reduction efforts within the City and would incorporate recycling areas in a commercial site. The proposed project would therefore continue the recycling efforts within the City and would be consistent with this policy.
L. TRANSPORTATION AND CIRCULATION-RELATED POLICIES		
Policy T-1.1.2	Maintain and upgrade transportation systems to provide smooth flow of traffic, minimize vehicle emissions, and save energy. Transportation improvements should be consistent with statewide greenhouse gas reduction goals established by Assembly Bill 32, and the land use and transportation policy initiatives established by Senate Bill 375.	***Consistent with Mitigation.*** Mitigation measures are recommended to minimize traffic impacts, which will also minimize vehicle emissions and energy consumption. Also see the discussion above for Policy S-1.4.1 regarding greenhouse gas emissions.
Policy T-1.1.3	Unless otherwise specified, the benchmark for the evaluation of intersections and roadway segments is LOS D. In the Downtown area, the benchmark is LOS E, recognizing the more urban, pedestrian-oriented character of this area. The Downtown is defined as the area served by streets designated Downtown in this element. The LOS E benchmark also applies in the Concord BART Station vicinity, the North Concord - Martinez BART Station vicinity, and along the City's transit routes. Transit routes are generally defined as roads with two or more bus transit lines, such as Concord Avenue, Clayton Road, and Treat Boulevard.	***Consistent with Mitigation.*** See discussion of Policy T-1.1.2 above. The TIS includes an LOS analysis of area intersections affected by the project and recommends feasible mitigation measures to reduce the project's impacts.
Policy T-1.1.4	Require all new development to locate structures to accommodate ultimate street widths and required setbacks.	***Consistent with Mitigation.*** Adjacent right-of-ways are dedicated and constructed to their ultimate width; the proposed improvements would be constructed consistent with required setbacks.

Table 4.I-1 *Continued*

General Plan Provision	Goal, Objective, Policy, or Implementation Language	Project's Relationship to Policy
Policy T-1.1.5	Require all new development to provide adequate right-of-way and to construct ultimate on and off-site improvements.	***Consistent with Mitigation.*** Dedication of additional right-of-way is not required, as adjacent right-of-ways are dedicated and constructed to their ultimate width. The project would implement on- and off-site improvements, such as modifications to turn lanes adjacent to the site, as discussed in Section 4.L, Transportation and Circulation.
Policy T-1.1.9	Limit new land uses with significant reliance on trucks to parcels fronting designated truck routes, in industrial areas, or within ¼ mile driving distance of freeways.	***Consistent.*** Diamond Boulevard is not a designated truck route but the project site meets criteria for being located within 1/4 mile driving distance to freeway.
Policy T-1.1.13	Coordinate traffic signal systems with abutting jurisdictions.	***Consistent with Mitigation.*** The City has consulted with the City of Pleasant Hill regarding the project's potential traffic impacts. The City of Pleasant Hill has committed to working with the City of Concord and Caltrans regarding the implementation of Mitigation Measure TRANS-5.[9]
Policy T-1.1.16	Continue to provide and enhance landscaped medians and street edges that are visually pleasing and provide shade and buffers for pedestrians and cyclists; landscaping should use native or low-water plants and reduce stormwater runoff to the greatest extent possible.	***Consistent.*** New low-water landscaping compatible with the new shopping center layout would be installed throughout the project site, and new street trees and associated landscaping would be provided adjacent to public streets to provide a visually appealing streetscape. Landscaped parking lots would occupy the center of the site. Bio treatment planters would be included throughout the parking lot to capture and treat stormwater runoff.
Policy T-1.3.1	Work with employers to develop Transportation Demand Management plans to increase carpooling and encourage the use of public transportation, bicycling, and walking; consider other trip-reduction approaches such as telecommuting, shuttles, and transit passes.	***Consistent with Mitigation.*** Mitigation Measure TRANS-3 calls for the implementation of a TDM Plan that would include the following measures: supporting a local commuter service to and from the BART station on Route 91X; providing carpool and/or EV parking spaces; providing bike parking and storage, showers/changing facilities for employees; and bike parking throughout the site.
Policy T-1.3.3	Ensure that streets are designed to balance the needs of multiple travel modes, including vehicles, pedestrians, bicycles, and transit. This policy supports the concept of "complete streets," consistent with AB 1358. New streets should be designed to balance the needs of motorists with the needs of other travelers and should recognize the special needs of children, seniors, and persons with disabilities. Over time, the existing street system will be adapted to reflect the "complete streets" emphasis, making it easier to travel around Concord without a car.	***Consistent with Mitigation.*** The project site is situated in an area dominated by automobile traffic, and most employees and consumers are expected to arrive by automobile. However, the site is served by transit and is adjacent to Willow Way and Galaxy Way, which are both recommended for future Class II Bike Lanes. Sidewalks and striped crosswalks connect the site to adjacent commercial centers. Mitigation is recommended to address the project's impacts to transit and pedestrian facilities.
Policy T-1.3.5	Consider developing one or several Transportation Demand Management programs for downtown and other areas with concentrations of employees in which employers with 50 or more employees can participate by paying a fee; identify ways for employers with fewer employees to participate where appropriate.	***Consistent with Mitigation.*** See discussion of Policy T-1.3.1, above.

[9] Eric Hu, P.E. 2016. *RE: Veranda Shopping Center Traffic Mitigation Concurrence*. April 19.

Table 4.I-1 *Continued*

General Plan Provision	Goal, Objective, Policy, or Implementation Language	Project's Relationship to Policy
Policy T-1.5.1	Ensure adequate parking facilities are provided for public convenience and to promote economic development, where consistent with other objectives such as promoting public transit use, walking and bicycling.	***Consistent.*** The project would provide up to 1,500 parking spaces to meet the City's vehicle parking requirements and projected parking demand. Disabled spaces would be provided in locations and at ratios required by the Americans with Disabilities Act (ADA) and other applicable laws and regulations. The project would also provide the required number of motorcycle spaces (approximately 29 based on current site plan) pursuant to the City requirement of 1 space per 50 vehicle spaces. In addition, approximately EV parking spaces would be provided. In addition, the project would provide the required bicycle parking (anticipated to be over 200 bicycles based on current site plan) consistent with the City's requirement to provide short-term parking (intended for customers) equivalent to 5 percent of the required parking, and long-term parking (intended for employees) equivalent to 10 percent of the required parking. Short-term bicycle parking would be provided in bike racks throughout the shopping center. Long-term bicycle parking for employees would be provided in a secure storage area behind the main plaza.
Policy T-1.5.3	Promote shared parking solutions.	***Consistent.*** The proposed project would provide a supply of on-site, at-grade surface level parking that would meet the projected parking demand. On-site parking would be shared by on-site tenants within the 30 acre shopping center.
Policy T-1.5.5	Locate and design off-street parking lots in a way which makes them less visually prominent.	***Consistent.*** Parking lots within the shopping center would be landscaped with trees and shrubs, and would be broken up by pedestrian paths and buildings located throughout the site, which would reduce their visual prominence.
Policy T-1.6.1	Coordinate with public transportation agencies to facilitate safe, efficient, and convenient pedestrian access to transit stops; work with agencies to relocate stops when necessary.	***Consistent.*** As discussed in Section 4.L, coordination with the County Connection transit service is recommended to coordinate the relocation of route 91X and its bus stop from within the site to a nearby location.
Policy T-1.7.2	Use innovative and effective walkway features to enhance the pedestrian experience, including buffers between pedestrians and vehicle traffic, wide sidewalks, illuminated crosswalks, signalized crossings, bulb-outs, pedestrian-scale lighting, benches, and other street furniture; include trees wherever possible, selecting species that do not negatively impact sidewalks as they grow.	***Consistent.*** The proposed project includes a variety of street furniture, landscaping, special paving, architecture, and other measures to enhance the pedestrian experience within and adjacent to the shopping center.
Policy T-1.7.7	Incorporate urban design measures in commercial and mixed use districts which accommodate pedestrians and support walking.	***Consistent.*** See discussion of Policy T-1.7.2 above.

Table 4.I-1 *Continued*

General Plan Provision	Goal, Objective, Policy, or Implementation Language	Project's Relationship to Policy
Policy T-1.8.4	Require provision of bicycle facilities in new developments, where appropriate.	***Consistent.*** As included in the discussion of Policy T-1.5.1 above, the project would provide the required bicycle parking (anticipated to be for approximately 200 bicycles). Short-term bicycle parking would be provided in bike racks throughout the shopping center. Long-term bicycle parking for employees would be provided in a secure storage area behind the main plaza.
M. ECONOMIC IMPACT ANALYSIS-RELATED POLICIES		
Policy E-4.1.1	Attract catalyst retail businesses that stimulate economic development and raise the standard of retail enterprise.	***Consistent.*** The project would provide various commercial uses, including a grocery store, theater, restaurants (including drive-through restaurants), general retail, general office / medical office, health club, and financial services. The project would be consistent with this policy.
Policy E-4.1.5	Encourage a mix of retail that draws local customers as well as patrons from the greater Bay Area.	***Consistent.*** As discussed in Section 4.M, Economic Impact Analysis, the project proposes a shopping center that would serve regional as well as local needs. The project would be consistent with this policy.
Policy LU-2.1.3	Plan for new commecial development to expand the variety of goods and services to meet neighborhood-serving needs.	***Consistent.*** The project would provide an upscale shopping center in the City and would provide various commercial uses, including a grocery store, luxury-oriented movie theater, restaurants, health club, general retail, general office/ medical office, and financial services. The project would be consistent with this policy.

Source: City of Concord, 2007. *Concord 2030 Urban Area General Plan*; LSA Associates, Inc., 2016.

J. NOISE

This section assesses the project's potential environmental impacts on noise and vibration. Information in this section is used to evaluate the potential impacts of the project with respect to the significance criteria set forth in the Impacts and Mitigation Measures section. Noise modeling data generated to evaluate the project's noise impacts are provided in Appendix H.

1. Setting

This noise assessment follows the applicable noise-related regulatory framework at the City, State, and federal levels (as discussed more fully below).

This section describes the fundamentals of noise, the applicable regulatory framework, and the existing noise and vibration setting within the City of Concord.

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, or 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.

(1) Measurement of Sound. Sound is characterized by various parameters that describe the rate of oscillation (frequency) of sound waves, the distance between successive troughs or crests in the wave, the speed that the wave travels, and the pressure level or energy content of a given sound. The sound pressure level has become the most common descriptor used to characterize the loudness (or amplitude) of an ambient sound, and the decibel (dB) scale is used to quantify sound intensity. A 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. Only audible changes of 3 dBA or greater in existing ambient or background noise levels in excess of applicable thresholds are considered potentially significant.

Because sound can vary in intensity by over one million times within the range of human hearing, a logarithmic loudness scale[1] is used to keep sound intensity numbers at a convenient and manageable level. Thus, a 10 dBA increase in the level of a continuous noise represents a perceived doubling of loudness, while a 20 dBA increase is 100 times more intense, and a 30 dBA increase is 1,000 times

[1] Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale, representing points on a sharply rising curve. The logarithmic decibel scale allows an extremely wide range of acoustic energy to be characterized in a manageable notation.

more intense. 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. Noise levels diminish or attenuate as distance from the source increases based on an inverse square rule, depending on how the noise source is physically configured. Noise level from a single-point source, such as a single piece of construction equipment at ground level, attenuates at a rate of 6 dB for each doubling of distance (between the single-point source of noise and the noise-sensitive receptor of concern). Heavily traveled roads with few gaps in traffic behave as continuous line sources and attenuate roughly at a rate of 3 dB per doubling of distance.

Since the human ear is not equally sensitive to all pitches (sound frequencies) within the entire spectrum, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity in a process called "A-weighting," expressed as "dBA." The dBA or A-weighted decibel refers to a scale of noise measurement that approximates the range of sensitivity of the human ear to sounds of different frequencies. Table 4.J-1 contains a list of typical acoustical terms and definitions.

Table 4.J-1: Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit 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 1 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 section 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 5 decibels to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m. (defined as sleeping hours).
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. (defined as sleeping hours).
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.

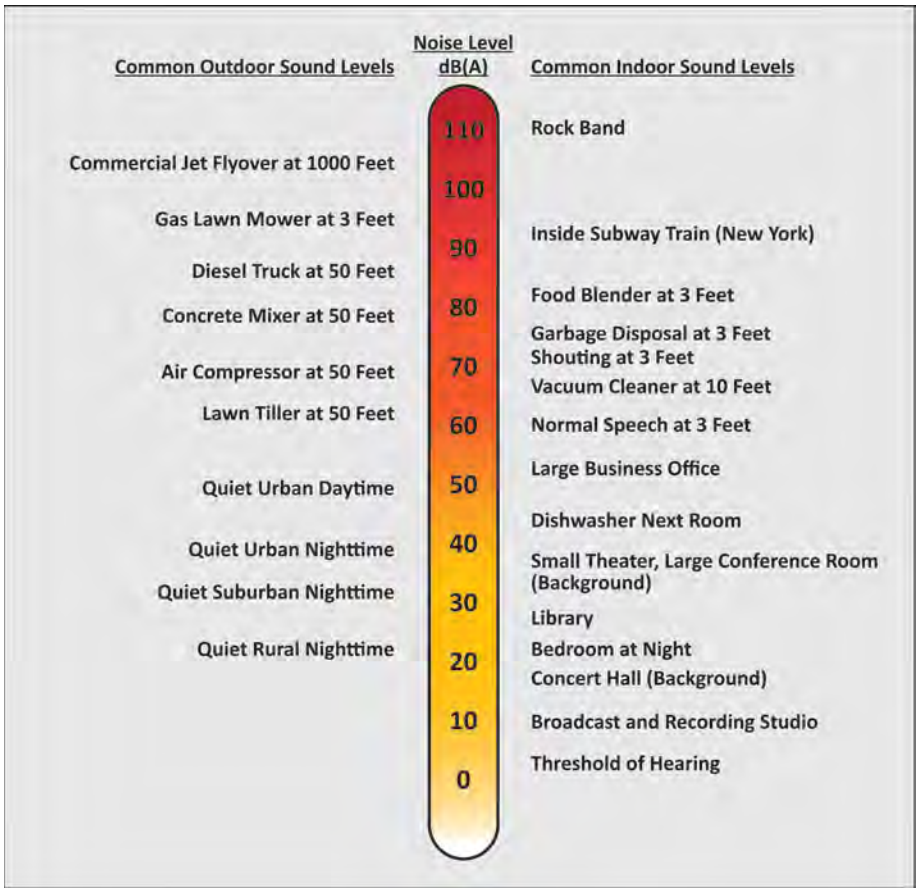
Source: Harris, Cyril M., 1998. Handbook of Acoustical Measurements and Noise Control.

As shown in Table 4.J-1 above, noise can be quantified based on various time periods and ratings. Ambient noise quantification for humans accounts for the annoying effects of sound in the equivalent

continuous sound level (L_{eq}), which is the total sound energy of time-varying noise over a sample period. However, the predominant rating scales for communities in the State of California are the L_{eq}, the community noise equivalent level (CNEL), and the day-night average level (L_{dn}) based on A-weighted decibels (dBA). L_{dn} is similar to the CNEL scale, but without the adjustment for events occurring during the evening relaxation hours.[2] CNEL and L_{dn} are within 1 dBA of each other and are normally exchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours.

Table 4.J-2 shows representative noise sources and their corresponding noise levels in A-weighted decibels (dBA).

Table 4.J-2: Common Sound Levels and Noise Sources



Source: Compiled by LSA Associates, Inc., 2015.

[2] Harris, Cyril M., 1998. Handbook of Acoustical Measurements and Noise Control.

Other noise rating scales 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.

(2) Physiological Effects of Noise. According to the U.S. Department of Housing and Urban Development's 1985 Noise Guidebook, permanent physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 to 90 dBA.[3] 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. For avoiding adverse effects on human physical and mental health in the workplace or in communities, the U.S. Department of Labor, Occupation Health and Safety Administration (OSHA) requires the protection of workers from hearing loss when the noise exposure equals or exceeds an 8-hour time-weighted average of 85 dBA. [4]

Unwanted community effects of noise occur at levels much lower than those that cause hearing loss and other health effects. Annoyance occurs when noise interferes with sleeping, conversation, noise-sensitive work, including learning, or listening to the radio, television, or music. According to the World Health Organization (WHO) noise studies, during daytime hours, few people are seriously annoyed by activities with noise levels below 55 dBA, or moderately annoyed with noise levels below 50 dBA.[5]

b. Characteristics of Groundborne 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 be perceptible from the rattling of windows or a rumbling noise. The rumbling sound caused by the vibration of room surfaces is called groundborne noise. When assessing annoyance from groundborne 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 65 VdB and sometimes lower.[6] Annoyance due to vibration in residential settings starts at approximately 70 VdB. Groundborne vibrations are 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.

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[3] U.S. Department of Housing and Urban Development, 1985. The Noise Guidebook: A Reference Document for Implementing the Department of Housing and Urban Development Noise Policy. March.

[4] Occupational Safety & Health Administration. Regulations, Standards 29 CFR, Occupational Noise Exposure 1910.95.

[5] World Health Organization, Guidelines for Community Noise, Geneva, 1999. Available on the internet at: http://www.who.int/docstore/peh/noise/guidelines2.html.

[6] Federal Transit Administration, 2006. *Transit Noise and Vibration Impact Assessment.* May.

Common sources of groundborne 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 4.J-3. Although the table gives one level for each piece of equipment, ground vibration levels vary from construction activities. The data provide a reasonable estimate for a wide range of soil conditions. In extreme cases, excessive groundborne vibration has the potential to cause structural damage to buildings. For buildings considered of particular historical significance or that are particularly fragile structures, the damage threshold is approximately 96 VdB; the damage threshold for other structures is 100 VdB.[7]

Table 4.J-3: Typical Vibration Source Levels for Construction Equipment

Equipment		PPV[a] at25 feet (in/sec)[b]	Approximate VdB at 25 feet
Pile Driver (impact)	Upper range	1.518	112
	Typical	0.644	104
Pile Driver (sonic)	Upper range	0.734	105
	Typical	0.170	93
Clam shovel drop (slurry wall)		0.202	94
Hydromill (slurry wall)	In soil	0.008	66
	In rock	0.017	75
Vibratory roller		0.210	94
Hoe ram		0.089	87
Large bulldozer		0.089	87
Caisson drilling		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58

[a] PPV = peak particle velocity

[b] in/sec = inches per second

Source: Federal Transit Administration, 2006. *Transit Noise and Vibration Impact Assessment.* May.

c. Regulatory Framework. The following section summarizes the regulatory framework related to noise, including federal, State, and City of Concord plans, policies, and standards.

(1) Federal. Congress enacted the Noise Control Act in 1972. This act authorized the U.S. Environmental Protection Agency (USEPA) 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) categories, as shown in Table 4.J-4. The USEPA cautions that these identified levels are not standards because they do not take into account the cost or feasibility of the levels.

Table 4.J-4: Summary of USEPA 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: U.S. Environmental Protection Agency, 1974. *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. March.

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 USEPA 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.

[7] Harris, C.M., 1998. *Handbook of Acoustical Measurements and Noise Control.*

The noise effects associated with an outdoor L_{dn} of 55 dBA are summarized in Table 4.J-4. At 55 dBA L_{dn}, 95 percent sentence clarity (intelligibility) may be expected at 11 feet, 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. The State of California has established regulations that help prevent adverse impacts to occupants of buildings located near noise sources. The State Noise Insulation Standard requires buildings to meet performance standards through design and/or installation of building materials that would offset, as necessary, any noise source in the vicinity of the receptor. State regulations include requirements for the construction of new hotels, motels, apartment houses, and dwellings other than detached single-family dwellings that are intended to limit the extent of noise transmitted into habitable spaces. These requirements are found in the California Code of Regulations, Title 24 (known as the Building Standards Administrative Code), Part 2 (known as the California Building Code), Appendix Chapters 12 and 12A. For limiting noise transmitted between adjacent dwelling units, the noise insulation standards specify the extent to which walls, doors, and floor ceiling assemblies must block or absorb sound. For limiting noise from exterior noise sources, the noise insulation standards set an interior standard of 45 dBA CNEL in any habitable room with all doors and windows closed. In addition, the standards require preparation of an acoustical analysis demonstrating the manner in which dwelling units have been designed to meet this interior standard, where such units are proposed in an area with exterior noise levels greater than 60 dBA CNEL.

The State has also established land use compatibility guidelines for determining acceptable noise levels for specified land uses. The City has adopted and modified the State's land use compatibility guidelines, as discussed below.

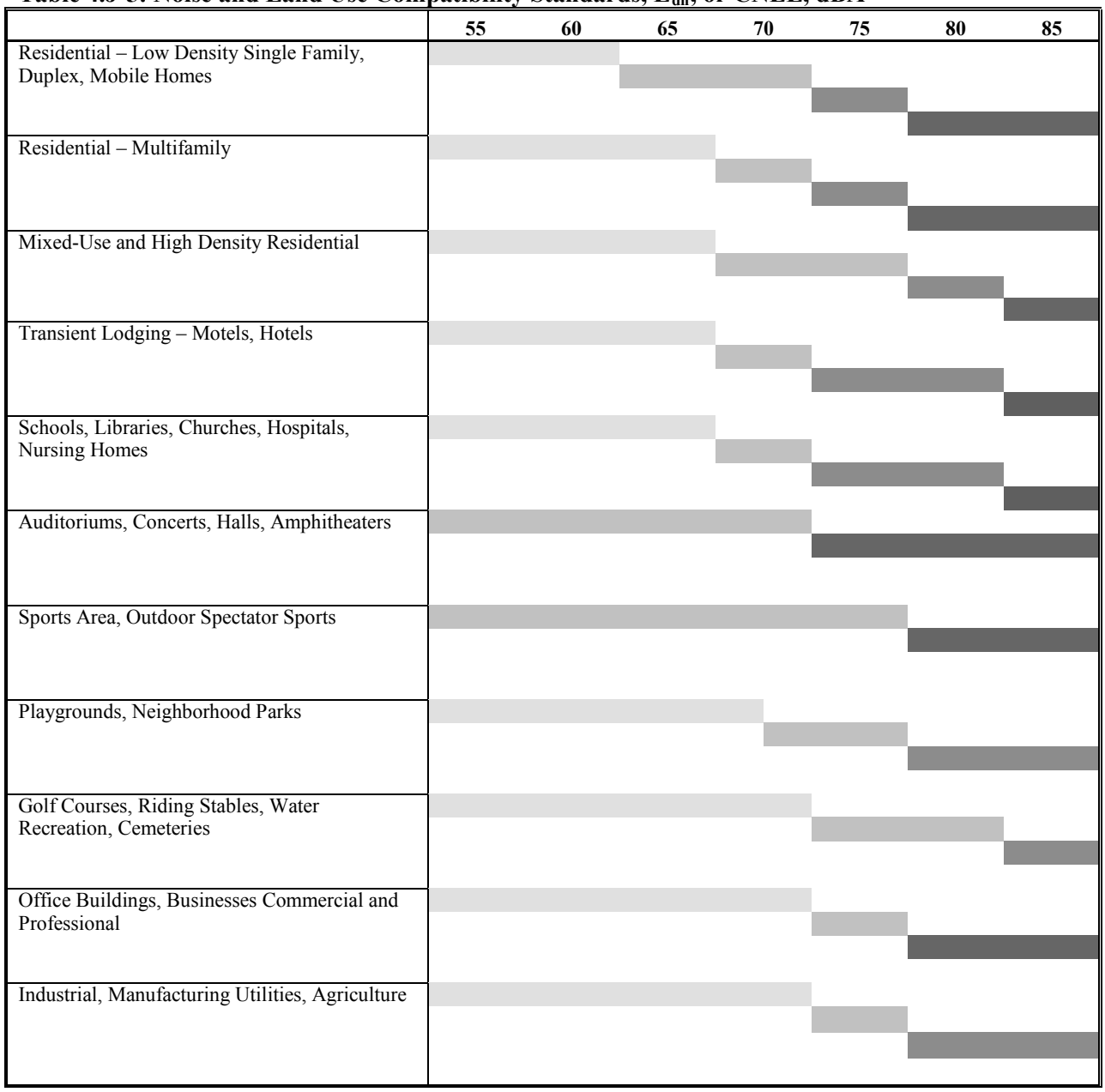
(3) Local

City of Concord General Plan. The City of Concord General Plan addresses noise in the Safety and Noise Element.[8] As discussed above, the State has established land use compatibility guidelines for determining acceptable noise levels for specified land uses in the State of California General Plan Guidelines. The City has adopted the State's land use compatibility guidelines, as shown in Table 4.J-5 below. These land use compatibility guidelines provide the City with "normally acceptable" noise level standards as a guide for planning and development decisions as these relate to land use siting. In addition, the Safety and Noise Element includes noise-related principles and policies that call for the City to enforce noise and land use compatibility standards and mitigate noise sources. General Plan principles and policies that specifically address noise impacts relevant to the project are summarized below. The complete text of these policies is listed in Section 4.I, Land Use and Planning Policy, Table 4.I-1.

- *Principle S-2.1*: Encourage Land Use Compatibility for Community Noise Environments.
- Policy S-2.1.1: Use the community noise level exposure standards, shown in Figure 7-8 [reproduced as EIR Table 4.J-5 below], as review criteria for new land uses.

[8] Concord, City of, 2007. *Concord 2030 General Plan*. October.

Table 4.J-5: Noise and Land Use Compatibility Standards, L_{dn}, or CNEL, dBA



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

Source: City of Concord, 2007.

- Policy S-2.1.2: Require a noise study and mitigation measures for all projects that have noise exposure greater than "normally acceptable" levels.
- Policy S-2.1.3: Consider an increase of four or more dBA to be "significant" if the resulting noise level would exceed that described as "normally acceptable" in Figure 7-8 [reproduced as EIR Table 4.J-5 above].
- *Principle S-2.2*: Mitigate Noise Sources.
- Policy S-2.2.1: Provide for the mitigation of noise exposure in areas of the City exposed to noise levels in excess of the "normally acceptable" standards to the extent feasible.
- Policy S-2.2.2: Reduce noise intrusion generated by miscellaneous noise sources through conditions of approval to control noise-generating activities.
- Policy S-2.2.3: Use the Buchanan Field Airport—Noise Contour Map for evaluation of noise impacts around Buchanan Field Airport.
- Policy S-2.2.4: Require new noise sources to use best available control technology (BACT) to minimize noise emissions.
- Policy S-2.2.5: Require developers to reduce the noise impacts of new development on adjacent properties through appropriate means.

City of Concord Municipal Code. The City of Concord addresses noise impacts in Municipal Code Section 18.150.130.O, Performance Standards, Noise, and in Chapter 19.35, Transportation Demand Management Program.[9] The Code establishes noise standards for all new and existing land uses.

18.150.130 Performance Standards.
This section establishes performance standards for all new and existing land uses, including temporary uses, to minimize operational impacts and promote compatibility with adjoining areas and uses, unless specifically exempted herein or through a condition of approval.

O. Noise. All noise emanating from the subject site shall comply with the noise standards in the safety and noise element of the general plan. An acoustic study may be required, at the project applicant's expense, for any use which could create or be subject to noise exposure greater than that deemed normally acceptable by the general plan. The acoustic study shall include recommendations on noise attenuating or mitigating measures to reduce noise impacts to acceptable levels. The following are exempt from this requirement:

    1. Emergency Warnings. Warning devices used for alerting persons to the existence of an emergency such as police, fire, and ambulance sirens.
    2. Temporary Uses. Special events such as fairs, festivals, civic and community events, seasonal sales lots, and similar events subject to CDC 18.200.200 (temporary uses and structures).
    3. Churches, Schools, and Similar Institutions. Bells, chimes, or sounds used by churches, schools, and similar institutions played between the hours of 7:00 a.m. and 7:00 p.m. if not played more than five minutes in any one hour.

[9] Concord, City of, 2015. *Concord Municipal Code*. July.

4. Municipal Solid Waste Collection. Collection of solid waste and recyclable materials by the city or under contract with the city.
5. Public Projects and Utilities. Public projects and maintenance undertaken by the city, Contra Costa County, the state or a public utility regulated by the California Public Utilities Commission.
6. Construction. Site preparation and construction activities between the hours of 7:30 a.m. to 6:00 p.m. on weekdays (except on holidays) or as approved by the city as part of a planning permit.
7. Residential Activities. Home improvement and related activities; provided, that such activities do not constitute a nuisance pursuant to CMC 8.25.020 (nuisances defined).

19.35 Transportation Demand Management Program.
Transportation demand management (TDM) has the potential to reduce vehicle trips and vehicle emissions more efficiently and cost effectively than major roadway improvements. This article was enacted by the City for the following purposes:

1. To promote and encourage the use of alternatives by single-occupant vehicles among City residents and individuals working in the City;
2. To support local and regional efforts to relieve traffic congestion in and around the City, thereby reducing noise, pollution, and energy consumption; and
3. To implement 1995 State legislation eliminating requirements enforcing mandatory employer-based trip reduction plans and to improve and adopt new purposes, goals, and objectives for transportation demand management.

d. Existing Noise Sources. The ambient noise environment in the City of Concord is affected by a variety of noise sources, including traffic, rail, airport, and stationary noise sources. At the project site, vehicular traffic on the roadways is the single largest source of noise. Average noise levels are highest along Interstate 680 (I-680) and Diamond Boulevard, adjacent to the project site at the northwest and northeast boundaries, respectively. Airplane overflights are also primary sources of noise at the project site, as are intermittent sources such as leaf blowers and construction equipment. The existing noise setting for the proposed project and vicinity is further described below.

(1) Freeways and Internal Roadways. Motor vehicles with their distinctive noise characteristics are a major source of noise in Concord. The amount of noise varies according to many factors, such as volume of traffic, vehicle mix (percentage of cars and trucks), average traffic speed, and distance from the observer. Major contributing roadway noise sources in the project vicinity include I-680, State Route 4 (SR-4), SR-242, Concord Avenue, Clayton Road, Monument Boulevard, and Willow Pass Road, as well as other arterial and collector roadways throughout the City.

Existing highway and roadway traffic noise levels in the project vicinity were assessed using the Federal Highway Administration (FHWA) highway traffic noise prediction model (FHWA RD-77-108). This model uses a typical vehicle mix for urban/suburban areas in California and requires parameters, including traffic volumes, vehicle speed, and roadway geometry, to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The resultant noise levels are weighted and summed over 24-hour periods to determine the day-night average level (L_{dn}) values. Existing traffic noise contours along modeled roadway segments are shown in Table 4.J-6.

Table 4.J-6: Existing Traffic Noise Levels

Roadway Segment	Average Daily Trips	Centerline to 70 dBA L_{dn} (feet)	Centerline to 65 dBA L_{dn} (feet)	Centerline to 60 dBA L_{dn} (feet)	L_{dn} (dBA) 50 Feet From Centerline of Outermost Lane
Diamond Boulevard – Concord Avenue to Burnett Avenue	17,280	< 50	79	156	64.3
Diamond Boulevard – Burnett Avenue to Galaxy Way	10,290	< 50	< 50	114	62.1
Diamond Boulevard – Galaxy Way to Signalized Site Driveway	10,090	< 50	< 50	112	62.0
Diamond Boulevard – Signalized Site Driveway to Willow Way	9,810	< 50	< 50	110	61.9
Diamond Boulevard – Willow Way to Willows Shopping Center	13,950	< 50	71	137	63.4
Diamond Boulevard – Willows Shopping Center to Willow Pass Road	17,880	< 50	81	160	64.5
Diamond Boulevard – south of Willow Pass Road	6,140	< 50	< 50	84	59.9
Willow Pass Road – west of Diamond Boulevard	42,210	69	133	278	68.2
Willow Pass Road – Diamond Boulevard to Franquette Avenue	38,520	67	126	262	67.8
Willow Pass Road – Franquette Avenue to Market Street	39,360	67	127	266	67.9
Willow Pass Road – Market Street to Gateway Boulevard	26,050	< 50	100	203	66.1
Willow Pass Road – Gateway Boulevard to Galindo Street	14,090	< 50	71	138	63.5
Willow Pass Road – Galindo Street to Port Chicago Highway	19,430	< 50	84	168	64.9
Clayton Road – Market Street to Pine Street	24,280	< 50	96	194	65.8
Clayton Road – Pine Street to Detroit Avenue	26,500	< 50	101	205	66.2
Clayton Road – Detroit Avenue to Gateway Boulevard	19,930	< 50	86	171	65.0
Clayton Road – Gateway Boulevard to Galindo Street	33,440	62	115	239	67.2
Concord Avenue – east of SR-242 NB On-Ramp	31,660	< 50	112	231	67.0
Concord Avenue – SR-242 NB On-Ramp to SR-242 SB Off-Ramp	41,130	69	131	273	68.1
Concord Avenue – SR-242 SB Off-Ramp to John Glenn Drive	33,060	62	115	237	67.2
Concord Avenue – John Glenn Drive to Meridian Park Boulevard	32,230	< 50	113	233	67.1
Concord Avenue – west of Meridian Park Boulevard	32,950	62	114	237	67.1
Contra Costa Boulevard – 2nd Avenue to I-680 SB Ramps	23,860	< 50	95	192	65.7
Contra Costa Boulevard – I-680 SB Ramps to Concord Avenue	31,570	< 50	111	230	67.0
Contra Costa Boulevard – Concord Avenue to Golf Club Road	23,540	< 50	94	190	65.7
Sunvalley Boulevard – Sunvalley Mall to I-680 SB Off-Ramp	40,190	68	129	269	68.0
Willow Pass Road – east of I-680 NB Ramps	43,690	71	136	284	68.4

Source: Kittelson & Associates Inc., April 2016; Compiled by LSA Associates Inc., April 2016.

Roadway Segment	Average Daily Trips	Centerline to 70 dBA L_{dn} (feet)	Centerline to 65 dBA L_{dn} (feet)	Centerline to 60 dBA L_{dn} (feet)	L_{dn} (dBA) 50 Feet From Centerline of Outermost Lane

Note: Traffic noise levels within 50 feet of the roadway centerline are typically calculated manually, with site-specific information, such as topography, included.

(2) Existing Rail Noise Levels. The City of Concord is subject to operational rail noise. The Bay Area Rapid Transit (BART) rail line passes through the City in a generally north-south alignment on elevated tracks. BART has two stops in Concord, at the Concord station and the North Concord/Martinez station. The Concord station is located approximately 1.5 miles east of the project site, and the North Concord/Martinez station is located approximately 3 miles northeast of the project site. Activity on the BART rail line affects the ambient noise environment along the railroad alignment; however, since the rail line and rail stations are located more than a mile from the proposed project site, with intervening structures between the project site and railroad tracks, operational rail noise levels would not significantly influence the noise levels in the project vicinity.

(3) Existing Airport Noise Levels. Aircraft overflights contribute to the ambient noise levels in Concord. Buchanan Field Airport is located approximately 0.5 mile north of the project site. In addition, the John Muir Medical Center Concord Campus, which provides helicopter service for medical emergencies, is located approximately 1.5 miles east of the project site. A small portion of the project site in the northwestern corner is within the 55-60 dBA CNEL noise contour of the Buchanan Field Airport flight tracks; however, the remainder of the project site does not lie within this noise contour.

Other airports with aircraft activity that affect the ambient noise environment within Concord include the Oakland International Airport and the San Francisco International Airport. The project site is located approximately 30 miles northeast of the Oakland International Airport and approximately 40 miles northeast of the San Francisco International Airport. Although noise from aircraft activity is occasionally audible in the project vicinity, due to the distance of the project site from surrounding airports, no portion of the project site lies within the 55 dBA CNEL noise contours of these airports.

(4) Existing Stationary Noise Levels. No existing stationary noise sources, such as plants or factories that make a significant contribution to the noise environment are located in the project vicinity. Intermittent parking lot noise, including engine sounds, car doors slamming, car alarms, loud music, and people conversing, occurs at the project site and on nearby streets. Typical parking lot activities, such as people conversing or doors slamming, generates approximately 60 dBA to 70 dBA L_{max} at 50 feet. Other sources of noise include commercial and office centers that emit noise during operation. Domestic noise sources, such as heating, ventilating, and air conditioning (HVAC) equipment, leaf blowers, and gas-powered lawn equipment, are common noise sources and can produce noise levels measured to be 60 to 75 dBA at 50 feet.

(5) Existing Ambient Noise Measurements. To assess existing noise levels at the project site, LSA conducted four short-term noise measurements on February 4, 2016. The short-term 15-minute noise measurements were recorded at different, but representative, locations on-site between

3:22 p.m. and 4:34 p.m.[10] The first short-term measurement was taken at the northeast corner of the site; the second short-term measurement was taken at the northwest corner of the site; the third short-term measurement was taken at the southwest corner of the site; and the fourth measurement was taken at the southeast corner of the site. Noise measurement data collected during monitoring are summarized in Table 4.J-7. The meteorological conditions at the time of the noise monitoring are shown in Table 4.J-8. The short-term noise measurements indicate that ambient noise in the project site vicinity ranges from approximately 71.0 dBA to 77.1 dBA L_{eq}.

Table 4.J-7: Ambient Noise Monitoring Results, dBA

Location Number	Location Description	Start Time	End Time	L_{eq} [a]	L_{max} [b]	L_{min} [c]	Primary Noise Sources
ST-1	Northeast corner of site	3:22 p.m.	3:37 p.m.	71.0	83.9	63.4	Traffic on Diamond Boulevard, construction across Diamond Boulevard
ST-2	Northwest corner of site	3:41 p.m.	3:56 p.m.	77.1	89.1	72.4	Traffic on I-680
ST-3	Southwest corner of site	4:00 p.m.	4:15 p.m.	75.9	86.1	69.3	Traffic on I-680
ST-4	Southeast corner of site	4:19 p.m.	4:34 p.m.	71.1	82.2	64.5	Traffic on Diamond Boulevard

[a] L_{eq} represents the average of the sound energy occurring over the measurement time period.
[b] L_{max} is the highest sound level measured during the measurement time period.
[c] L_{min} is the lowest sound level measured during the measurement time period.

Source: Compiled by LSA Associates, Inc., February 2016.

Table 4.J-8: Meteorological Conditions During Ambient Noise Monitoring

Location Number	Maximum Wind Speed (mph)	Average Wind Speed (mph)	Temperature (˚F)	Relative Humidity (percent)	Sky Conditions
ST-1	5.3	2.2	59.3	59	Overcast
ST-2	6.0	1.9	58.9	61	Overcast
ST-3	6.3	1.7	59.4	65	Overcast
ST-4	4.0	1.1	58.3	60	Overcast

Source: Compiled by LSA Associates, Inc., February 2016.

e. Sensitive Receptors. Concord's General Plan describes sensitive receptors as facilities that house or attract children, the elderly, and people with illnesses. Sensitive receptors include residences, schools, hospitals, churches, and similar uses that are sensitive to noise. Project construction and operation could adversely affect nearby noise-sensitive land uses. The closest sensitive receptors to the project site are single-family residential units located along Harvard Drive, located approximately 1,000 feet west of the project site. This residential neighborhood is located due west of Contra Costa Boulevard and west of the I-680 freeway, the Sunvalley Mall, and other commercial uses. A senior

[10] Noise measurement data were representative of weekday afternoon traffic conditions.

housing project is also currently under construction on Civic Court, approximately 1,000 feet east of the project site.

2. Impacts and Mitigation Measures

The following section presents a discussion of the impacts related to noise that could result from implementation of the proposed project. The section begins with the criteria of significance and establishes the thresholds to determine if an impact is significant. The latter part of this section presents the impacts associated with implementation of the proposed project and the recommended feasible mitigation measures, if required.

a. Significance Criteria. Pursuant to CEQA Guidelines Appendix G, Environmental Checklist Form, and the applicable criteria set forth in the Regulatory Framework above, the proposed project would have a significant noise effect if it would substantially increase the ambient noise levels for adjoining areas or conflict with adopted environmental plans and goals of applicable regulatory agencies, including, as appropriate, the City of Concord. The proposed project would result in a significant noise impact if it would:

- Expose persons to or generate noise levels in excess of standards established in the City of Concord's General Plan and Municipal Code, or applicable standards of other agencies;
- Expose persons to, or generate, excessive groundborne vibration or groundborne noise levels;
- Result in an increase in permanent ambient noise levels by 4 dBA or more above levels existing without the project for noise-sensitive uses in the project vicinity if the resulting noise level would exceed the "normally acceptable" standard;
- Result in a substantial (over 5 dBA) temporary or periodic increase in ambient noise levels for noise-sensitive uses in the project vicinity above levels existing without the project**;** or
- For a project located within the planning area for the Contra Costa County Airport Land Use Compatibility Plan for Buchanan Field, expose people residing or working in the project area to excessive noise levels.

b. Less-than-Significant Impacts. The following noise sources would produce less than significant effects on sensitive receptor locations within the project area.

(1) Applicable Noise Level Standards. The proposed project is located in an area primarily consisting of commercial and office uses in Concord. The proposed project would add an approximately 375,000-square-foot shopping center within this predominantly commercial area, thereby providing compatible uses with the surrounding area. The dominant source of noise in the project vicinity is traffic noise from I-680, adjacent to the northwest property boundary. As such, the western portion of the site would have a higher noise level than other areas of the site because that area is adjacent to I-680. As seen in Table 4.J-7, the measured noise levels at the noise monitoring sites ST-2 and ST-3 were taken nearest to I-680, approximately 120 feet from the freeway, and measured 77.1 dBA L_{eq} and 75.9 dBA L_{eq}, respectively. ST-1 and ST-4 were taken along Diamond Boulevard and measured 71.0 dBA L_{eq} and 71.1 dBA L_{eq}, respectively.

The City sets normally acceptable noise level standards for land use compatibility. The normally acceptable exterior noise level for commercial developments is up to 75 dBA L_{dn}. The proposed

buildings would be required to comply with applicable building code requirements. Assuming exterior-to-interior noise attenuation achieved with standard Sound Transmission Class (STC) ratings for commercial construction, the interior noise attributable to vehicular traffic on I-680 would be reduced to below the normally acceptable noise levels for the proposed commercial uses within the buildings. The proposed site plan for the shopping center includes a nearly continuous wall of buildings along the southwest perimeter of the site that would reduce freeway noise within the project site. In addition, given the nature of the activities that would occur, exterior areas in front of the buildings, parking lot areas, and landscaped plazas would be below the 75 dBA L_{dn} normally acceptable standard. Therefore, the proposed project (with implementation of the above-described design features) would not expose persons to noise levels in excess of standards established in the City of Concord's General Plan. This impact would be less than significant.

(2) Vibration Impacts. Vibration refers to groundborne noise and perceptible motion. Groundborne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors. Vibration energy propagates from a source, through intervening soil and rock layers, to the foundations of nearby buildings. The vibration then propagates from the foundation throughout the remainder of the structure. Building vibration may be perceived by the occupants as the motion of building surfaces, as a rattling of items on shelves or hanging on walls, or as a low-frequency rumbling noise. The rumbling noise is caused by the vibrating walls, floors, and ceilings radiating sound waves. Annoyance from vibration often occurs when the vibration exceeds 70 VdB, an order of magnitude below the damage threshold for normal buildings.

Typical sources of groundborne vibration are construction activities (e.g., pavement breaking and operating heavy-duty earthmoving equipment) and occasional traffic on rough roads. In general, groundborne vibration from standard construction practices is only a potential issue within 25 feet of sensitive uses. Groundborne vibration levels from construction activities very rarely reach levels that can damage structures; however, these levels are perceptible near the active construction site. With the exception of old buildings built prior to the 1950s or buildings of historic significance, potential structural damage from heavy construction activities rarely occurs. When roadways are smooth, vibration from traffic (even heavy trucks) is rarely perceptible.

The streets surrounding the project site are paved, smooth, and unlikely to cause significant groundborne vibration. In addition, the rubber tires and suspension systems of buses and other on-road vehicles make it unusual for on-road vehicles to cause groundborne noise or vibration problems. It is, therefore, assumed that no such significant vehicular vibration impacts would occur and, therefore, no further vibration impact analysis of on-road vehicles is necessary.

Neither demolition nor construction of this project would include pile driving. Demolition would primarily involve the use of excavators with "claw" attachments to chew at the buildings and separate materials prior to loading demolition debris into dump trucks. 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, below the damage threshold for historic or fragile buildings. The nearest buildings adjacent to the project site (located at the Willows Shopping Center, over 50 feet away) are unlikely to experience any structural damage from groundborne vibration associated with demolition or construction activity. The closest residential units to the project site are located approximately 1,000 feet west of the project site and would not experience any significant groundborne vibration from the project. Furthermore, the

proposed project would not contain any permanent sources of groundborne vibration given its retail commercial nature. Therefore, project-related groundborne vibration impacts would be below thresholds at which people or buildings would be affected and would thus be considered less than significant.

(3) Substantial Permanent Increase in Ambient Noise Levels. The following section addresses possible noise level increases in the project vicinity resulting from implementation of the proposed project. Potential sources of increased noise level include mobile source noise and stationary source noise impacts. Mobile source noise would be attributable to the additional vehicle trips that would be a result of the proposed project. Stationary source noise includes noise generated by the commercial land uses that would occupy the shopping center.

Traffic Noise. To assess traffic noise impacts, the traffic noise levels along major roadway segments within the project vicinity were projected using FHWA modeling to predict traffic noise level conditions with and without the proposed project. FWHA modeling was based on existing traffic conditions as documented by Kittelson & Associates, Inc.[11] FWHA modeling results are summarized in Table 4.J-9. The table includes projected traffic noise levels as measured at 50 feet from the centerline of the outermost traveled lane along the modeled roadway segments. The model does not account for existing sound walls or terrain features that could reduce traffic noise levels at adjacent land uses, but rather assumes a reasonable worst-case direct line-of-sight over hard surface to the modeled traffic noise sources.

Table 4.J-9 shows a minor change in the traffic noise levels associated with the implementation of the proposed project. The largest increase in traffic-related noise as a result of the project would be directly in front of the project site on Diamond Boulevard, between Signalized Site Driveway (the main site entrance) and Willow Way, and Diamond Boulevard between Galaxy Way and Signalized Site Driveway, with up to a 2.4 dBA and 2.2 dBA increase, respectively, under Existing Plus Project conditions and Existing No Project conditions. In addition, there would be a 2.3 dBA and 1.7 dBA increase on Diamond Boulevard between Burnett Avenue and Galaxy Way and Diamond Boulevard between Galaxy Way and the Signalized Site Driveway, respectively, under Cumulative Plus Project conditions over the Cumulative No Project conditions traffic noise levels. This noise level increase is less than the 3 dBA increase considered to be perceptible by the human ear in an outdoor environment and less than the established significance criteria of a 4 dBA permanent increase in ambient noise levels. These noise levels are in the normally acceptable range for commercial land uses. In addition, no existing noise-sensitive land uses exist along these roadway segments. Therefore, no significant traffic noise impacts would occur for off-site land uses. As a result, no mitigation is required to address off-site traffic-related noise.

Based on LSA's traffic noise modeling, exposure of uses on the project site to traffic noise would range up to 65.9 dBA CNEL at the rear of the tenant pad buildings closest to Diamond Boulevard, as shown in Table 4.J-9. This noise level is within the normally acceptable level established for commercial uses by the City's land use compatibility chart, and individuals patronizing the shopping center would not be exposed to excessive noise levels. Most of the shopping center's walkways, exterior common areas, and outdoor seating areas would be located internal to the project site and

[11] Kittelson & Associates, Inc., 2016. *The Veranda Shopping Center Transportation Impact Study*. April.

would experience lower noise levels due to their greater distance from roadways, as well as noise reduction from buildings. Based on attenuation provided by distance, exterior areas in front of the buildings, parking lot areas, and landscaped plaza would be below the 65 dBA CNEL noise level.[12] Assuming standard building exterior-to-interior noise attenuation, the interior noise attributable to vehicular traffic would be reduced to below the normally acceptable noise levels for the proposed commercial uses in the buildings. Therefore, traffic-related on-site noise impacts would be less than significant and no mitigation measures are required.

[12] Based on sound engineering methods, sound that is radiated from a point source drops in level at 6 dB per doubling of distance. For example, a noise level measured at 50 feet from the source would be measured 6 dB lower at a distance of 100 feet. The formula to calculate this reduction is: Decibels of Change = 20xlog(distance 1/distance2).

Table 4.J-9: Summary of Traffic Noise Levels

Roadway Segment	Existing No Project Conditions			Existing Plus Project Conditions			Cumulative (2040) No Project Conditions			Cumulative (2040) Plus Project Conditions		
	ADT	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane	ADT	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane	Increase over Existing No Project Conditions	ADT	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane	Increase over Existing No Project Conditions	ADT	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane	Increase over Existing No Project Conditions	Increase over Cumulative No Project Conditions
Diamond Boulevard – Concord Avenue to Burnett Avenue	17,280	64.3	22,430	65.5	1.2	20,410	65.1	0.8	25,030	66.0	1.7	0.9
Diamond Boulevard – Burnett Avenue to Galaxy Way	10,290	62.1	16,890	64.2	2.1	16,690	64.2	2.1	28,520	66.5	4.4	2.3
Diamond Boulevard – Galaxy Way to Signalized Site Driveway	10,090	62.0	16,530	64.2	2.2	16,790	64.2	2.2	22,910	65.6	3.6	1.4
Diamond Boulevard – Signalized Site Driveway to Willow Way	9,810	61.9	17,190	64.3	2.4	16,550	64.2	2.3	24,570	65.9	4.0	1.7
Diamond Boulevard – Willow Way to Willows Shopping Center	13,950	63.4	21,100	65.2	1.8	20,520	65.1	1.7	28,390	66.5	3.1	1.4
Diamond Boulevard – Willows Shopping Center to Willow Pass Road	17,880	64.5	24,830	65.9	1.4	23,350	65.7	1.2	31,020	66.9	2.4	1.2
Diamond Boulevard – south of Willow Pass Road	6,140	59.9	6,140	59.9	0.0	8,290	61.2	1.3	8,660	61.3	1.4	0.1
Willow Pass Road – west of Diamond Boulevard	42,210	68.2	44,530	68.5	0.3	43,370	68.3	0.1	45,990	68.6	0.4	0.3
Willow Pass Road – Diamond Boulevard to Franquette Avenue	38,520	67.8	40,700	68.1	0.3	40,860	68.1	0.3	43,410	68.3	0.5	0.2
Willow Pass Road – Franquette Avenue to Market Street	39,360	67.9	41,540	68.2	0.3	43,990	68.4	0.5	46,170	68.6	0.7	0.2
Willow Pass Road – Market Street to Gateway Boulevard	26,050	66.1	27,620	66.4	0.3	26,380	66.2	0.1	28,400	66.5	0.4	0.3
Willow Pass Road – Gateway Boulevard to Galindo Street	14,090	63.5	14,680	63.6	0.1	15,870	64.0	0.5	16,420	64.1	0.6	0.1

Roadway Segment	Existing No Project Conditions			Existing Plus Project Conditions			Cumulative (2040) No Project Conditions			Cumulative (2040) Plus Project Conditions		
	ADT	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane	ADT	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane	Increase over Existing No Project Conditions	ADT	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane	Increase over Existing No Project Conditions	ADT	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane	Increase over Existing No Project Conditions	Increase over Cumulative No Project Conditions
Willow Pass Road – Galindo Street to Port Chicago Highway	19,430	64.9	19,810	64.9	0.0	24,450	65.9	1.0	24,860	65.9	1.0	0.0
Clayton Road – Market Street to Pine Street	24,280	65.8	24,450	65.9	0.1	30,700	66.8	1.0	30,870	66.9	1.1	0.1
Clayton Road – Pine Street to Detroit Avenue	26,500	66.2	26,810	66.3	0.1	32,800	67.1	0.9	33,110	67.2	1.0	0.1
Clayton Road – Detroit Avenue to Gateway Boulevard	19,930	65.0	19,930	65.0	0.0	27,070	66.3	1.3	27,070	66.3	1.3	0.0
Clayton Road – Gateway Boulevard to Galindo Street	33,440	67.2	34,460	67.3	0.1	40,280	68.0	0.8	41,240	68.1	0.9	0.1
Concord Avenue – east of SR-242 NB On-Ramp	31,660	67.0	31,950	67.0	0.0	39,880	68.0	1.0	40,170	68.0	1.0	0.0
Concord Avenue – SR-242 NB On-Ramp to SR-242 SB Off-Ramp	41,130	68.1	42,080	68.2	0.1	44,290	68.4	0.3	44,910	68.5	0.4	0.1
Concord Avenue – SR-242 SB Off-Ramp to John Glenn Drive	33,060	67.2	34,780	67.4	0.2	36,640	67.6	0.4	37,660	67.7	0.5	0.1
Concord Avenue – John Glenn Drive to Meridian Park Boulevard	32,230	67.1	33,520	67.2	0.1	34,490	67.3	0.2	35,250	67.4	0.3	0.1
Concord Avenue – west of Meridian Park Boulevard	32,950	67.1	34,240	67.3	0.2	33,200	67.2	0.1	33,860	67.3	0.2	0.1
Contra Costa Boulevard – 2nd Avenue to I-680 SB Ramps	23,860	65.7	24,260	65.8	0.1	24,470	65.9	0.2	24,870	65.9	0.2	0.0
Contra Costa Boulevard – I-680 SB Ramps to Concord Avenue	31,570	67.0	32,810	67.1	0.1	34,680	67.4	0.4	35,950	67.5	0.5	0.1
Contra Costa Boulevard – Concord Avenue to Golf Club Road	23,540	65.7	23,720	65.7	0.0	24,070	65.8	0.1	24,590	65.9	0.2	0.1

Roadway Segment	Existing No Project Conditions			Existing Plus Project Conditions			Cumulative (2040) No Project Conditions			Cumulative (2040) Plus Project Conditions		
	ADT	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane	ADT	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane	Increase over Existing No Project Conditions	ADT	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane	Increase over Existing No Project Conditions	ADT	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane	Increase over Existing No Project Conditions	Increase over Cumulative No Project Conditions
Sunvalley Boulevard – Sunvalley Mall to I-680 SB Off-Ramp	40,190	68.0	41,450	68.1	0.1	43,430	68.3	0.3	44,690	68.5	0.5	0.2
Willow Pass Road – east of I-680 NB Ramps	43,690	68.4	46,290	68.6	0.2	46,880	68.7	0.3	49,480	68.9	0.5	0.2

Notes: ADT = Average Daily Traffic.
Source: LSA, Associates, Inc., March 2016.

Stationary Source Noise Impacts. During the long-term, operational phase of the commercial project, noise would be created by on-site activities. These stationary sources of noise include those associated with truck loading and unloading, truck movements on service driveways, parking lot activities, and other noise-generating activities. These activities are considered isolated peak noises and are not an averaged calculation, such as CNEL measurements. Instead, these types of noise impacts are measured in dBA L_{max}. L_{max} is the highest exponential time averaged sound level that occurs during a stated time period. The operational noise impacts associated with project implementation are described below.

Truck Movements On-Site and Loading/Unloading Operations. Operations on the project site that would generate high noise levels are the truck movements and loading/unloading activities at the loading docks, truck maneuvering on the driveway leading to the loading docks, and door slamming and vehicle movement in the parking areas.

Based on noise readings at other similar major retail commercial centers, truck loading and unloading activities for this project would result in a noise level of approximately 75 dBA L_{max} at 50 feet from this noise source. The closest sensitive receptors to the project site are residential uses on Harvard Drive, located approximately 1,000 feet west of the project site. Attenuation provided by the distance of 1,000 feet from the nearest proposed loading dock on the west side of the project site would be approximately 26 dBA when compared to the noise level measured at 50 feet.[13] In addition, intervening structures between the project site and these residences would provide additional noise shielding. Therefore, the truck noise and loading and unloading generated at the project site would be reduced to approximately 49 dBA L_{max} at the nearest residences 1,000 feet west of the project site. This noise level would be lower than the existing traffic noise levels in the vicinity of the residential units, and below the City's normally acceptable community noise exposure level for residential uses.

Parking Lot Activities. Representative parking activities, such as employees or customers conversing and slamming doors, would generate approximately 60 to 70 dBA L_{max} at 50 feet.[14] The proposed parking areas on the site are approximately 1,000 feet from the nearest single-family residences to the west, which would provide approximately 26 dBA in noise reduction when compared to the noise level measured at 50 feet from the source.[15] The noise attenuation effect of this distance would lead to much lower noise levels than that caused by traffic on the roadways in the project area. Therefore, parking lot noise impacts would be less than significant.

Other Noise-Generating Activities. The proposed project would have rooftop heating, ventilating, and air conditioning (HVAC) mechanical equipment, as well as ground floor garbage compactors. Although no final design is available at this time for the type and location of the rooftop mechanical units, based on noise measurements from similar major retail commercial centers, rooftop HVAC units generate noise levels of approximately 62 dBA at 50 feet. After accounting for the distance to the nearest single-family residences, the resulting noise from this source would be much lower than traffic noise on roadways in the project vicinity and the loading/unloading and truck

[13] Ibid.

[14] Based on LSA's previous experience with similar projects.

[15] Noise attenuation is calculated based on the following formula: Decibels of Change = 20xlog(distance 1/distance2).

movement noise. Therefore, impacts from these other noise generating activities would be less than significant.

(4) Temporary or Periodic Increase in Ambient Noise Levels. The following section addresses potential noise level increases in the project vicinity resulting from implementation of the proposed project. A potential source of increased noise level includes demolition- and construction-related noise.

Demolition and Construction Noise. Implementation of the proposed project could result in a temporary increase in ambient noise levels. According to the City's noise ordinance, noise from construction activities (including demolition) is permitted to exceed the established maximum allowable noise performance standards, provided that the activities occur during the permissible hours for construction (Monday-Friday, 7:30 a.m.-6:00 p.m., excluding holidays) or the applicant obtains approval to work beyond those hours as approved by the City.

The proposed project is located approximately 1,000 feet from the nearest sensitive receptors. Land uses surrounding the project site include commercial and office uses. Project construction would result in short-term noise impacts on these adjacent land uses. Maximum construction noise would be short term, generally intermittent depending on the construction phase, and variable depending on receiver distance from the active construction zone. The duration of noise impacts generally would be from 1 day to several days depending on the phase of construction. The entire construction is expected to occur for approximately 12 to 18 months. After demolition is complete, construction would commence in approximately September 2016 and end in approximately September 2017. The project would be constructed in a single phase. The noise level and types of noise impacts that would occur during demolition and construction are described below.

Construction is performed in multiple stages, 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 each construction site and, therefore, would change the noise levels 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 4.J-10 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.

Table 4.J-10: 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.*

Two types of short-term noise impacts would occur during demolition, site preparation and construction of proposed projects. The first type would result from the increase in traffic flow on

local streets, associated with the transport of workers, equipment, and materials to and from the project site. The transport of workers, construction equipment, and materials to the project site would incrementally increase noise levels on access roads leading to the site. Noise impacts from trucks would occur on the site for the duration of the construction period. Workers and construction equipment would use existing access routes. Noise from passing trucks (87 dBA L_{max} at 50 feet) would be similar to existing truck-generated noise.

The second type of short-term noise would result from equipment use and activities associated with demolition, site preparation, and construction of proposed projects. Construction is performed in discrete steps, each with its own mix of equipment and, consequently, its own noise characteristics. These activities would change the character of the noise generated on project site and, therefore, the noise levels at surrounding sites 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 the type of activity. Demolition activities would primarily require the use of excavators with "claw" attachments to "chew" at the buildings. The maximum noise level generated by excavators is approximately 86 dBA L_{max} at 50 feet. Demolition and site preparation activities, including excavation and grading, would generate the highest noise levels, because they would involve the noisiest construction equipment. Earthmoving equipment includes excavating machinery such as backhoes, bulldozers, draglines, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full-power operation followed by 3 or 4 minutes at lower power settings. Typical maximum noise levels during the site preparation phase of construction can range up to 91 dBA L_{max} at 50 feet from multiple pieces of operating equipment. As discussed more fully above, noise produced from construction equipment would be reduced over a distance at a rate of about 6 dB per doubling of distance, or increased at a rate of 6 per halving of distance. Assuming each piece of construction equipment operates at some distance apart from the other equipment, 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.

Sensitive receptors are located approximately 1,000 feet west of the project site. Based on noise attenuation due to distance, the closest off-site residences may be subject to short-term construction noise reaching 65 dBA L_{max} when construction is occurring at the project site boundary, which would not result in a significant impact. Construction noise is permitted by the Municipal Code when activities occur between the hours of 7:30 a.m. and 6:00 p.m. on weekdays. No construction is permitted on weekends or holidays unless approved as part of a planning permit. The application of accepted best construction management practices, if implemented by the project applicant, would further reduce the construction noise levels.

Construction noise would result in a temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project, but construction noise levels would not exceed any significance threshold.

(5) Aircraft Noise. As noted in the existing conditions discussion above, aircraft noise in the City of Concord is primarily related to aircraft operations at the Buchanan Field Airport, Oakland International Airport, or the San Francisco International Airport. The entire project site is located

within the Airport Influence Area of Buchanan Field Airport, and the western portion of the project site is located within Safety Zone 4. As a result of this proximity to the flight tracks the northwestern corner of the project site is within the 55-60 dBA CNEL noise contours. This noise level is considered normally acceptable for commercial developments. The proposed project would not include residential uses and, therefore, would not result in the exposure of sensitive receptors to excessive noise levels from aircraft noise sources.

Additionally, the Contra Costa County Airport Land Use Commission (ALUC) reviewed the proposed project in 2016. This review confirmed the noise compatibility criteria and determined that the proposed project falls within the Commercial and Industrial: office, retail trade land use category of the Buchanan Field Airport Noise Compatibility Criteria. The review determined that the proposed project would be considered "*clearly acceptable*," where "*the activities associated with the specified land use can be carried out with essentially no interference from the noise exposure*." [16]

Therefore, the proposed project would not result in the exposure of sensitive receptors to the excessive noise levels from aircraft noise sources.

c. Significant Impacts. Implementation of the project would not result in any significant noise impacts.

d. Cumulative Impacts. The proposed project would not create a cumulatively considerable contribution to regional noise conditions. For traffic noise to increase by 3 dBA, traffic volumes would have to double. Implementation of the proposed project would result in a maximum traffic noise level increase of 2.4 dBA under Existing Plus Project conditions and 2.3 dBA under Cumulative Plus Project conditions over the Cumulative No Project traffic noise levels. This maximum increase in noise levels would be directly in front of the project site on Diamond Boulevard. Increases in noise levels farther from the site would be substantially less, as traffic is distributed throughout the roadway network. This increase is below the 3 dBA increase considered to be perceptible by the human ear in an outdoor environment and less than the established significance criteria of a 4 dBA permanent increase in ambient noise levels.

A significant cumulative impact would also occur if implementation of the proposed project would result in any permanent increase of 4 dBA or more in ambient noise levels at the existing sensitive receptors in the project vicinity that are currently exposed to noise levels above the City's normally acceptable threshold for that type of land use. As discussed above, long-term operation of the proposed project would not create a significant increase in stationary source noise, including noise associated with truck loading and unloading, truck movements on service driveways, parking lot activities, or other noise-generating activities, and would result in lower noise levels than that caused by traffic on the roadways in the project area.

Implementation of the proposed project would not result in adverse noise impacts from construction activities. In addition, construction related noise impacts would be temporary and would no longer occur once construction of the project is completed. Therefore, the project's construction activities

[16] Letter from Jamar Stamps, ALUC Staff, Contra Costa County Airport Land Use Commission, to Frank Abejo, City of Concord, re: "CENTERCAL Shopping Center," January 11, 2016.

would not be considered a cumulatively considerable contribution to the total noise environment in the project vicinity and this impact would be less than significant. Therefore, the proposed project's contribution to cumulative noise impacts is not significant or considerable.

K. PUBLIC SERVICES AND UTILITIES

This section assesses the project's potential environmental impacts on public services and utilities as a result of the project including: fire protection, police services, water, wastewater, solid waste, telecommunications, and electricity and natural gas. Information in this section is used to evaluate the potential impacts of the project with respect to the significance criteria set forth in the Impacts and Mitigation Measures section. The related topic of storm water drainage is evaluated in Section 4.H, Hydrology and Water Quality.

1. Setting

This subsection describes current service locations, capacities, and expansion possibilities, as well as laws, codes, and regulations relevant to public services and utilities.

a. Fire Protection. The Contra Costa County Fire Protection District (CCCFPD) provides fire and life safety services for the City of Concord. CCCFPD also maintains mutual-aid agreements with the East Diablo Fire Protection District, East Bay Regional Park District, California Department of Forestry, and private industrial companies located within its jurisdiction.[1] CCCFPD employs approximately 300 firefighters and operates 30 fire stations, of which 24 stations are fully staffed. Five fire stations are currently closed, and one fire station is staffed with paid-on-call reserve firefighters. A minimum of 75 firefighters are on duty at any given time.[2]

CCCFPD headquarters are located in Pleasant Hill. Eight CCCFPD fire stations currently serve the City of Concord. Station 9 is closest to the project site, located approximately 0.8 mile to the northwest at 209 Center Avenue in the unincorporated community of Pacheco, and serves as the primary response station to the project site and vicinity. Station 9 is staffed at all times with one captain, one engineer, and one firefighter. Station 9 has one Type I engine and one Type IIW engine.[3]

The current Insurance Service Office (ISO) rating for the CCCFPD is Class 3 (1 being the highest and 10 being the lowest).[4] This rating considers a community's fire defense capacity versus fire potential, and then uses the score to set property insurance premiums for homeowners and commercial property owners.[5]

CCCFPD's ability to meet its established 5-minute emergency response time goal (pursuant to Contra Costa County General Plan Policy 7-63) is influenced by the number of emergencies within each fire station's district. As the number of calls increase within each district, the potential for two or more emergencies to occur simultaneously increases. The overlap of calls, when they occur, may result in

[1] City of Concord. 2007. *Concord 2030 General Plan.* Website: http://cityofconcord.org/pdf/dept/planning/generalplan/ch7-safety.pdf (last accessed March 8, 2016).

[2] Ted Leach, Fire Inspector, Contra Costa County Fire Protection District, 2016. Written Communication with LSA March 15.

[3] Ted Leach, Fire Inspector, Contra Costa County Fire Protection District, 2016. Written Communication with LSA March 15.

[4] ISO is a private organization that surveys fire departments in cities and towns across the United States.

[5] City of Concord. 2007. *Concord 2030 General Plan.* Website: http://cityofconcord.org/pdf/dept/planning/generalplan/ch7-safety.pdf (last accessed March 8, 2016).

response times greater than the 5-minute goal. Currently, the average response time to the project site from Station 9 is approximately 4.5 minutes.[6]

(1) Concord General Plan Policies Related to Fire Services. Concord General Plan policies related to fire services are listed and discussed in Table 4.I-1 in Section 4.I, Land Use and Planning Policy.

(2) Contra Costa County General Plan Policies Related to Fire Services. The following Contra Costa County General Plan goals and policies related to fire protection are applicable to the project:

- **Goal 7-Y:** To ensure a high standard of fire protection, emergency, and medical response services for all citizens and properties throughout Contra Costa County.
- **Goal 7-AA:** To incorporate requirements for fire-safe construction into the land use planning and approval process.
- **Policy 7-63:** The County shall strive to achieve a total response time (dispatch plus running and set-up time) of 5 minutes in central business district, urban, and suburban areas for 90 percent of all emergency responses.

b. Police Services. Police protection services in Concord are provided by the City of Concord Police Department (CPD). The Police Headquarters building at 1350 Galindo Street is located approximately 1.4 miles east of the project site. In addition to its headquarters, CPD operates three field office locations. The project site is located in the Southern Police District Field Office area.

For the City fiscal years of 2015 and 2016, CPD staffing includes 152 sworn police officers. The City has a ratio of 1.2 sworn police officers per 1,000 residents. This service ratio is less than the nationally accepted ratio of 1.25 officers and the California standard, which ranges from 1.4 to 1.7 officers per 1,000 residents.[7]

Responses by the police to calls are prioritized by urgency. For Priority 1 calls, which include emergency and potentially life threatening calls for service, the CPD's service goal is a response time of 5 to 6 minutes.[8]

(1) Concord General Plan Policies Related to Police Services. Concord General Plan policies related to police services are listed and discussed in Table 4.I-1 in Section 4.I, Land Use and Planning Policy.

c. Water. This subsection describes the City's sources of water, water treatment facilities, and water distribution system.

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[6] Ted Leach, Fire Inspector, Contra Costa County Fire Protection District, 2016. Written Communication with LSA March 15.

[7] City of Concord. 2015. *Adopted Biennial Operating Budget FY 2015-16, FY 2016-17.* Website: http://www.ci.concord.ca.us/pdf/dept/finance/budget/budget2015_2017/FY2015_2017.pdf (accessed March 31, 2016).

[8] City of Concord. 2006. *Draft Environmental Impact Report Concord 2030 Urban Area General Plan.*

(1) Water Sources. The City of Concord is not a water provider. The Contra Costa Water District (CCWD) supplies water to approximately 550,000 residents in nine cities in central and eastern Contra Costa County, including the City of Concord. CCWD's primary source of water is the Sacramento-San Joaquin Delta. CCWD water is drawn from Rock Slough near Oakley, Old River near Discovery Bay, and Mallard Slough in Bay Point. The water is transported in the 52-mile-long Contra Costa Canal, which begins at Rock Slough and then extends west to Clyde, south to Walnut Creek, and north to Martinez. CCWD also stores water in four reservoirs within Contra Costa County, including Mallard Reservoir in Concord, Los Vaqueros Reservoir in Brentwood, Contra Loma Reservoir in Antioch, and Martinez Reservoir in Martinez. The Mallard Reservoir is the closest reservoir to the project site, located approximately 3.3 miles northeast.

Recycled water is provided by the Central Contra Costa Sanitary District (CCCSD) to commercial and institutional sites as well as for dust control and industrial process uses. The project site is connected to the CCCSD recycled water distribution system. Recycled water may be used as a potable water alternative for landscape irrigation, decorative water features, and restroom facilities. According to the CCCSD, there is plenty of recycled water available to continue to provide recycled water to the project site.[9]

(2) Water Treatment and Distribution Facilities. The project site is located in CCWD's Treated Water Service Area. CCWD operates two water treatment plants within its water supply and distribution system: the Bollman Water Treatment Plant and the Randall-Bold Water Treatment Plant. The Bollman Water Treatment Plant (Bollman Plant) is located in North Concord approximately 3 miles northeast of the project site and supplies potable water to the City, including the project site, as well as Pleasant Hill, Walnut Creek, Clayton, and Martinez. The Bollman Plant has a treatment capacity of 75 million gallons per day (mgd) and utilizes coagulation, flocculation, sedimentation, ozonation, and mixed media granular activated carbon (GAC) filtration.[10]

The project site may also be supplied with water from the Randall-Bold Water Treatment Plant (Randall-Bold Plant), located approximately 17.4 miles east of the project site. CCWD co-owns the Randall-Bold Plant with the Diablo Water District, via a multi-purpose pipeline. The Randall-Bold Plant utilizes coagulation, flocculation, sedimentation, mixed media GAC filtration, and intermediate and post-ozonation. The Randall-Bold Plant has a production capacity of 50 mgd and is designed for future expansion for up to 80 mgd.[11]

CCWD operates approximately 870 miles of pipelines and 41 storage reservoirs. Total treated water storage capacity is approximately 75 mgd, and 31 pump stations are used to deliver water and maintain water pressure within the distribution system.[12]

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[9] Russel Leavitt, Engineering Assisstant III, Central Contra Costa Sanitary District, 2016. Personal Communication with LSA March 10.

[10] Contra Costa Water District. 2015. *Ralph D. Bollman Water Treatment Plant.* Website: http://www.ccwater.com/documentcenter/view/993 (last accessed March 8, 2016).

[11] Contra Costa Water District. 2015. *Randall-Bold Water Treatment Plant.* Website: http://www.ccwater.com/documentcenter/view/992 (last accessed March 8, 2016).

[12] Contra Costa Water District. 2016. *District Profile.* Website: http://www.ccwater.com/documentcenter/view/1710 (last accessed March 8, 2016).

In reference to the project site, potable water service is currently provided by CCWD. The existing office buildings are currently served by 1- to 4-inch domestic water lines and 1- to 1 ½-inch service lines along Diamond Boulevard. CCWD currently has no planned water delivery system improvements for the project site and vicinity. The project would connect into the CCWD system at Diamond Boulevard.

(3) Concord General Plan Policies Related to Water. Concord General Plan policies related to water services are listed and discussed in Table 4.I-1 in Section 4.I, Land Use and Planning Policy.

(4) Concord Municipal Code Chapter 18.170, Water Efficient Landscaping. Chapter 18.170, Water Efficient Landscaping, adopts by reference the 2015 Updated State Model Water Efficient Landscaping Ordinance which establishes standards for the design and installation of landscaping for new construction projects with a landscape area of 500 square feet (sf). The 2015 Update lowered the size of landscapes subject to the ordinance from 2,500 sf to 500 sf.

d. Wastewater (Sanitary Sewer) System. The City owns and maintains the wastewater collection system serving both the City and the City of Clayton (maintenance service area). The City has a contract with the Central Contra Costa Sanitary District (CCCSD) to provide wastewater treatment. Wastewater is conveyed to the CCCSD's interceptor system and Wastewater Treatment Plant in unincorporated Martinez. CCCSD treats most of the collected sewage to a secondary level and then discharges it into Suisun Bay. Some of the sewage is treated to a tertiary level through additional filtration and disinfection to produce reclaimed water for landscape irrigation, industrial processes, and plant operations.

(1) Collection System. The City's wastewater collection system consists of approximately 389 miles of pipes, 8,140 manholes, and three siphons that collect and convey wastewater from homes and businesses to the CCCSD conveyance system, and eventually to the CCCSD Wastewater Treatment Plant. All of the wastewater from the maintenance service area flows by gravity to the decommissioned pump station site, located adjacent to Water World. From the decommissioned pump station site, wastewater flows west underneath the Walnut Creek Flood drainage channel, to where it connects to the CCCSD A-Line at the intersection of Galaxy Way and Meridian Park Boulevard, and then eventually flows to the CCCSD Wastewater Treatment Plant in unincorporated Martinez. After the City's pump station was decommissioned, CCCSD installed two gravity-flow connections to connect to the A-Line. One gravity-flow connection is located north of Marsh Drive to service the North Concord area, and the other gravity-flow connection is located south of Concord Avenue to service the triangular area bounded by Concord Avenue, the Walnut Creek Flood Control Channel, and I-680, which includes the project site.[13]

The existing office buildings on the project site are served by an 8-inch sanitary sewer lateral, connecting to a 12-inch sanitary sewer main within Diamond Boulevard. According to the Public Works Department, the sewer main within Diamond Boulevard currently requires frequent maintenance, possibly due to excessive grease from restaurants and other wastewater generated by

[13] City of Concord. 2014. *Sewer System Management Plan.* Website: http://www.cityofconcord.org/pdf/projects/ssi/01.pdf (last accessed March 11, 2016).

uses that tie into the sewer main.[14] An evaluation of the sewer main by City Engineering staff in April 2016 concluded that the sewer line is operating at approximately one-third of maximum capacity. Engineering staff considers 60 percent to be the maximum desired capacity for optimal wastewater flows.[15] Wastewater is transported by gravity from the project site to the CCCSD Wastewater Treatment Plant located approximately 1.7 miles to the northwest of the project site, where it is either discharged into Suisun Bay or is used for non-potable purposes, such as landscape irrigation.

(2) Wastewater Treatment Facilities. CCCSD owns and operates the Wastewater Treatment Plant in unincorporated Martinez. In 2015, the Wastewater Treatment Plant treated an average of approximately 31.8 mgd of wastewater.[16] The plant has a capacity of 54 mgd of dry weather flow and 240 mgd of wet weather flow.[17] The average effluent discharge from the Wastewater Treatment Plant is limited to 53.8 mgd for average dry weather flow by the San Francisco Bay Regional Water Quality Control Board NPDES Permit.[18] Therefore, the Wastewater Treatment Plant has capacity to treat an additional 22 mgd of wastewater.

(3) Regulatory Context. The following describes the wastewater regulatory context in Concord including CCCSD's Source Control Ordinance and local General Plan requirements.

CCCSD Source Control Ordinance. Title 10 of the CCCSD Code provides regulations for contributors to the CCCSD wastewater collection and treatment system. The Source Control Ordinance requires the issuance of permits or permit contracts to certain users and enforces general requirements for other users, authorizes monitoring and enforcement activities, requires user reporting, and provides for the setting of fees for the equitable distribution of costs associated with maintaining a source control program.

Concord General Plan Policies Related to Wastewater. Concord General Plan policies related to wastewater services are listed and discussed in Table 4.I-1 in Section 4.I, Land Use and Planning Policy.

e. Solid Waste Collection and Disposal. The following section describes the City's solid waste disposal services and capacity, as well as the City's solid waste regulatory context, including source reduction and recycling.

(1) Solid Waste. Franchised solid waste collection, disposal, and recycling services in the City of Concord are provided by Concord Disposal Service (CDS). Non-hazardous solid waste is taken to the Recycling Center and Transfer Station in Pittsburg. The Transfer Station has a maximum

[14] Jeff Rogers, Infrastructure Maintenance Manager, City of Concord Public Works, 2016. Personal Communication with LSA March 22 and April 8.

[15] Frank Abejo, Senior Planner, City of Concord Planning Division, 2016. Personal Communication with LSA April 14.

[16] Russel Leavitt, Engineering Assistant III, Central Contra Costa Sanitary District, 2016. Personal Communication with LSA March 10.

[17] Central Contra Costa Sanitary District. 2009. *Treatment Plant.* Website: http://www.centralsan.org/index.cfm?navId=154 (last accessed March 9, 2016).

[18] San Francisco Bay Regional Water Quality Control Board (RWQCB). 2012. C*entral Contra Costa Sanitary District Wastewater Treatment Plan, Order No. R2-2012-0016 (NPDES No. CA0037648).*

allowable capacity of 1,500 tons of waste per day. After undergoing processing, waste from the Transfer Station is delivered to the Keller Canyon Landfill located in unincorporated Contra Costa County near Pittsburg.[19] The landfill handles construction, demolition, and mixed municipal waste. The landfill comprises approximately 1,400 acres, with 244 acres for waste disposal, and has a maximum permitted capacity of approximately 71,500,000 cubic yards. The landfill has a maximum permitted throughput of 3,500 tons per day[20] and as of 2009 had a remaining capacity of approximately 60,000,000 to 64,000,000 cubic yards.[21] It is anticipated that the landfill will be open until 2050. Keller Canyon Landfill Company has applied to amend the landfill's permit application to increase the maximum daily tonnage for disposal from 3,500 to 4,900 tons per day, increase allowable truck traffic, and make other proposed operational changes at the landfill. The County has determined that the proposed operational changes will be the subject of a Subsequent EIR (SEIR). A revised Notice of Preparation (NOP) for the SEIR was advertised on October 14, 2015.[22]

(2) Regulatory Context. The following describes the solid waste regulatory context in the City including Statewide mandates and local General Plan and Municipal Code requirements.

State Mandate AB 939. The California Integrated Waste Management Act of 1989 (AB 939) requires local cities and counties to adopt an Integrated Waste Management Plan (IWMP) to establish objectives, policies, and programs relative to waste disposal, management, source reduction, and recycling. All solid waste management in Contra Costa County is governed by the adopted County-wide IWMP, including the City's *Source Reduction and Recycling Element,* which was approved by the California Integrated Waste Management Board in 1993. As required by AB 939, the City of Concord successfully diverted 50 percent of its solid waste in the year 2000.[23] Diversion rates have continued to increase to over 60 percent in the year 2009 (the last reported year).[24]

State Mandate AB 32. The California Global Warming Solutions Act of 2006 (AB 32) was adopted by the Air Resources Board (ARB) and requires California to reduce its greenhouse gas (GHG) emissions to 1990 levels by 2020. AB 32 includes a Mandatory Commercial Recycling measure that focusses on increased commercial waste diversion as a method to reduce GHG emissions.[25] Commercial businesses that generate 4 cubic yards or more of commercial solid waste per week are required to arrange for recycling services.

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[19] Vincent Colvis, Recycling Coordinator, Mt. Diablo Recycling, Contra Costa Waste Service, 2016. Written Communication with LSA March 22.

[20] Permitted throughput is the maximum permitted amount of waste a landfill can handle and dispose of in one day.

[21] Keller Canyon Landfill. *Solid Waste Facility Permit, Permit No. 07-AA-0032*. Permit issued on December 14, 2009.

[22] Contra Costa County, Conservation and Development Department. 2016. *Keller Canyon Landfill.* Website: http://www.co.contra-costa.ca.us/4984/Keller-Canyon-Landfill (accessed April 1, 2016).

[23] City of Concord, 2007. *Concord 2030 General Plan*. Website: http://www.cityofconcord.org/pdf/dept/planning/generalplan/ch8-publicfac.pdf (last accessed March 9, 2016).

[24] City of Concord, 2007. *Concord 2030 General Plan*. Website: http://www.cityofconcord.org/pdf/dept/planning/generalplan/ch8-publicfac.pdf (last accessed March 9, 2016).

[25] California Department of Resources Recycling and Recovery (CalRecycle). 2015. *Mandatory Commercial Recycling.* Website: http://www.calrecycle.ca.gov/recycle/commercial/ (accessed May 4, 2016).

State Mandate AB 1826. In 2014, the State enacted AB 1826 Chesbro (AB 1826), which requires businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. The law phases in the requirements for businesses and will be fully implemented in 2019. As of April 1, 2016, businesses that generate 8 cubic yards of organic waste per week are required to arrange for organic waste recycling services. As of January 1, 2019, businesses that generate 4 cubic yards of organic waste per week will be required to arrange for organic waste recycling services.[26]

California Solid Waste Reuse and Recycling Access Act of 1991. The California Solid Waste Reuse and Recycling Access Act of 1991 (Chapter 18 of AB 1327) was signed into law in 1991. Chapter 18 of AB 1327 required the California Department of Resources Recycling and Recovery (CalRecycle) to develop a model ordinance for adoption of recyclable materials in development projects by March 1, 1993. Local agencies were required to adopt the model, or an ordinance of their own, governing adequate areas for collection and loading of recyclable materials in development projects by September 1, 1993. The City's Ordinance is found in Municipal Code Chapter 8.20 Solid Waste, which is described below.

Concord Municipal Code Chapter 8.20 Solid Waste. The City's Municipal Code Chapter 8.20, Article II Source Reduce and Recycling, requires all new development exceeding 10,000 sf to implement City-approved source reduction/recycling plans and submit a source reduction/recycling plan addressing white paper, computer paper, glass, cans, cardboard, polystyrene, paper products, and other recoverable materials in accordance with the Guidelines for Source Reduction/Recycling Plans on file with the City Planning Division.

Concord General Plan Policies Related to Solid Waste. Concord General Plan policies related to solid waste services are listed and discussed in Table 4.I-1 in Section 4.I, Land Use and Planning Policy.

f. Telecommunications. A number of telecommunications providers currently service the City. AT&T provides telephone and DSL internet service; Comcast provides cable television services; and Astound Broadband provides telephone, cable television, and cable internet services. All of these service providers are privately owned and operated and recover the costs of operation, maintenance, and capital improvement through connection and user fees, which are collected from all customers. All of these services are currently provided at the project site. In addition, Crown Castle operates an existing wireless telecommunications facility on the roof of an existing office building on-site.

The California Public Utilities Commission, which regulates California's telecommunication industry, requires that local phone service providers anticipate and serve new growth. To meet this requirement, local phone service providers continually upgrade 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.

g. Energy (Electricity and Natural Gas). The Pacific Gas & Electric Company (PG&E) provides electricity and natural gas service to customers in the City. Refer to Table 4.K-1 for the

[26] California Department of Resources Recycling and Recovery (CalRecycle). 2016. *Mandatory Commercial Organics Recycling (MORe).* Website: http://www.calrecycle.ca.gov/recycle/commercial/organics/ (accessed May 4, 2016).

percentages of PG&E's renewable/nonrenewable energy sources. The table includes all PG&E-owned generation plus PG&E's power purchases. 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 provided at the project site.

Table 4.K-1: PG&E's 2015 Electricity Power Mix

Energy Source	Percentage
Renewable*	30
Nuclear*	23
Hydroelectric Operations*	6
Natural Gas	25
Unspecified	17

Source: PG&E. 2016. *Clean Energy Solutions.* Website: http://www.pge.com/en/about/environment/pge/cleanenergy/index.page (accessed April 1, 2016).
Notes:
* These resources are greenhouse gas-free and/or renewable.
Due to rounding, the numbers above total 101 percent.

(1) Regulatory Context. The following describes the local and State regulatory context of energy use and conservation.

CEQA Guidelines Appendix F, Energy Conservation. CEQA requires that EIRs include a discussion of the potential energy impacts of a project to the extent relevant and applicable, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy (refer to PRC 21100[b][3]).

Title 24. 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.

Concord Climate Action Plan. The City's Climate Action Plan (CAP), adopted July 23, 2013, is a Qualified Greenhouse Gas Reduction Strategy and is primarily discussed in Section 4.F, Greenhouse Gas Emissions. The primary goals of the CAP are to reduce the emissions of greenhouse gases and to reduce the City's contribution to global climate change. The CAP includes energy conservation Strategy BE1: Green Building Ordinance, which requires that new commercial buildings 50,000 sf or larger comply with the California Green Building Standards Code, Part 11 (Tier 1), which requires a greater level of energy efficiency than the minimum required by Title 24.

2. Impacts and Mitigation Measures

The following section presents a discussion of the impacts related to public services and utilities that could result from implementation of the project. The section begins with the criteria of significance and establishes the thresholds to determine if an impact is significant. The latter part of this section presents the impacts associated with implementation of the project and the recommended feasible mitigation measures, if required.

a. Criteria of Significance. Pursuant to the CEQA Guidelines Appendix G, Environmental Information Form, and Appendix F, Energy Conservation, the project would have a significant impact on public services, utilities, or energy if it would:

- Result in substantial adverse physical impacts associated with the provision of or need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services: fire protection, police protection, schools, parks, or other public facilities;
- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Have insufficient water supplies available to serve the project from existing entitlements and resources, and therefore require new or expanded entitlements;
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs;
- Not comply with federal, State, and local statutes and regulations related to solid waste;
- Require or result in the construction of new electrical or telecommunications facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; or
- Result in the inefficient, wasteful, or unnecessary consumption of energy.

b. Less-than-Significant Impacts. The following less-than-significant impacts have been identified.

(1) Fire Protection

Construction. Construction activities have the potential to affect fire protection services, such as emergency vehicle response times, by potentially interfering with traffic operations during construction. A majority of the construction activities would take place within the interior of the site; adequate emergency vehicle access routes would be required to be maintained on-site during construction. In addition, temporary lane or road closures may be required to accommodate construction activities. Construction activities requiring lane closures would be temporary and would implement standard City requirements and construction practices to minimize any potential impacts to the street system and emergency vehicle access, such as temporary signage, and obtaining temporary encroachments, if required. Therefore, construction-related impacts to emergency access would be less than significant, and no mitigation is required.

Construction of the project could also increase the potential for accidental on-site fires from such sources as the operation of construction equipment and the use of flammable construction materials.

As required by Occupational Safety and Health Administration (OSHA) and Fire and Building Code requirements, the construction contractor would be required to carefully store flammable materials in appropriate containers and to immediately and completely clean up spills of flammable materials when they occur. As discussed in Section 4.G, Hazards and Hazardous Materials, a Spill Response Plan would be included in the required Stormwater Pollution Prevention Plan (SWPPP). In addition, construction managers and personnel would be trained in emergency response, and fire suppression equipment specific to construction sites would be maintained on-site for the duration of the construction period. Adherence to existing laws would ensure that construction of the project would not have a significant impact related to fire. Therefore, construction-related impacts to fire protection and emergency medical services would be less than significant, and no mitigation is required.

Operation. The project would create a new shopping center intended to draw customers to the site, and could result in an increase in calls for emergency fire and medical services. The project would create the typical range of service calls for retail developments, including emergency medical and rescue service.

The closest fire station to the project site is Station 9. Station 9 would respond in the event of an emergency at the project site. The average response time to the project site from Station 9 is approximately 4.5 minutes, which is consistent with CCCFPD's response time goal of 5 minutes. CCCFPD has reviewed the project and determined that CCCFPD will be able to adequately serve the project;[27] however, implementation of the project would create an increase in demand for fire protection services. The project would be required to comply with all applicable Building Code and California Fire Code requirements requiring fire protection devices such as sprinklers, alarms, adequately spaced fire hydrants, and fire access lanes. Adherence to applicable codes would minimize the demand for fire services and ensure adequate emergency access to the site. Specific requirements pertaining to site design and available resources (i.e., hydrant fire flow) would be required as conditions of approval and would be assessed through the permit review processes. Therefore, because average response time to the project site would be consistent with CCCFPD's goal of 5 minutes, and because the project would be designed to comply with the applicable building code and fire code requirements, operational impacts related to fire protection and emergency services would be less than significant, and no mitigation is required.

(2) Police Services

Construction. Construction activities have the potential to affect police services, such as emergency vehicle response times, by potentially interfering with traffic operations during construction. A majority of the construction activities would take place within the interior of the site; adequate emergency vehicle access routes would be required to be maintained on-site during construction. In addition, temporary lane or road closures may be required to accommodate construction activities. Construction activities requiring lane closures would be temporary and would implement standard City requirements and construction practices to minimize any potential impacts to the street system and emergency vehicle access, such as temporary signage, and obtaining temporary encroachments, if required. Therefore, construction-related impacts to emergency access and police services would be less than significant, and no mitigation is required.

[27] Ted Leach, Fire Inspector, Contra Costa County Fire Protection District, 2016. Written Communication with LSA March 15.

Operation. The project has the potential to increase calls for police services as the project would provide more daily activity, increasing the number of people employed in the area and those patronizing the site, and providing a greater human presence in the area, such that additional police officers may be required to respond to calls for service. Actual crime occurrence cannot be predicted; however, should there be any occurrences, the types of crime committed are likely to consist of vandalism, theft, shoplifting, fraud, car theft, commercial burglary, loitering, and other crimes and/or calls for law enforcement that are typical of commercial uses. The CPD was consulted regarding the project and did not express a concern regarding increased demand for police services. The following security features would be implemented as part of the project to minimize the potential increase in demand for police services:

- Private security staff will monitor and patrol the shopping center 24/7.
- Facilities will be monitored by a security service through a central station that will be able to dispatch additional security personnel or City police to the site as necessary.
- A private on-site security vehicle will patrol the shopping center.
- Security lighting will be provided in parking lots, exterior building areas, and within building interiors.

Although implementation of the project would increase demand for police services, this increase in demand would be reduced with implementation of on-site security features. Therefore, with the implementation of the on-site security features, project impacts related to police services would be less than significant and would not require the need for new or expanded facilities. No mitigation is required.

(3) Water. The project would include the removal of existing water lines and replacement with new water infrastructure that is sized to serve the project and upgraded to reflect current City and other applicable requirements and standards.

Construction. Short-term demand for water may occur during demolition, excavation, grading, and construction activities. Water demand for soil watering (fugitive dust control), cleanup, masonry, painting, and other activities would be temporary and would cease once construction is complete. Overall, demolition and construction activities would require minimal water, would be short-term, and would not result in any adverse impacts on the existing water system or available water supplies. Therefore, short-term demolition and construction activities would result in less-than-significant impacts to water supply, treatment, or distribution, and no mitigation is required.

Operation. Long-term water demand would occur during operation of the project. CCWD applies a water use factor of 2.48 acre-feet per acre per year for the West Concord Mixed Use land use.[28] This water use factor considers land use acreages for different customer types and unit water use estimates for the various customer types.[29] At 30± acres, the projected water demand for the project would be approximately 74 acre-feet per year (0.20 acre-feet per day), or 0.06 mgd. This

[28] Contra Costa Water District. 2015. *Treated Water Master Plan*. Website: http://ccwater.com/DocumentCenter/Home/View/545 (last accessed March 10, 2016).

[29] Contra Costa Water District. 2015. *Treated Water Master Plan*. Website: http://ccwater.com/DocumentCenter/Home/View/545 (last accessed March 10, 2016).

represents less than 1 percent of the CCWD's overall daily treatment capacity and approximately 8 percent of the daily treatment capacity at the Bollman Plant. In addition, as required of all new development in California, the project would comply with California State law regarding water conservation measures, including pertinent provisions of Title 24 of the California Code of Regulations regarding the use of water-efficient appliances, which would reduce the project's long-term demand for water.

Fire flow requirements are based on building types and floor area. Fire flow requirements are not yet available for modeling for the project; however, based on fire flow simulations under varying conditions, it is anticipated that CCWD's treated water distribution system would be able to support the fire flow needs of the project.[30] Adequate fire flow will be ensured through CCWD review of the final building design.

Based on the conceptual plans, CCWD anticipates its treated water distribution system is capable of serving the water needs of the project and that neither expansion of water treatment facilities nor reconstruction of major water lines would be required.[31] A final determination would be confirmed by CCWD during the design phase. In addition, all new water infrastructure required for the project would be constructed on-site and would be sized only to serve the project. As a result, the project would result in less-than-significant impacts on water supply, treatment, and distribution, and no mitigation is required.

(4) Wastewater. Wastewater (sewer) collection for the project site would continue to be provided by the City. CCCSD would provide treatment of wastewater generated by the project at the Wastewater Treatment Plant. The project site has an existing 8-inch sanitary sewer lateral which connects to a 12-inch sanitary sewer main in Diamond Boulevard. The on-site sanitary sewer lines and other wastewater improvements would be removed and replaced with new sanitary sewer infrastructure that is sized to serve the project and upgraded to reflect current City and other applicable requirements and standards.

Construction. No significant increase in wastewater flows is anticipated as a result of construction activities on the project site. Sanitary services during construction would likely be provided by portable toilet facilities, with waste transported off-site for treatment and disposal. Therefore, during construction, potential impacts to wastewater treatment and wastewater conveyance infrastructure would be less than significant, and no mitigation is required.

Operation. The project's wastewater generation was estimated using generation rates provided by CCCSD as shown in Table 4.K-2. The project is anticipated to generate a total estimated wastewater flow of approximately 66,807 gpd, resulting in a net increase of 60,407 gpd over current conditions with the partially occupied office buildings. This is the baseline condition for the purposes of the CEQA environmental analysis.

[30] Russel Leavitt, Engineering Assistant III, Central Contra Costa Sanitary District, 2016. Personal Communication with LSA March 10.

[31] Russel Leavitt, Engineering Assistant III, Central Contra Costa Sanitary District, 2016. Personal Communication with LSA March 10.

Table 4.K-2: Wastewater Generation

Use	Area (sf)	Residential Units per Land Use (RU)	Residential Unit Equivalents (RUE)	Flow Coefficient (gpd/1 RUE)	Projected Daily Wastewater Generation (gpd)
Daily Wastewater Generation At Full Occupancy[1]	619,000	0.319 RU/1,000 sf (office building)	197	200	39,500
Existing Total Daily Wastewater Generation[2]	**99,000**	**0.319 RU/1,000 sf (office building)**	**32**	200	**6,400**
Proposed Project Daily Wastewater Generation					
Use					
Restaurant	85,000	2.738 RU/1,000 sf	233		46,600
Supermarket	35,000	0.601 RU/1,000 sf	21		4,207
Retail/Theater/Office	255,000	0.319 RU/1,000 sf	80		16,000
TOTAL	**375,000**		**334**	200	**66,807**
Net Increase			334		66,807
Proposed – Existing[2]			-32		-6,400
			+302		**+60,407**
Proposed – Full Occupancy[1]			334		66,807
			-197		-39,500
			+137		+27,307

Source: Russel Leavitt, Engineering Assistant III, Central Contra Costa Sanitary District, 2016. Personal Communication with LSA March 10.
gpd = gallons per day
sf = square feet
[1]Projected Total Daily Wastewater Generation of the existing office buildings at full occupancy, with approximately 2,500 employees. This is not considered the CEQA baseline. Provided for informational purposes only.
[2] Total office building floor area at the site is 619,000 sf, but current occupancy is approximately 400 employees (16 percent of total employees at full occupancy) according to information provided to Applicant by Chevron. 16 percent of total floor area is 99,000 sf. This is the baseline for the purpose of this CEQA analysis.

According to CCCSD, the District's Wastewater Treatment Plant has adequate capacity to treat the wastewater from the project site.[32] The Wastewater Treatment Plant has additional permitted capacity for approximately 22 mgd of wastewater, and the project would represent less than 1 percent of the anticipated daily capacity of the Wastewater Treatment Plant. The Wastewater Treatment Plant is currently operating at approximately 60 percent capacity. Therefore, the estimated wastewater flow from the project would be accommodated within the existing design capacity of the Wastewater Treatment Plant.

New sanitary sewer lines installed on-site would connect to the existing 12-inch sanitary sewer main within Diamond Boulevard. The sewer main within Diamond Boulevard currently requires frequent maintenance from existing users in the area, including restaurants that contribute grease to the system. An evaluation of the sewer main by City Engineering staff in April 2016 concluded that the sewer

[32] Russel Leavitt, Engineering Assistant III, Central Contra Costa Sanitary District, 2016. Personal Communication with LSA March 10.

line is operating at approximately one-third of maximum capacity. The project would substantially increase the amount of daily wastewater generation originating from the site compared to the existing partially occupied condition, or even compared to the prior use of the site with full occupancy of the office buildings. At the request of the City's Engineering Division, the Applicant's civil engineer prepared a sewer flow analysis of the 12-inch sewer line within Diamond Boulevard to determine if it had sufficient capacity to accommodate the increase in wastewater generated by the project. For the purposes of a conservative study, the sewer flow analysis applied a general Shopping Center generation rate of 1.142 RU/1,000 sf, resulting in an estimated daily project generation rate of 85,650 gpd, with a net increase of 79,250 gpd. The analysis, which was reviewed and approved by the City's Engineering Division, concluded that the Diamond Boulevard sewer line currently has an available capacity of 344,807 gpd (at the City's preferred 60 percent design capacity) and therefore has sufficient capacity to accommodate the maximum projected 79,250 gpd net increase in wastewater from the proposed project.[33] Therefore, the project would not result in a significant impact to wastewater facilities.

(5) Solid Waste. The project would be served by landfills with the capacity to handle solid wastes generated by the demolition and construction and operational phases of the project.

Construction. Demolition wastes from existing structures, paved asphalt areas, and utilities would be collected and hauled to the Pittsburg Transfer Station and Recycling Center. The project would be subject to the City Construction and Demolition Recycling Ordinance, which regulates the recycling of demolition waste on the site. The ordinance requires that a minimum 50 percent of all waste from construction and demolition (C&D) debris and 75 percent of all concrete, soil, asphalt, and masonry products (inert debris) be recycled or reused. In order to comply with the ordinance, the project applicant must pay the C&D Program fee, (0.3 percent of project valuation), submit a performance security fee, sign a performance agreement, and then submit a final report to the waste management compliance official within 30 days of project completion.[34] The C&D and inert debris can be recycled on-site or can be taken to specific recycling facilities. Since the project would be required by ordinance to recycle 50 percent of C&D debris and 75 percent of inert debris, it can be assumed that the project would not generate a substantial amount of solid waste from C&D activities requiring disposal at the Keller Canyon Landfill. C&D waste that cannot be recycled or reused could be accommodated at the Keller Canyon Landfill. As of 2009 (the most current available data), the Keller Canyon Landfill has only reached 10 to 16 percent of its total maximum capacity, and thus could readily accommodate the project's solid waste needs. Therefore, impacts related to solid waste during construction would be less than significant, and no mitigation is required.

Operation. In terms of the waste generated during the operation phase of the project, CalRecycle estimates waste generation of 2.5 pounds per 100 sf per day for shopping centers.[35] When operational, the project could generate a maximum of 9,375 pounds (approximately 4.7 tons) of waste

[33] Kevin Marstall, P.E., Senior Civil Engineer, City of Concord, 2016. E-mail Communication. *Re: The Veranda Retail Center Sewer Flow Analysis*. May 3.

[34] City of Concord 2008. *Construction and Demolition Materials Recycling Program*. Website: http://www.cityofconcord.org/pdf/living/recycle/CD_Application_Forms.pdf (last accessed March 22, 2016).

[35] California Department of Resources Recovery and Reuse (CalRecycle). 2013. *Waste Characterization Commercial Sector: Estimated Solid Waste Generation and Disposal Rates*. Website: http://www.calrecycle.ca.gov/wastechar/wastegenrates/Commercial.htm (last accessed March 22, 2016).

per day. The maximum projected operational waste generated by the project would be less than 1 percent of the daily permitted throughput for both the Pittsburg Transfer Station and Recycling Center (approximately 1,500 tons of waste per day) and the Keller Canyon Landfill (approximately 3,500 tons of waste per day). In addition, CDS would provide commercial recycling services to the project site, thereby reducing the solid waste generated by the project. The design and location of on-site recycling bins would be subject to approval by the City prior to construction. In summary, the amount of operational solid waste generated by the project would not exceed the capacity of or have a significant impact on the Keller Canyon Landfill. Therefore, impacts related to solid waste during operation would be less than significant, and no mitigation is required.

(6) Telecommunications. Development of the project would occur in a location that currently has telephone, cable, and internet services. Existing services would be removed and replaced with new infrastructure that is sized to serve the project and upgraded to reflect applicable requirements and standards. The wireless telecommunication facility currently located on the roof of one of the existing office buildings would either be relocated to another permanent location, such as the rooftop of another building in the project vicinity, or would be integrated into the design of the new shopping center in accordance with applicable requirements and standards. If a permanent site for the facility has not been secured prior to demolition of the existing office buildings, it is anticipated that a temporary wireless facility would operate at the project site under a temporary permit from the City. Because these services are currently provided at the project site and therefore no new or expanded facilities would need to be constructed to serve the project, impacts to telecommunication facilities would be less than significant, and no mitigation is required.

(7) Energy (Electricity and Natural Gas). Development of the project would occur in a location that currently has electricity and natural gas services provided by PG&E. Implementation of the project would result in a long-term demand for electricity and natural gas. The project would connect to the existing service connections. Connections to electricity and natural gas would be made by PG&E. No new off-site service lines or substations would be required to serve the project.

Table 4.K-3 summarizes the existing electricity and natural gas demand under the current occupancy of the office buildings and the anticipated electricity and natural gas demand for the project. As shown in the table, the project would generate an annual electricity demand of 7,359,524 kilowatt-hours per year (kWh/yr), which is an increase of 5,408,234 kWh/yr from the existing condition.

Table 4.K-3: Projected Electric and Natural Gas Demand

	Electricity (kWh/yr)	Natural Gas (therms/yr)
Existing Energy Demand[1]	1,951,290	17,048
Projected Energy Demand[2]	7,359,524	155,214
Net Energy Demand[2]	5,408,234	138,166

Source: LSA Associates, 2016; E Source Companies, LLC, 2016. *E Source Business Energy Advisor.* Website: https://www.esource.com/BusinessEnergyAdvisor (accessed April 1, 2016).

[1] Total office building floor area at the site is 619,000 sf, but current occupancy is approximately 400 employees who utilize approximately 99,000 sf of floor area.

[2] Projected energy usage includes restaurant, retail, and grocery land uses.

Notes:

The existing energy demand is based on the land use designations in CalEEMod. The existing office buildings were evaluated with 2005 Energy Efficiency Standards.

The projected energy demand for the project is based on the most recent design square footage for the complex and the E Source Business Energy Advisor.

As shown in Table 4.K-3 for natural gas demand, the project would generate an annual natural gas demand of 155,214 therms per year (therms/yr), which is an increase of 138,166 therms/yr from the existing condition.

All new development is required to comply with State law regarding energy conservation measures, including pertinent provisions of Title 24 of the California Code of Regulations. Title 24 covers the use of energy-efficient building standards, including ventilation, insulation, construction, and the use of energy-saving appliances, conditioning systems, water heating, and lighting. In addition, the City's CAP requires that new commercial buildings comply with the California Green Building Standards Code, Part 11 (Tier 1), which requires a greater level of energy efficiency than the minimum required by Title 24. The project is anticipated to incorporate energy conservation features that reflect the upgraded Title 24 standards, which may include, for example:

- Cool roof;
- High efficiency windows;
- High efficiency domestic hot water heaters;
- LED lights;
- Day light sensors that dim when natural light is available;
- Sky lights;
- Exterior and interior lights that shut off after hours;
- Occupancy sensors in offices, storage rooms, and bathrooms;
- HVAC systems with alarms that notify operations staff if economizer is faulty; and
- Locked and programmed thermostats that shut off conditioned air after hours.

PG&E currently supplies electricity and natural gas services to the project site and will continue to supply electricity and natural gas services to the project site as energy demands are within the capabilities and projected loads for PG&E. Connections to the existing electricity and natural gas service systems would be made by PG&E. In addition, through compliance with Title 24 Part 11 (Tier 1) and implementation of energy conservation measures mentioned above, implementation of the project is not anticipated to trigger the need for new or expanded facilities to serve the project and therefore would not result in a significant impact to the supply and distribution of electricity and natural gas. Therefore, no mitigation is required.

Title 24 is designed to provide certainty and uniformity throughout the State, while at the same time ensuring that the efficient and non-wasteful consumption of energy is ensured through design features. Based on the analysis above, the project would not result in the wasteful, inefficient, and unnecessary consumption of energy; would not cause the need for additional electrical energy or natural gas production facilities; and, therefore, would not create a significant impact on energy resources, and no mitigation is required.

c. Significant Impacts. The project would not result in any significant environmental impacts related to public services and utilities.

d. Cumulative Impacts. The project would increase demand for public services and utilities, including police, fire, emergency services, water, sanitary sewer, solid waste, telecommunications services, and energy (e.g., electricity and gas). As discussed above, existing public services and utilities would be able to adequately serve the increased demand created by the project. The Concord General Plan requires public services and utilities to be maintained at adequate service ratios and service levels through compliance with applicable General Plan policies and applicable State and local regulations, and fair-share contributions by new developments. Therefore, adherence to these policies and regulations would ensure that the project and other cumulative development projects included in Table 6.E-1 would not result in significant impacts to public services and utilities. As a result, the project would not result in a considerable contribution to cumulative impacts to public services or utilities. This finding is consistent with the Concord General Plan EIR, which did not identify any public services or utilities impacts that could not be mitigated, or any cumulative public services or utilities impacts.

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L. TRANSPORTATION AND CIRCULATION

This section assesses the project's potential environmental impacts on transportation and circulation and is primarily drawn from the Traffic Impact Study (TIS) prepared for the project, included in Appendix I of this EIR.[1] Information in this section is used to evaluate the potential impacts of the project with respect to the significance criteria set forth in the Impacts and Mitigation Measures section.

1. Setting

The setting for the transportation and circulation analysis is described below. The remainder of the section presents the analysis methodologies and a discussion of the existing setting and future background conditions.

a. Scope of Study. Figure 4.L-1 shows the location of the proposed project and the adjacent street network. The proposed project would generate vehicular trips that would contribute traffic to the nearby street network. The potential traffic impacts of the proposed project were evaluated following the standards and methodologies set forth by the City and in accordance with CEQA. The project's traffic impacts were evaluated based on weekday AM, weekday PM, and Saturday PM peak hour levels of service at 36 intersections, 8 freeway mainline segments, and 9 freeway ramps, as shown below. The study area intersections and freeway mainline segments were selected for analysis based upon the anticipated volumes and distribution patterns of the project traffic in consultation with the City of Concord, the City of Pleasant Hill, and Contra Costa County.

Intersections

1) Diamond Boulevard and Concord Avenue
2) Diamond Boulevard and Burnett Avenue
3) Diamond Boulevard and Galaxy Way
4) Diamond Boulevard and Signalized Driveway Entrance
5) Diamond Boulevard and Willow Way
6) Diamond Boulevard and Willows Shopping Center
7) Diamond Boulevard and Willow Pass Road
8) Willow Pass Road and Franquette Avenue
9) Market Street and Willow Pass Road
10) Gateway Boulevard and Willow Pass Road
11) Galindo Street and Willow Pass Road
12) Port Chicago Highway and Willow Pass Road
13) Port Chicago Highway and Concord Boulevard
14) Galindo Street and Concord Boulevard
15) Galindo Street and Clayton Road
16) Gateway Boulevard and Clayton Road
17) Detroit Avenue and Clayton Road
18) Pine Street and Clayton Road
19) Market Street and Clayton Road
20) Galindo Street and Cowell Road
21) SR-242 NB On-Ramp and Concord Avenue
22) SR-242 SB Off-Ramp and Concord Avenue
23) John Glenn Drive and Concord Avenue
24) Meridian Park Boulevard and Concord Avenue
25) Pacheco Boulevard and Muir Road
26) Pacheco Boulevard and North Buchanan Circle
27) Pacheco Boulevard and Center Avenue
28) Contra Costa Boulevard and 2nd Avenue
29) Contra Costa Boulevard and I-680 SB Ramps/Target
30) Contra Costa Boulevard and Concord Avenue
31) Contra Costa Boulevard and Golf Club Road
32) Contra Costa Boulevard and Viking Drive
33) Contra Costa Boulevard and Taylor Boulevard
34) Sunvalley Mall and Sunvalley Boulevard
35) I-680 SB Off-Ramp and Sunvalley Boulevard
36) I-680 SB Ramps and Willow Pass Road

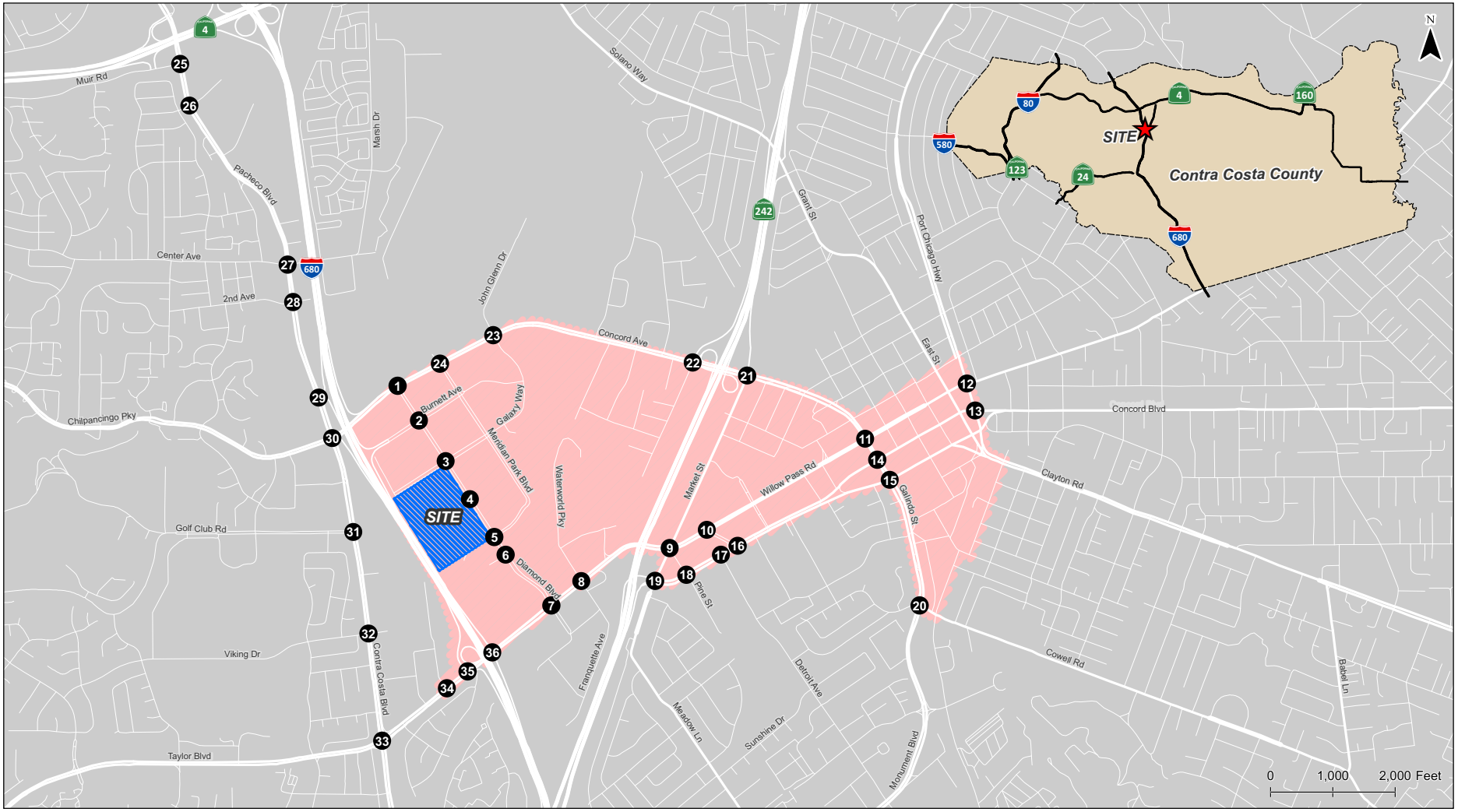
[1] Kittelson & Associates, Inc., 2016. *The Veranda Shopping Center TIS*. April.

Freeway Mainline Segments

1) I-680 south of SR-242
2) I-680 north of SR-4
3) SR-4 west of I-680
4) SR-4 east of SR-242
5) I-680 north of Concord Avenue
6) SR-242 north of Concord Avenue
7) I-680 north of SR-24
8) SR-4 between I-680 and SR-242

Freeway Ramps

1) Concord Avenue to SR-242 northbound (merge)
2) Concord Avenue from SR-242 southbound (weaving segment)
3) Burnett Avenue to I-680 northbound (merge)
4) Burnett Avenue from I-680 northbound (diverge)
5) Willow Pass Road to I-680 southbound (merge)
6) Willow Pass Road from I-680 northbound (diverge)
7) Contra Costa Boulevard from I-680 southbound (diverge)
8) Clayton Road to SR-242 southbound (merge)
9) Clayton Road from SR-242 northbound (diverge)



LSA

Study Intersections
Central Business District

FIGURE 4.L-1

The Veranda Shopping Center

Study Area Intersections

SOURCE: Kittelson Associates, Inc. (April 2016)

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Traffic conditions at the study intersections and street segments were analyzed for the AM and PM peak hours and for the Saturday peak hour. The weekday AM peak hour is the highest vehicle volume hour between 7:00 a.m. and 9:00 a.m., and the weekday PM peak hour is the highest vehicle volume hour between 4:00 p.m. and 6:00 p.m. The Saturday PM peak hour is the highest vehicle volume hour between 2:00 p.m. and 4:00 p.m. The AM and PM peak hours represent the peak period of adjacent street traffic, and the Saturday PM peak hour represents the peak one hour period of trip generation for the project. It is during these periods that the existing street traffic volumes are highest. The TIS evaluated traffic conditions for the following scenarios:

- **Existing Conditions.** Traffic counts were collected in January and February 2016 for each of the study area intersections to document existing conditions. At that time, schools were in session and traffic conditions were representative of those that typically occur on weekdays and weekends.
- **Existing Plus Project Conditions.** The Existing Plus Project Conditions traffic volumes were developed by adding project-related traffic to the Existing Conditions volumes.
- **Near-Term Conditions.** Near-Term Conditions traffic forecasts include existing volumes and nearby developments that have been approved. Approved projects as of the commencement of the environmental analysis were identified based on information provided by the City of Concord, City of Pleasant Hill, and Contra Costa County, and are listed in Table 6.E-1.
- **Near-Term Plus Project Conditions.** The Near-Term Plus Project Conditions traffic forecasts were developed by adding project-related traffic to the Near-Term Conditions volumes.
- **Cumulative Conditions.** The Cumulative Conditions traffic forecasts for year 2040 were developed based on the Contra Costa Transportation Authority (CCTA) countywide travel demand model that incorporates build-out land use assumptions from the General Plans of all jurisdictions in the county, including the City of Concord.
- **Cumulative (Year 2040) Plus Project Conditions.** The Cumulative Plus Proposed Project Conditions traffic forecasts for year 2040 were developed by adding project-related traffic volumes to the Cumulative Conditions volumes.

b. Analysis Methodologies and Level of Service Standards. This subsection presents the methods used to evaluate the traffic conditions for each scenario described above. It includes descriptions of the data requirements, analysis methodologies, and applicable level of service standards.

(1) Intersection Level of Service. “Levels of service” describes the operating conditions experienced by users of a facility. Level of service is a qualitative measure of the effect of a number of factors, including speed and travel time, traffic interruptions, freedom to maneuver, driving comfort and convenience. Levels of service are designated A through F from best to worst, which cover the entire range of traffic operations that might occur. Level of Service (LOS) A through E generally represents traffic volumes at less than roadway capacity, while LOS F represents over capacity and/or forced flow conditions. In general, LOS D or better is considered acceptable while LOS E or LOS F is not.

Intersection analyses were conducted using the operational methodology outlined in the 2010 Highway Capacity Manual (HCM)[2] as implemented by the Vistro software analysis tool. The following are the HCM methodologies for signalized and unsignalized intersections, respectively.

Signalized Intersection. The HCM procedure calculates a weighted average control delay in seconds per vehicle at a signalized intersection, and assigns a level of service designation based upon the delay.

Unsignalized Intersection. The HCM methodology calculates a weighted average control delay in seconds per vehicle for each controlled intersection leg and for the intersection as a whole. A level of service designation for all-way stop-controlled intersections is based upon the weighted average control delay for all intersection legs, similar to the level of service designation for signalized intersections. For two-way stop-controlled intersections, the LOS for the worst approach is used as the LOS performance measure.

Table 4.L-1 presents the relationship of average delay to level of service for both signalized and unsignalized intersections.

Table 4.L-1: Level of Service Definitions for Intersections

Level of Service (LOS)	Description of Traffic Conditions	Signalized Intersection Average Delay Per Vehicle (Seconds)	Unsignalized Intersection Average Delay Per Vehicle (Seconds)
A	Free flowing. Most vehicles do not have to stop.	≤10	≤10
B	Minimal delays. Some vehicles have to stop, although waits are not bothersome.	>10 and ≤20	>10 and ≤15
C	Acceptable delays. Significant numbers of vehicles have to stop because of steady, high traffic volumes. Still, many pass without stopping.	>20 and ≤35	>15 and ≤25
D	Tolerable delays. Many vehicles have to stop. Drivers are aware of heavier traffic. Cars may have to wait through more than one red light. Queues begin to form, often on more than one approach.	>35 and ≤55	>25 and ≤35
E	Significant delays. Cars may have to wait through more than one red light. Long queues form, sometimes on several approaches.	>55 and ≤80	>35 and ≤50
F	Excessive delays. Intersection is jammed. Many cars have to wait through more than one red light, or more than 60 seconds. Traffic may back up into "up-stream" intersections.	≥80	>50

Source: Kittelson & Associates, Inc., April 2016.

(2) Freeway Mainline Segments. LOS for freeway segments is a qualitative assessment of freeway mainline operations based on the freeway's density. In order to calculate density of the mainline, the California Department of Transportation's (Caltrans) Performance Measurement System (PeMS) volume and speed data were used to directly calculate density of traffic in terms of passenger cars per mile per lane for the study freeway segments and to determine the LOS threshold from A to F. Table 4.L-2 shows the relationship of freeway density to level of service as stipulated in the 2010 HCM.

[2] Transportation Research Board, 2010. *Highway Capacity Manual*.

Table 4.L-2: Level of Service Definition for Freeway Mainline Segment

Level of Service (LOS)	Density (passenger vehicles per mile per lane)
A	≤11
B	>11-18
C	>18-26
D	>26-35
E	>35-45
F	>45 Demand exceeds capacity

Source: Kittelson & Associates, Inc., April 2016.

(3) Freeway Ramp Analysis. While Caltrans' PeMS system allows for a direct measurement of density for freeway mainline segments, the PeMS system does not cover freeway ramp influence areas (portion of freeway mainline within 1,500 feet of an on- or off-ramp). In order to assess the LOS for these sections, the methodology outlined in the HCM for merge, diverge, and weaving segments as implemented by the Highway Capacity Software (HCS) tool was used to calculate the density of traffic in terms of passenger cars per mile per lane. Similar to the mainline segments, LOS is assigned a letter grade from A to F based on the density values shown in Table 4.L-2.

c. Existing Transportation Conditions. The following section generally describes the transportation system in the project study area, including key facilities of the roadway, transit, pedestrian, and bicycle network. Existing lane geometry, peak hour volumes, and level of service conditions for each of the study intersections and roadway segments are also described.

(1) Existing Street Network. Regional and local site access routes and traffic volumes are described below. Regional access in the vicinity of the project site is provided via the following routes:

- ***Interstate 680.*** Interstate 680 (I-680) is an eight- to twelve-lane freeway with a posted speed limit of 65 miles per hour. The north-south freeway connects Concord with nearby cities, such as Walnut Creek and Martinez, and regional destinations, such as San Jose and Sacramento. It also provides access to the greater freeway network with direct connections to Interstate 80, Interstate 780, State Route 4, State Route 24, and State Route 242.

  The project site is served by I-680 interchanges at Burnett Avenue, Contra Costa Boulevard, and Chilpancingo Parkway/Concord Avenue to the north and at Sunvalley Boulevard/Willow Pass Road to the south. The average daily traffic on I-680 near the project site ranges between 135,000 and 137,000 vehicles per day (vpd). Bicyclists and pedestrians are not allowed on this facility.
- ***State Route 4.*** State Route 4 (SR-4) is a four- to six-lane freeway north of the project site with a posted speed limit of 65 miles per hour. The east-west freeway connects Concord with nearby cities, such as Hercules and Pittsburg, and regional inland destinations such as Stockton. The project site is served by interchanges at I-680, State Route 242, Pacheco Boulevard and Solano Way. The average daily traffic on SR-4 near I-680 is between 82,000 and 88,000 vehicles per day (vpd). Bicyclists and pedestrians are not allowed on this facility.
- ***State Route 242.*** State Route 242 (SR-242) is a six- to eight-lane freeway near the project site with a posted speed limit of 65 miles per hour. The north-south freeway exists primarily within the city limits of Concord and connects SR-4 to the north and I-680 to the south. The project site

is served by interchanges at Concord Avenue and Clayton Road. The average daily traffic on SR-242 near Concord Avenue is between 86,000 and 122,000 vehicles per day (vpd). Bicyclists and pedestrians are not allowed on this facility.

Local roadway access in the vicinity of the project site is provided by the following roadways.

- ***Concord Avenue.*** Concord Avenue is a six-lane, east-west roadway with a posted speed limit of 40 miles per hour near the project site. The facility extends from Pleasant Hill on the west side of I-680, where it is named Chilpancingo Parkway, into Downtown Concord, where it turns south and becomes Galindo Street/Monument Boulevard. On-street parking is prohibited. A sidewalk is present along the south side of the street near the project site. It is not a designated bikeway.
- ***Willow Pass Road.*** Willow Pass Road is a six-lane, east-west roadway with a posted speed limit of 35 miles per hour near the project site. The facility extends from Pleasant Hill on the west side of I-680, where it is named Taylor Boulevard, through Downtown Concord and eventually turns north and connects to SR-4. The Concord 2030 General Plan Figure 5-1, Street Types, classifies Willow Pass Road as a Regional Street. On-street parking is prohibited. Sidewalks are present on both sides of the roadway near the project site. It is not a designated bikeway.
- ***Pacheco Boulevard/Contra Costa Boulevard.*** Pacheco Boulevard/Contra Costa Boulevard is a four-lane, north-south roadway with a posted speed limit of 35 miles per hour near the project site. The facility is located on the west side of I-680 and extends from Pacheco, where it is named Pacheco Boulevard, into Pleasant Hill, where it is named Contra Costa Boulevard. In Pleasant Hill, near the project site, it is classified as an arterial. On-street parking is permitted along some sections of the roadway in Pleasant Hill, and sidewalks are present along both sides of the street. Contra Costa Boulevard has Class II bike lanes along certain sections near the project site.
- ***Clayton Road.*** Clayton Road is a six-lane, east-west roadway that extends from I-680 eastward to Downtown Concord and beyond. It is classified as a Community Street in the General Plan and has a posted speed limit of 35 miles per hour near the project site. On-street parking is prohibited. Sidewalks are present on both sides of the roadway near the project site. It is not a designated bikeway.
- ***Diamond Boulevard.*** Diamond Boulevard is a six-lane, north-south roadway that extends between Concord Avenue and Willow Pass Road. It is classified as a Community Street in the General Plan and has a posted speed limit of 35 miles per hour. On-street parking is prohibited. Sidewalks are present on both sides of the roadway. It is not a designated bikeway.
- ***Burnett Avenue.*** Burnett Avenue is a four-lane, east-west roadway that extends three blocks between I-680 and John Glenn Drive. It is classified as a Service Street in the General Plan and has a posted speed limit of 35 miles per hour. This street connects the northbound I-680 on and off ramps to the project site. On-street parking is restricted to two hours between 7:00 AM and 6:00 PM. Sidewalks are present on both sides of the roadway. It is not a designated bikeway.
- ***Galaxy Way.*** Galaxy Way is a four-lane, east-west roadway that extends three blocks between I-680 and John Glenn Drive. It is classified as a Service Street in the General Plan and has a posted speed limit of 30 miles per hour. On-street parking is permitted east of Diamond Boulevard between 6:00 PM and 6:00 AM. Sidewalks are present on both sides of the roadway. It is a proposed Class II bike route.
- ***Willow Way.*** Willow Way is a four-lane, east-west roadway that extends one block between Diamond Boulevard and Meridian Park Boulevard. West of Diamond Boulevard, Willow Way is

a private road accessing the Willows Shopping Center. It is classified as a Service Street in the General Plan and has a posted speed limit of 30 miles per hour. On-street parking is restricted. Sidewalks are present on both sides of the roadway near the project site. It is a proposed Class II bike route.

(2) Existing Transit Facilities. Concord is served by a transit system that includes bus and rail services provided by Contra Costa County Transit District (County Connection) and the Bay Area Rapid Transit system (BART). Transit services are described below and exhibited in Figure 4.L-2.

County Connection. County Connection provides the principal bus service in central Contra Costa County. It operates local and school buses, and it is a paratransit service provider. Buses are generally equipped with front-loading racks that can hold up to two bicycles.

County Connection operates three routes that directly serve the project site through nearby street-side bus stops. Route 91X provides local commuter service to the Concord BART Station. Route 19 provides regional commuter service between Diablo Valley College in Pleasant Hill and the Walnut Creek BART Station. Route 320 provides weekend service between Diablo Valley College and the Concord BART Station. Bus service on these routes is detailed in Table 4.L-3.

Table 4.L-3: Bus Routes Serving the Project Site

Route	Serving	Day	Times		Frequency
19	Martinez Amtrak to Concord BART Station	Weekday	6:00 AM	8:00 PM	0.5/hour
91X	Concord Commuter Express (Commuter Loop from Concord BART)	Weekday	6:15 AM 3:15 PM	8:45 AM 6:15 PM	2/hour 1.5/hour
320	Diablo Valley College and Concord BART Station	Weekday	9:45 AM	7:00 PM	1.5/hour

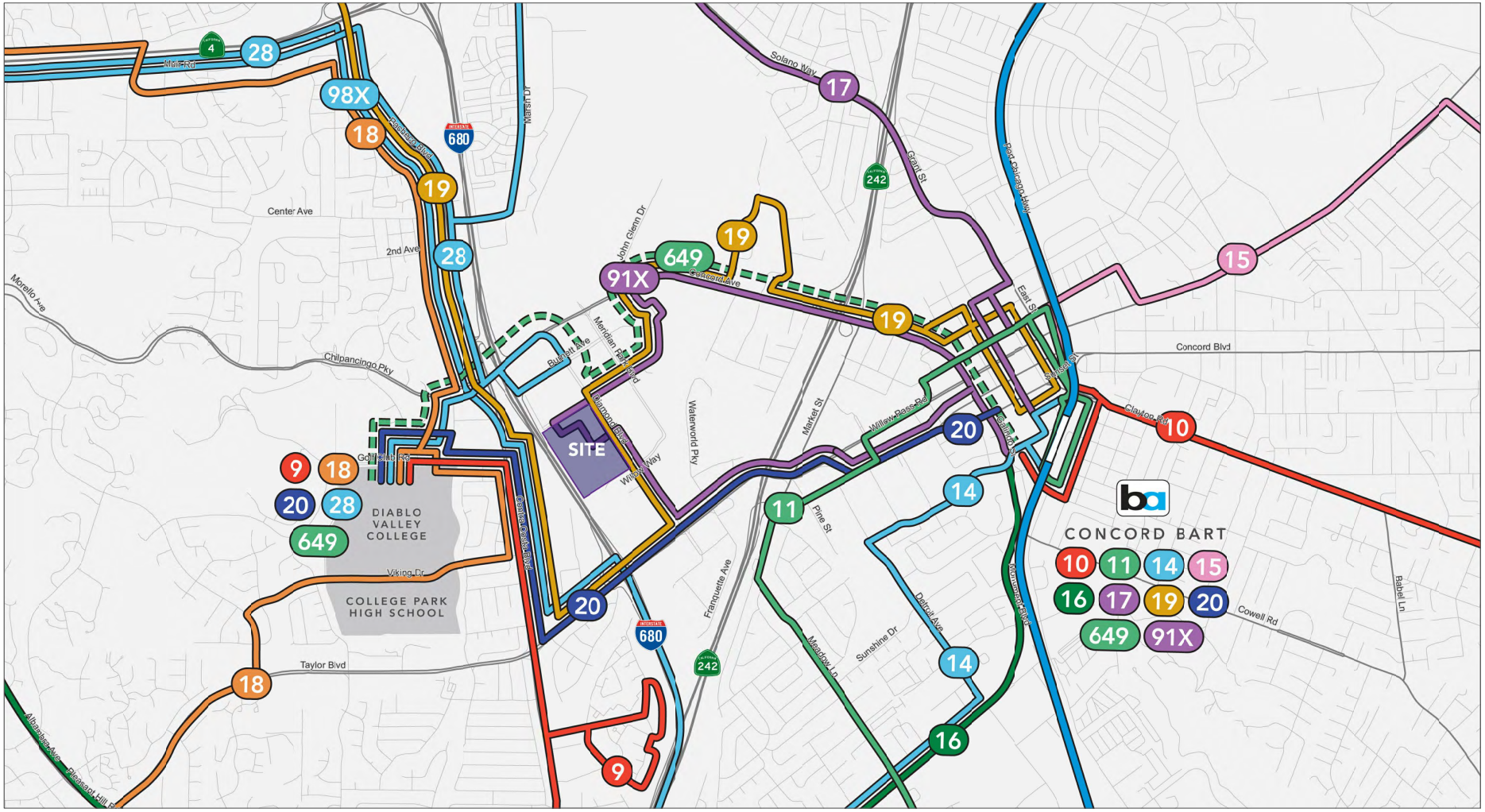
Source:
Kittelson & Associates, Inc., April 2016.

BART. Bay Area Rapid Transit (BART) provides heavy-rail, regional transit service to Alameda, Contra Costa, San Francisco, and San Mateo counties. The nearest station is the Concord BART Station, located near the Oakland Avenue/Clayton Road intersection, about 2 miles from the project site. BART's direct service from this station includes the Pittsburg-Baypoint line which connects San Francisco International Airport, San Francisco, and destinations in central and northern Contra Costa County. Table 4.L-4 summarizes BART service from the Concord station.

Table 4.L-4: BART Service from Concord Station

Line	Day	Frequency
Pittsburg-Baypoint	Weekday	10-20 minutes
	Saturday	20 minutes
	Sunday	20 minutes

Source: Kittelson & Associates, Inc., April 2016.



LSA

FIGURE 4.L-2

The Veranda Shopping Center

Existing Transit Service

SOURCE: Kittelson Associates, Inc. (April 2016)

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(3) Existing Pedestrian and Bicycle Facilities. Bicycling and pedestrian facilities are important components of the transportation network in the study area. They not only offer non-vehicular opportunities for both commute and recreational trips but also provide connections to BART and bus stations to access the region's transit network. Such facilities are described below and exhibited in Figure 4.L-3.

Bicycle Facilities. Bicycle routes and paths are typical examples of bicycle transportation facilities in the project area. Bicycle facilities are defined by the following three classes:

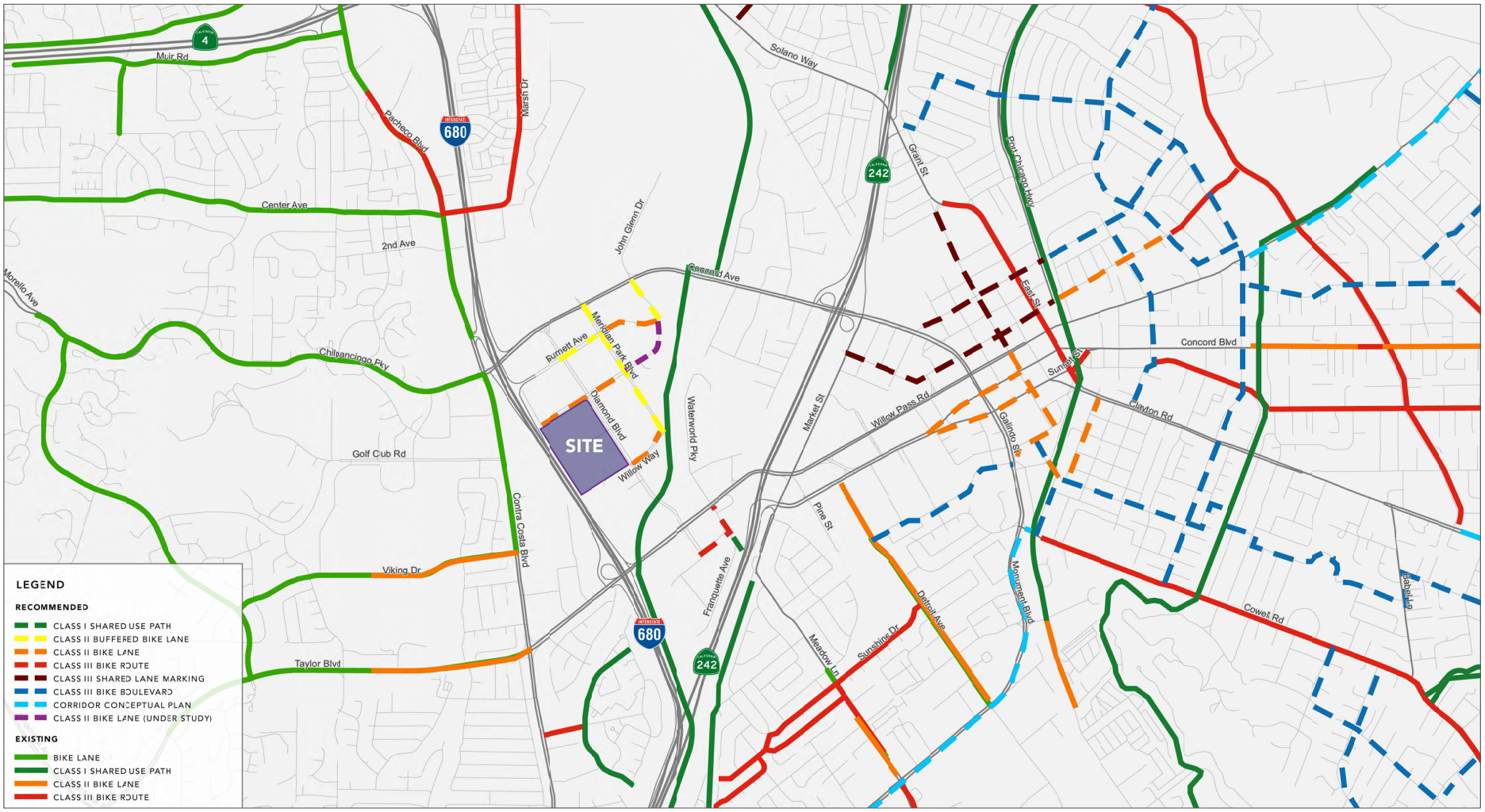
- ***Class I.*** Class I bike paths provide a completely separated facility designed for the exclusive use of bicyclists and pedestrians with crossing points minimized.
- ***Class II.*** Class II bike lanes provide a restricted right-of-way designated lane for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and cross-flows by pedestrians and motorists permitted.
- ***Class III.*** Class III bike routes provide a right-of-way designated by signs or permanent markings and shared with pedestrians and motorists.

The following bikeways are present within the study area:

- ***Class I Bike Paths***
  - Iron Horse Regional Trail between the northern and southern city limits along the western edge of the City. The Iron Horse Trail is a well-known and heavily used bike path that extends from Concord south to Pleasanton. The trail is managed by the East Bay Regional Park District.
- ***Class II Bike Paths***
  - Contra Costa Boulevard from Concord Avenue to Audrey Lane
- ***Class III Bike Routes***
  - None

The Concord General Plan includes planned and proposed bikeway facilities near the project site. The City of Concord's Planning Division is currently undertaking a City-wide Bicycle and Pedestrian plan. The plan will be used as a blueprint to develop a network that promotes safe alternative modes of transportation and helps position the City for future funding for bicycle projects and roadway improvements benefiting the entire community. The project began in 2014 and is anticipated for completion sometime in mid-2016. The project site's frontage, Diamond Boulevard, is not a designated future bicycle lane/route in this plan and is currently not improved with bike trails. However, Class III bike routes are planned at Concord Avenue from I-680 to Clayton Street, Galaxy Way from I-680 to the east, and Willow Way for its full extent. The Draft Plan includes the following improvements.

- ***Class I Bike Paths***
  - Local path adjacent to SR-242 from Market Street to Franquette Avenue (currently under design)



LSA

FIGURE 4.L-3

The Veranda Shopping Center

Existing and Planned Pedestrian and Bicycle Facilities

SOURCE: Kittelson Associates, Inc. (April 2016)

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- ***Class II Bike Paths***
  - Burnett Avenue from Diamond Boulevard to Galaxy Way
  - Galaxy Way from western terminus to Meridian Park Boulevard
  - John Glenn Drive from Burnett Avenue to Concord Avenue
  - Meridian Park Boulevard from Galaxy Way to Concord Avenue
  - Willow Way/Meridian Park Boulevard from Diamond Boulevard to Galaxy Way
  - Galaxy Way from Meridian Park Boulevard to Burnett Avenue
- ***Class III Bike Routes***
  - John Glenn Drive in the immediate vicinity of Concord Avenue

Pedestrian Facilities. Pedestrian facilities are present near the project site. Five-foot sidewalks border the project site to the east along Diamond Boulevard and north along Galaxy Way. There is also pedestrian access from the project site to the Willows Shopping Center located south of the project site. No sidewalk connection exists on the west side of the project site where I-680 is located. The signalized intersections adjoining the project site have marked crosswalks across most legs. The intersection of Diamond Boulevard with the Main Project Access driveway (the primary site entrance) does not have a marked crosswalk across the northbound approach but does have one for the other three approaches.

(4) Existing Lane Configurations and Traffic Volumes. Information on the existing lane configurations and traffic control devices at the study intersections was compiled during field visits to the site. The existing lane geometry and traffic features of the study intersections are included in Appendix I.

All project study intersections were analyzed under weekday AM and PM peak hour traffic conditions. In addition, weekend peak hour traffic conditions were evaluated at each of the project study intersections based on midday Saturday traffic counts taken in January and February 2016. Peak weekday conditions occur from 7:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 6:00 p.m. Saturday peak conditions occur from 2:00 p.m. to 4:00 p.m. Intersection operations were evaluated for the single hour during each of these periods for which the highest traffic volumes were measured.

(5) Existing Intersections Level of Service. AM, PM, and Saturday peak hour study intersection levels of service were calculated using existing intersection turning movement volumes, lane configurations, and traffic controls. Results of the existing conditions analysis are provided in Table 4.L-5.

Table 4.L-5: Intersection Levels of Service – Existing Conditions

No.	Intersection	Traffic Control Device	LOS Standard	AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
				Delay	LOS	Delay	LOS	Delay	LOS
1	Diamond Boulevard and Concord Avenue	Signal	E	17.5	B	26.6	C	22.4	C
2	Diamond Boulevard and Burnett Avenue	Signal	E	33.4	C	35.6	D	31.6	C
3	Diamond Boulevard and Galaxy Way	Signal	E	7.3	A	11.9	B	8.1	A
4	Diamond Boulevard and Signalized Site Driveway	Signal	E	3.4	A	7.4	A	8.5	A
5	Diamond Boulevard and Willow Way	Signal	E	15.0	B	16.8	B	18.4	B
6	Diamond Boulevard and Willows Shopping Center	Signal	E	12.0	B	16.8	B	19.2	B
7	Diamond Boulevard and Willow Pass Road	Signal	E	18.1	B	40.1	D	30.7	C
8	Franquette Avenue and Willow Pass Road	Signal	E	17.1	B	38.0	D	10.5	B
9	Market Street and Willow Pass Road	Signal	E	36.8	D	38.1	D	34.1	C
10	Gateway Boulevard and Willow Pass Road	Signal	E	19.2	B	20.1	C	21.2	C
11	Galindo Street and Willow Pass Road	Signal	E	33.5	C	54.0	D	40.0	D
12	Port Chicago Highway and Willow Pass Road	Signal	E	28.3	C	20.6	C	21.1	C
13	Port Chicago Highway and Concord Boulevard	Signal	E	35.1	D	19.1	B	18.0	B
14	Galindo Street and Concord Boulevard	Signal	E	42.9	D	32.1	C	27.6	C
15	Galindo Street and Clayton Road	Signal	E	19.5	B	40.7	D	18.7	B
16	Gateway Boulevard and Clayton Road	Signal	E	9.0	A	18.2	B	12.1	B
17	Detroit Avenue and Clayton Road	Signal	E	15.0	B	17.0	B	17.4	B
18	Pine Street and Clayton Road	Signal	E	15.1	B	16.2	B	15.3	B
19	Market Street and Clayton Road	Signal	E	30.3	C	30.1	C	26.9	C
20	Galindo Street and Cowell Road	Signal	E	30.2	C	36.3	D	30.5	C
21	SR-242 NB On-Ramp and Concord Avenue	Signal	E	16.2	B	33.2	C	21.7	C
22	SR-242 SB Off-Ramp and Concord Avenue	Signal	E	56.2	E	55.0	D	31.6	C
23	John Glenn Drive and Concord Avenue	Signal	E	16.4	B	29.4	C	24.5	C
24	Meridian Park Boulevard and Concord Avenue	Signal	E	13.0	B	18.9	B	17.3	B
25	Pacheco Boulevard and Concord Avenue	Signal	E	22.7	C	33.0	C	18.5	B
26	Pacheco Boulevard and North Buchanan Circle	TWSC	D	29.9	D	**52.7**	**F**	22.9	C
27	Pacheco Boulevard and Center Avenue	Signal	D	42.0	D	54.7	D	27.8	C
28	Contra Costa Boulevard and 2nd Avenue	Signal	D	11.6	B	13.9	B	14.4	B
29	Contra Costa Boulevard and I-680 SB Ramps	Signal	E	56.8	E	48.6	D	44.8	D
30	Contra Costa Boulevard and Concord Avenue	Signal	E	41.8	D	49.1	D	49.3	D
31	Contra Costa Boulevard and Golf Club Road	Signal	D	**66.1**	**E**	51.1	D	**75.5**	**E**
32	Contra Costa Boulevard and Viking Drive	Signal	D	21.3	C	28.5	C	20.6	C
33	Contra Costa Boulevard and Taylor Boulevard	Signal	E	34.1	C	39.1	D	27.9	C
34	Sunvalley Mall and Sunvalley Boulevard	Signal	E	4.2	A	7.2	A	11.4	B
35	I-680 SB Off-Ramp and Sunvalley Boulevard	Signal	E	37.2	D	27.6	C	11.5	B
36	I-680 NB Ramps and Willow Pass Road	Signal	E	25.7	C	21.5	C	34.0	C

Note: **Bold shading** represents the intersection that does not meet the LOS operational standard established by the jurisdiction.

TWSC: Two-way stop-controlled intersection.

Source: Kittelson & Associates, Inc., April 2016.

As shown in Table 4.L-5, most intersections operate within the applicable LOS standard established by the jurisdiction. Intersections exceeding the applicable LOS standard of the jurisdiction (bold shaded cells in table above) under Existing Conditions include: Intersection 26 (Pacheco Boulevard and North Buchanan Circle) and Intersection 31 (Contra Costa Boulevard and Golf Club Road). Intersection 31 is signal-controlled and Intersection 26 is stop sign-controlled; these intersections do not have sufficient capacity to accommodate the current AM and PM**,** or Saturday peak hour traffic volumes as shown above.

(6) Existing Freeway Level of Service. AM and PM levels of service for the freeway mainline and freeway ramp study segments are shown below in Table 4.L-6 and Table 4.L-7, respectively.

Table 4.L-6: Freeway Mainline Level of Service – Existing Conditions

Location	Existing AM				Existing PM			
	Speed	Volume	Density	LOS	Speed	Volume	Density	LOS
I-680 Northbound								
North of SR-24	62.3	8,103	21.7	C	30.3	9,165	50.5	**F**
South of SR-242	42.3	6,124	28.9	D	54.9	5,032	18.3	C
North of Concord Avenue	59.9	5,138	21.4	C	40.9	6,738	41.2	**E**
North of SR-4	63.5	4,050	15.9	B	60.4	5,356	22.2	C
I-680 Southbound								
North of SR-4	62.7	5,889	18.8	C	64.5	5,202	16.1	B
North of Concord Avenue	47.6	2,942	15.4	B	63.3	2,129	8.4	A
South of SR-242	27.5	7,475	45.2	**F**	64.1	9,425	24.5	C
North of SR-24	20.6	7,343	59.3	**F**	34.0	8,205	40.2	E
SR-4 Eastbound								
West of I-680	54.8	2,624	24.0	C	10.4	1,806	87.1	**F**
Between I-680 and SR-242	43.2	3,400	39.4	**E**	66.1	2,591	19.6	C
East of SR-242	66.7	2,859	10.7	A	50.8	6,180	30.4	D
SR-4 Westbound								
East of SR-242	42.4	3,860	22.8	C	64.8	2,956	11.4	B
Between I-680 and SR-242	67.3	2,841	21.1	C	14.3	2,215	77.4	**F**
West of I-680	58.0	3,164	27.3	D	57.0	2,883	25.3	C
SR-242 Northbound								
North of Concord Avenue	60.7	2,123	11.7	B	23.9	4,378	61.0	**F**
SR-242 Southbound								
North of Concord Avenue	56.0	3,979	17.8	B	67.7	3,389	12.5	B

Notes: Note: **Bold shading** represents a significant impact.
Speed = miles per hour (mph)
Volume = passenger cars per hour (pcph)
Density = passenger cars per mile per lane (pcpmpl)
Source: Kittelson & Associates, Inc., April 2016.

Table 4.L-7: Freeway Ramp Level of Service – Existing Conditions

Location	Type	Existing AM		Existing PM	
		Density	LOS	Density	LOS
I-680 Northbound					
Willow Pass Road Off-Ramp	Diverge	26.2	C	29.6	D
Burnett Avenue Off-Ramp	Diverge	10.7	B	16.6	B
Burnett Avenue On-Ramp	Merge	13.3	B	21.1	C
I-680 Southbound					
Contra Costa Boulevard Off-Ramp	Diverge	10.3	B	7.6	A
Willow Pass Road Westbound On-Ramp	Merge	23.9	C	22.1	C
SR-242 Northbound					
Clayton Avenue Off-Ramp	Diverge	8.6	A	16.0	B
Concord Avenue Eastbound On-Ramp	Merge	6.5	A	11.6	**E/F[1]**
SR-242 Southbound					
Concord Avenue Off-Ramp	Weave	27.3	C	31.0	D
Clayton Avenue On-Ramp	Merge	13.6	**E/F[1]**	27.5	C

Notes: Note: **Bold shading** represents the intersection that does not meet the LOS operational standard established by the jurisdiction.
Density = passenger cars per mile per lane (pcpmpl)
[1] Segments operate at LOS E/F based on local experience.
Source: Kittelson & Associates, Inc., April 2016.

As shown in Table 4.L-6, the following freeway mainline segments operate at LOS E or LOS F under Existing Conditions:

- I-680 Northbound, north of SR-24 during the PM peak hour
- I-680 Northbound, north of Concord Avenue during the PM peak hour
- I-680 Southbound, south of SR-242 during the AM peak hour
- I-680 Southbound, north of SR-24 during the AM peak hour
- SR-4 Eastbound, west of I-680 during the PM peak hour
- SR-4 Eastbound, between I-680 and SR-242 during the AM peak hour
- SR-4 Westbound between I-680 and SR-242 during the PM peak hour
- SR-242 Northbound north of Concord Avenue during the PM peak hour

As shown in Table 4.L-7, while the freeway ramp analysis does not show any segments currently operating at LOS E or LOS F, the Caltrans vehicle volume data used for the analysis undercounts vehicle demand under congested conditions. This may result in congested freeway segments showing a better LOS when analyzed via the HCM 2010 methodology than what drivers observe in the field. Following a standard industry approach when counts are undercounted and for the purposes of a conservative analysis, the following ramp segments are assumed to be below the LOS standard based on local experience:

- Concord Avenue eastbound on-ramp to SR-242 northbound during the PM peak hour
- Clayton Avenue on-ramp to SR-242 southbound during the AM peak hour

(7) Traffic Volumes and Levels of Service: Near-Term Conditions. Near-Term Conditions in the study area are described as a future baseline condition representing existing traffic volumes and additional traffic from nearby developments that have been approved but are not yet constructed, but were not accounted for in the existing traffic counts. No other planned developments or roadway improvements are assumed in the Near-Term Conditions. Near-Term Conditions include the following approved projects in the City of Concord and the City of Pleasant Hill, as described in more detail in Table 6.E-1:

- Buffalo Wild Wings Restaurant at 2090 Diamond Boulevard, Concord
- Oakmont Senior Living at 1401 Civic Court, Concord
- Golden State Lumber at 2180 Diamond Boulevard, Concord
- Renaissance Phase II Apartments at 1825 Galindo Street, Concord
- Target Shopping Center Restaurant at 522 Contra Costa Boulevard, Pleasant Hill

Trip distribution patterns were assumed to be the same as the project since they are located in nearby traffic analysis zones that contain similar land uses. Trip assignment to the transportation network was assumed to follow the most direct route between the origin and destination. Near-Term Conditions intersection level of service is based on weekday AM and PM peak hour and Saturday midday peak hour intersection turning movement volumes and lane configurations using the previously identified methodologies. The Near-Term is included in Table 4.L-13 below.

(8) Traffic Volumes and Levels of Service: Cumulative Conditions. The Cumulative Conditions analysis forecasts how the study area's transportation system would operate with the growth and changes of the surrounding community by the year 2040. The growth and changes of the surrounding community by 2040 were derived from the latest version of the CCTA Model. This model includes all of the present, approved (but not yet constructed), and reasonably foreseeable growth anticipated in Contra Costa County by 2040. The Cumulative Conditions intersection traffic volumes are shown in Table 4.L-14 below.

d. Regulatory Framework. The following is a summary of State, regional, County, and City regulations that apply to transportation and circulation within the study area. Each of these regulatory documents is described below. CCTA technical procedures for analysis methodologies are also described.

(1) State Regulations. Caltrans' responsibilities include the planning, design, construction, and maintenance of interstate freeways as well as State highways. Within this study area, I-680, SR-4, and SR-242 fall under Caltrans jurisdiction. Caltrans' Guide for the Preparation of Traffic Impact Studies (December, 2002) identifies the information that Caltrans requires in evaluating the effect of local development and land use changes on State highway facilities.

Senate Bill 743. Senate Bill 743(Steinberg, 2013) required changes to the CEQA Guidelines regarding the analysis of transportation impacts. Those proposed changes identify vehicle miles traveled (VMT) as the most appropriate metric to evaluate a project's transportation impacts. Once the State Natural Resources Agency adopts these changes to the CEQA Guidelines, automobile delay, as measured by "level of service" and other similar metrics, will no longer be used to determine a significant environmental effect under CEQA. Auto-mobility (often expressed as "level of service")

may continue to be a measure for planning purposes.[3] There are currently no adopted CEQA thresholds for determining VMT impacts, and this report relies on the accepted and traditional level of service thresholds for evaluating the project's transportation impacts. For informational purposes, the project's estimated VMT is described in the Project Travel Demand section and Table 4.L-11 (under c. Significant Impacts).

(2) Metropolitan Transportation Commission. The Metropolitan Transportation Commission (MTC) is the transportation planning, coordinating, and financing agency for the San Francisco Bay Area. The MTC functions as both the State-mandated regional transportation planning agency and the federally-mandated metropolitan planning organization (MPO) for the region. As such, it is responsible for regularly updating the Regional Transportation Plan, a comprehensive blueprint for the development of transportation facilities within the region. The Commission also screens requests from local agencies for State and federal grants for transportation projects to determine their compatibility with the Plan.

(3) Contra Costa County Transportation Authority. Standards for roadway operations in Concord are defined on a countywide basis. In 1988, Contra Costa County voters passed Measure C, raising the sales tax through March 2009 to provide funding for regional transportation improvements. Measure C included the Growth Management Program, establishing a cooperative, multi-jurisdictional planning process requiring participation of all cities and towns and the County in managing the impacts of growth in Contra Costa County. Technical Procedures (CCTA, 2013) were developed to assist local agencies in implementing the Growth Management Program.

Measure J, approved by the County voters in 2004, authorized the extension of Measure C and establishes the Transportation Sales Tax Expenditure Plan that extends the transportation sales tax initially authorized by the passage of Measure C. Measure C provides for $2 billion in funding for programs and projects. These expenditures are "for the construction and improvement of State highways, the construction, maintenance, improvement, and operation of local streets, roads, and highways, and the construction, improvement, and operation of public transit systems", including paratransit services as required by the California Public Utilities Code §180205, and for specific efforts supporting such investments. Measure J's Growth Management Program simplifies Measure C's requirements; it also requires a binding Urban Limit Line (ULL) for the County and all of the cities within the County.

The CCTA was established to implement Measure C and its overall goals. Local jurisdictions work through their respective Regional Transportation Planning Committees (RTPCs). As part of central county, the City of Concord worked with other central county jurisdictions through their RTPC—the Transportation Partnership and Cooperation Committee (TRANSPAC)— to develop the Central Contra Costa Action Plans for Routes of Regional Significance (RRS). The Action Plan identifies multimodal traffic service objectives (MTSOs) for RRS, which in Concord includes the freeways (SR-4, SR-242, I-680) and arterial streets (Clayton Road, Treat Boulevard, and Ygnacio Valley Road/Kirker Pass Road).

[3] Governor's Office of Planning and Research, 2016. *Technical Advisory on Evaluating Transportation Impacts in CEQA, Implementing Senate Bill 743 (Steinberg, 2013),* January 20.

The Measure C Growth Management Program sets standards for the regional and non-regional routes in Contra Costa County, which the City has incorporated into the Growth Management Element of City of Concord 2030 General Plan (General Plan). These standards are tied to land use and provide for a tiered system of transportation systems in Concord, with different standards used for different types of streets. The County Congestion Management Program's (CMP) provisions for Infill Opportunity Zones—as implemented through Policy T 1.1.4 of the General Plan—allow for these standards to be exceeded within ½ mile of BART District stations and within ¼ mile of transit corridors as a means of encouraging infill development at densities necessary to support public transportation, walking, and bicycling.

(4) Local Laws and Regulations. The City of Concord's General Plan was adopted in October 2007. The General Plan provides a blueprint for future growth and development within the City with a 2030 year time horizon. The transportation goals outlined in the plan are listed and discussed in Table 4.I-1 in Section 4.I, Land Use and Planning Policy. The General Plan identifies an acceptable standard of LOS D for intersection performance levels.

The Concord Trails Master Plan was adopted in 2003. This plan provides for the future planning of trails used for recreation and as an alternative mode of transportation and includes trails for hiking, biking and equestrians. This plan identifies existing and proposed trails Citywide and provides outcomes, strategies, and actions to guide City decision-making to ensure the goals of the plan are realized. The plan includes Strategy 1.2, which states that "The City shall strive to accommodate bicycle transportation when designing new streets or modifying existing streets through a mix of providing curb lanes designed wide enough for motorized vehicles and bicyclist and encouraging use of lower traffic volume streets by bicyclists." Two types of bikeways are provided in the plan: Class I, Trails, provide a dedicated path for bicycle and pedestrian travel; and Class III, Bike Routes, provide for shared bicycle use with vehicular traffic.

Concord Municipal Code Section 10.15.050, Installation and Timing of Traffic Signals, establishes the procedure by which the Public Works Director determines if the installation and maintenance of new traffic signals are warranted in order to prevent or relieve traffic congestion. To make such a determination, field investigations are conducted, traffic counts are recorded and other pertinent traffic information is collected. The collected traffic information is used, in accordance with Caltrans traffic engineering and safety standards and warrants.

Municipal Code Chapters 19.25, Off-Site Street Improvement Program, and Chapter 19.30, Land Development and Transportation Improvements, are implemented through Policy and Procedure 144 for Traffic Impact Analysis and Mitigation Requirements (Policy and Procedure 144). Adopted in 1989, Policy and Procedure 144 provides a process to evaluate proposed development projects for traffic and transportation impacts to the City's roadway network, including traffic study requirements, roadway improvements, and payment of Off-site Street Improvement Program (OSIP) fees (see below). Policy and Procedure 144 serves as the policy statement for the OSIP. The OSIP established an equitable impact fee and administration program for funding the needed improvements to accommodate future growth. OSIP fees are updated periodically to ensure that appropriate fees are being collected to pay for base level General Plan transportation improvements.

The OSIP program establishes an equitable fee system that distributes the cost of Citywide improvements evenly among all developments based on adopted fee schedules and trip generation. The fees

collected from developers are used to construct the necessary Citywide transportation improvements to support additional trips from new development. The OSIP fee is not designed to address the mitigation of specific traffic impacts directly caused by individual development projects. Project developers are obligated to fund or construct the necessary improvements to mitigate project-specific traffic impacts in addition to payment of the OSIP fee, subject to applicable credit and reimbursement provisions. Project-specific traffic impacts and mitigations are determined separately from the OSIP fee determination process through the preparation of a CEQA-type traffic impact study.

2. Impacts and Mitigation Measures

The following section presents a discussion of the impacts related to transportation and circulation that could result from implementation of the proposed project. The section begins with the criteria of significance and establishes the thresholds to determine if an impact is significant. The latter part of this section presents the impacts associated with implementation of the proposed project and the recommended feasible mitigation measures, if required.

a. Criteria of Significance. Pursuant to CEQA Guidelines Appendix G, Environmental Checklist Form, the proposed project would have significant transportation or circulation impacts if it were to conflict with the criteria of significance described in detail below.

(1) Measures of Circulation System Effectiveness. 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 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. For the purposes of the transportation and circulation analysis the following measures of effectiveness were applied:

Intersection Operations. The City of Concord General Plan has established the following performance benchmarks for signalized intersections and roadway segments within its jurisdiction:

- Outside the Central Business District, outside ½ mile of BART, and not on transit routes – LOS D (0.90 volume to capacity ratio or v/c)
- Central Business District, within ½ mile of a BART Station, or on transit routes – LOS E (Up to 1.0 v/c)
- For transportation facilities that fail to meet LOS standards (as defined above) under no project conditions, an increase in the volume/capacity ratio of 0.03 or greater above no project conditions is considered to be significant.

The City of Pleasant Hill General Plan has established the following performance benchmarks for signalized intersections and roadway segments within its jurisdiction:

- Suburban – LOS D (0.80-0.84 v/c)
- Central Business District – LOS E (0.90-0.94 v/c)
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

- For transportation facilities that fail to meet LOS standards (as defined above) under no project conditions, an increase in the volume/capacity ratio of 0.03 or greater above the no project conditions is considered to be significant.

Multi-Modal Transportation Service Objectives (MTSOs). Local jurisdictions within Contra Costa County have worked cooperatively with their respective RTPCs to establish MTSOs that serve as quantifiable performance measures for routes of regional significance. The project site and the entire study area are entirely within central Contra Costa County which is overseen by TRANSPAC. The TRANSPAC MTSOs for Central County that apply to the project are the arterial average speed, freeway delay index, and intersection v/c ratio MTSOs. The established thresholds of significance for these three MTSOs based on the latest action plan (2014) in use by the City of Concord are:

- Arterial Average Speed – Requires the maintenance of a minimum average vehicle speed in miles per hour (mph) during morning and evening peak-hour travel times. The roadways and thresholds of significance applied for this project are as follows:
    - Contra Costa Boulevard – 15 mph Average Speed in both directions in the AM and PM peak hours
    - Taylor Boulevard – 15 mph Average Speed in both directions in the AM and PM peak hours
- Freeway Delay Index – The Delay Index is an expression of the amount of time required to travel between two points during the peak hour as compared to non-peak hours. The measure is calculated by dividing peak travel time by non-peak travel time. The freeways and thresholds of significance applied for this project are as follows:
    - Interstate 680 – 4.0 Delay Index
    - State Route 242 – 3.0 Delay Index
    - State Route 4 – 5.0 Delay Index
- Volume-to-Capacity Ratio – v/c is the ratio of traffic volume to capacity at a given intersection. Intersections under the jurisdiction of Contra Costa County are required to maintain a certain v/c ratio. The intersection locations and thresholds of significance applied for this project are as follows:
    - Pacheco Boulevard and Center Avenue – 1.5 v/c

Freeway Operations. As stated in the Caltrans Traffic Impact Study Guide, "Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State highway facilities; however, Caltrans acknowledges that this may not always be feasible. If an existing State highway facility is operating at less than the appropriate target LOS, the existing Measure of Effectiveness (MOE) should be maintained." Since all freeway analysis segments are also CMP segments, the City has determined, in its discretion and similar to approaches taken by other jurisdictions, to identify significant traffic impacts on I-680, SR-4, and SR-242 in the study area by using the significance criteria from the CCTA Congestion Management Program (CMP) described in the next section. The CMP criteria better capture an appropriate target LOS for these facilities because they are already operating at less than the LOS Caltrans endeavors to maintain.

(2) CCTA Congestion Management Program. Conflicts with CCTA Congestion Management Program, including, but not limited to level of service standards and travel demand

measures, or other standards established by CCTA for designed roadways or highways would be considered a significant impact. CCTA has adopted LOS standards for CMP facilities. The project is considered to have a significant impact to these CMP facilities if the following would occur:

- For the freeway segments and CMP intersections currently in compliance with the adopted LOS standard:
  - If the project will cause the freeway segment or intersection to operate at a level of service that violates the standard adopted in the current Congestion Management Program (CMP).
- For the freeway segments and intersections currently not in compliance with the adopted LOS standard:
  - If the project will add traffic demand equal to 1 percent or more of the freeway segment's capacity; or
  - If the project will increase the volume/capacity ratio by 0.03 or greater above no project conditions at the CMP intersections.

(3) Hazards. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Queue Length. Queue length was identified as substantially increasing the hazard at an intersection if:

- Causes a 95th percentile left or right turn lane queue to overflow the available turn storage by one or more vehicles; or
- Causes a 95th percentile through movement queue to extend into an upstream signalized intersection by one or more vehicles.

95th percentile queues are generally considered the maximum queue that is anticipated under normal traffic volumes and is used in the design of intersections. If queues increase and exceed the 95th percentile queues that the intersection was designed to accommodate, it may lead to decreased safety for motorists.

(4) Emergency Access. Result in inadequate emergency access.

(5) Public Transit, Bicycle, or Pedestrian Facilities. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

(6) Air Traffic Patterns. 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.

b. Less-than-Significant Impacts. The project's less-than-significant transportation and circulation impacts are discussed below.

(1) Air Traffic Patterns. The entire project site is located within the Airport Influence Area of Buchanan Field, and the western portion of the project site is located within Safety Zone 4.[4] In accordance with the Airport Land Use Compatibility Plan, land uses within Safety Zone 4 must be limited to buildings with no more than four habitable floors above ground, and aboveground storage of more than 2,000 gallons of fuel or other hazardous materials is prohibited in residential or commercial areas. The heights of the proposed one-story retail buildings to be developed for the project (generally 30-40 feet with a maximum structure height of 60 feet) are similar to the current building heights at the project site (up to 65 feet). Because of its location, the project is subject to review by the ALUC in accordance with General Plan policies LU-7.1.2, LU-7.1.3, and LU-7.1.4 to ensure that the design does not create a potential obstruction hazard for aircraft using Buchanan Field or other safety hazard. The City forwarded the proposed application to the ALUC for review, and ALUC staff determined that the project is consistent with the ALUC Plan.[5] Therefore, the project would not result in a change to air traffic patterns, and this impact would be less than significant.

(2) Emergency Access. Access to The Veranda Shopping Center would occur via three driveways on Galaxy Way and three driveways on Diamond Boulevard. Given the multiple points of ingress and egress, the proposed site plan is expected to provide adequate emergency vehicle access and therefore the impact is considered to be less than significant.

This analysis assumes, in accordance with CEQA, that the final design of all circulation improvements shall be required to adhere to all applicable City and other statutes and requirements, including, without limitation, those set forth in the California Fire Code and California Vehicle Code. Therefore, there would be no impacts related to inadequate emergency access associated with development of the project.

(3) Bicycle Facilities. A qualitative assessment was conducted to determine the project's potential impacts on bicyclists and bicycle facilities. The City's Draft Bicycle, Pedestrian, and Safe Routes to Transit Plan includes planned Class II and Class III bikeways along Burnett Avenue, John Glenn Drive, Meridian Park Boulevard, Willow Way, and Galaxy Way. The Willow Way facility would provide a bicycle connection from Diamond Boulevard to the Iron Horse Trail, which runs along the Walnut Creek drainage corridor. The proposed project would not conflict with existing or proposed bicycle facilities identified in the Draft Bicycle, Pedestrian, and Safe Routes to Transit Plan because the project would not change roadway geometrics which would prevent bicycle facility development. Therefore, the project would not have a significant impact on bicycle facilities.

(4) Parking. While the adequacy of parking for a project is not considered in the CEQA guidelines and typically is not treated as a CEQA impact (except under limited circumstances where there may be secondary physical environmental impacts), a parking assessment is provided for informational purposes. This parking assessment reviews the estimated demand for parking based on land use as well as parking requirements stipulated in the City of Concord Municipal Code. The project site plan is still conceptual; therefore, the exact number of parking spaces is unknown.

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[4] Contra Costa County Airport Land Use Commission, 2000, *Contra Costa County Airport Land Use Compatibility Plan*, December 13.

[5] Contra Costa County Airport Land Use Commission, 2016. *CENTERCAL Shopping Center, File #PL15-0466-ALUC Review letter to Frank Abejo*. January 11.

However, the project plans to provide up to 1,500 vehicle parking spaces (assuming maximum buildout), which would ensure consistency with applicable City standards.

Based on City of Concord Municipal Code and California Administrative Code, a 375,000 square foot shopping center is required to have the parking spaces shown in Table 4.L-8.

Table 4.L-8: Project Parking Requirements

Vehicles	1,500
Handicap	25
Motorcycle	30
Short Term Bicycle	75
Long Term Bicycle	150

Source: Kittelson & Associates, Inc., April 2016.

Using a conservative analysis, the estimated parking demand is based on the maximum 375,000 square feet of the shopping center land use (ITE 820) under the following conditions:

- Weekday, Friday, Saturday, and Sunday for month not including December.
- Weekday, Friday, Saturday, and Sunday for the month of December.

Based on these conditions, the average estimated vehicle parking demand for the project is shown in Table 4.L-9. Assuming 1,500 parking spaces are required by City code, the project provides sufficient parking to meet average demand for all but the Saturday and Sunday peak hours in December.

Table 4.L-9: Project Parking Demand

Average Estimated Demand	Weekday	Friday	Saturday	Sunday
Non-December	956	1,103	1,076	765
December	1,410	1,485	1,751	1,654

Source: Kittelson & Associates, Inc., April 2016.

(5) Internal Site Circulation. The TIS considered four areas when assessing the conceptual site plan for internal site circulation adequacy:

- Auto circulation within the parking and drive aisles
- Delivery truck circulation
- Bus stop relocation and design
- Bicycle and pedestrian circulation within the site

The following items are not CEQA impacts that need to be mitigated but rather issues identified for potential improvement to the conceptual site plan (dated February 2016) that would improve on-site circulation for the various modes. As the project design evolves through the City's development review process, it is anticipated the final site plan will address most or all of these suggested improvements. The City could require conditions of approval to address any design concerns that remain at the time of project approval. This analysis assumes that the project would be required to comply with all applicable City of Concord standards and other relevant requirements and standards, which would further minimize effects on circulation or safety within the site.

Auto Circulation within the Parking and Drive Aisles. A qualitative assessment was conducted to determine whether the conceptual site plan would result in an increase in hazards on-site based on the preliminary site design. The following potential concerns were identified:

- Proposed Roundabout – With two circulating lanes, the proposed roundabout has the potential to cause side-swipe collisions between circulating vehicles. It is unlikely a two-lane roundabout is needed to accommodate traffic within the site. Reducing the roundabout to one circulating lane, while maintaining the inbound right-turn lane from Diamond Boulevard would reduce the rate of side-swipe collisions and should provide sufficient capacity to handle project traffic within the site.

Delivery Truck Circulation. Primary delivery truck circulation appears to be behind the retail buildings parallel to I-680 and along the primary drive aisle running parallel to Diamond Boulevard through the roundabout. Delivery trucks unable to successfully navigate within the project site would have the potential to result in conflicts to pedestrian, bicycle, and other vehicle circulation by having trailers track over pedestrian sidewalks in order to make sharp turns or cross into opposing lanes of traffic.

- Delivery Truck Turning – Trucks delivering goods to the project site would be required to make several 90-degree turns to enter and exit the project site. Small curb radii at the turns may require delivery trucks to mount sidewalks or turn into opposing lanes of traffic creating a potential hazard for pedestrians and other motorists due to design. Performing a truck turning template analysis at all locations where delivery trucks would make turns before finalizing the site plan would ensure effective circulation for trucks within the site.
- Delivery Truck Loading – It is unclear from the site plan how delivery trucks would access the restaurants and retail located along the primary entrance to the site off of Diamond Boulevard and the areas located near the intersection of Diamond Boulevard and Willow Way. The parking areas in front of these parcels do not appear to provide sufficient turn radii to accommodate large trucks. Identifying loading zones for these parcels and making necessary changes to the site plan would improve access for delivery trucks. The applicant has advised that based on its experience with other similar centers, many of these smaller retail uses do not utilize large trucks for deliveries, but instead receive deliveries via smaller UPS and Federal Express trucks.

County Connection Bus Stop. The County Connection Route 91X currently circulates through the project site providing weekday service to the existing office employees.

- Route 91X Relocation – This route would need to be relocated during construction of the project, which has the potential to affect performance of the 91X line.
- Route 91X Bus Stop - The conceptual site plan does not appear to have a bus boarding and alighting area defined within the project site, which could potentially affect transit passengers' access.

The project proponent should work with the County Connection to minimize the impact of relocating the 91X line during construction and incorporate a bus boarding and alighting area into the final site design, to the extent desired by County Connection, which would be fully accessible for all transit passengers.

Bicycle Access and Circulation. Based on a review of the conceptual site plan, the following concerns were identified related to the performance or safety of the proposed bicycle facilities on the project site, and the following improvements for bicycle access and circulation are recommended:

- Bicycle Lanes – The conceptual site plan shows bicycle lanes between the signalized site access off of Diamond Boulevard and the roundabout. These bicycle lanes could increase hazards for bicyclists entering and exiting the site since their use would require bicyclists to merge across multiple vehicle lanes over a short distance in order to make left turns at Diamond Boulevard or at the roundabout. A better design of these bicycle lanes or removal and replacement with sharrows may improve bicycle safety and operations.
- Sharrow Symbols – The main drive aisle is shown to have sharrow symbols within the conceptual site plan. Sharrow symbols are often used to make drivers more alert to bicyclists while driving on local roadways with higher speeds. Motorists traveling within a parking area are generally traveling at a slower speed and more alert for pedestrians and bicyclists than while traveling along a local roadway. Therefore, sharrow symbols within the project site may not be needed. It would be more useful to provide better wayfinding signage directing bicyclists to the bicycle parking locations within the site.
- Parking – The conceptual site plan does not explicitly discuss the location of bicycle parking within the project site. According to the Municipal Code, short term bicycle parking "shall be located within 50 feet of the main entrance to each anchor store". As the site plan is finalized, consider bicycle parking at the terminus of the protected path that runs between the grocery store parking area and the buildings parallel to I-680 to encourage use of the protected path by bicyclists.
- Bicycle Connection to the Willows Shopping Center and Willow Way – While there is currently a pedestrian connection between the project site and the Willows Shopping Center, the conceptual site plan does not show a bicycle connection between the two. Given the likelihood that bicyclists may travel between these two shopping centers, the pedestrian connection could be designed to also accommodate bicyclists.

Pedestrian Access and Circulation. Based on a review of the conceptual site plan, concerns were identified related to the pedestrian access and circulation, and the following improvements are recommended:

- Access to the Grocery Store – The conceptual site plan shows a protected bicycle facility running between the grocery store parking area and the buildings at the rear of the site, parallel to I-680. While the site plan shows separate pedestrian walkways, this path will likely be used by pedestrians potentially resulting in an increase in pedestrian/bicycle conflicts that would affect both modes. Because of the wide width, appropriate striping to designate separate pedestrian and bicycle areas on this path would reduce potential conflicts.

As stated above, the above comments are based on a review of the Conceptual Site Plan from February 2016. The project site plan is being refined through the City's development review process. Any remaining design issues can be required to be addressed as conditions of approval or addressed through the City's review of construction plans for building permits, but are not required as mitigation measures to address environmental effects.

c. Significant Impacts. The project's significant impacts are discussed below, and mitigation measures are proposed to address project impacts.

(1) Conflict with Circulation System Performance Standards. The proposed project's potential to conflict with adopted measures of effectiveness for the transportation circulation system is discussed below. This section begins with an estimate of the proposed project's travel demand (trip generation, distribution, and assignment), followed by the analysis of potential impacts due to the addition of project trips to the circulation system under the analysis scenarios.

Project Travel Demand: Trip Generation, Distribution, and Assignment Proposed Project Analysis. Project trips were generated using trip rates from the Institute of Transportation Engineers (ITE), *Trip Generation Manual*, *9th Edition*. The proposed project's trip generation is provided in Table 4.L-10.

Trip Generation. Trip generation for development projects, such as the proposed project, is typically calculated based on rates for various land uses types defined in the Institute of Transportation Engineer's (ITE) publication, *Trip Generation 9th Edition*. *Trip Generation* is a standard reference used by jurisdictions throughout the country to estimate potential vehicular trips from proposed developments.

A "trip" is defined in ITE's *Trip Generation* publication as a single or one-directional vehicular movement with either the origin or destination at the project site. As a result, a trip can be either "to" or "from" the site. Therefore, a single customer visit to a site is counted as two trips (i.e., one to and one from the site).

For purposes of determining the reasonable worst-case impacts of traffic on the surrounding street network, the trips generated by the proposed project were estimated for the peak hour between the hours of 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m. on weekdays and the peak hour between 2:00 p.m. and 4:00 p.m. on Saturdays. While the project itself may generate more traffic during other times of the day, such as around noon, the peak of "adjacent street traffic" represents the time period when the uses generally contribute the greatest amount of congestion to the roadway network. The greatest congestion generally occurs during the PM peak when commute traffic is most prevalent.

For the purpose of estimating trip generation, the uses of the proposed project were classified into four different ITE land use types: Shopping Center (Land Use Code 820), Movie Theater (Land Use Code 444), Fast Food (Land Use Code 934), and Grocery Store (Land Use Code 850). After estimating the total trips generated by the proposed land uses, deductions are made to account for traffic already using the road network and trips that would occur between uses within the shopping center. Finally, to arrive at the project's net new trip generation, traffic currently generated by employees at the existing office buildings is deducted. Table 4.L-10 summarizes the trip generation characteristics of the various land uses, the deductions assumed, and provides a summary of the vehicular trips that would result from the proposed project during the weekday AM and PM peak hours, Saturday peak hour, as well as the total estimated daily traffic.

Table 4.L-10: Project Trip Generation

Land Use	ITE Code	Size (sf)	Weekday Daily	Saturday Daily	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
					Total	In	Out	Total	In	Out	Total	In	Out
Movie Theater	444	45,000	2,185	4,468	0	0	0	171	109	62	1,233	690	543
Fast Food	934	5,000	2,481	3,611	228	116	112	164	85	79	295	150	145
Grocery Store	850	35,000	3,579	6,216	119	74	45	332	169	163	373	190	183
Shopping Center	820	290,000	13,568	18,071	299	185	114	1,223	587	636	1,747	908	839
Total Floor Area		375,000											
Total Project Trips:			21,813	32,366	646	375	271	1,890	950	940	3,648	1,938	1,710
Internal Capture Trips:			-4,782	-8,291	0	0	0	-267	-134	-133	-992	-528	-464
Diverted Trips:			-4,307	-7,109	-63	-32	-31	-418	-205	-213	-601	-312	-289
Existing Site Trips[1]:			-958[1]	-349[1]	-92	-82	-10	-173	-51	-122	-61	-49	-12
Net New Trips:			**11,766**	**16,617**	**491**	**261**	**230**	**1,032**	**560**	**472**	**1,994**	**1,049**	**945**

Source: Kittelson & Associates, Inc., April 2016.

[1]Existing site trips are derived from field collected data which is typically only collected for the AM, PM, and Saturday peak hours when performing traffic studies. Therefore, weekday and Saturday daily volumes were estimated by applying the ratio of daily and peak hour vehicle trip generation from the general office building land use (ITE 710) in the ITE Trip Generation Manual to the field collected peak hour volumes.

In the TIS (Appendix I), a quantitative analysis of Saturday peak hour trip generation is provided using the Saturday "Peak Hour of Generator" rates from the ITE categories described above. Based on these rates, Saturday trip generation for this project conservatively assumed that all uses had their peak traffic generation during the same time period, which would result in 1,994 vehicle trips. As a result, weekend (Saturday) peak hour of traffic (2:00-4:00 p.m.) would be nearly double the weekday PM peak hour.

Vehicle Miles Traveled (VMT). The latest CCTA Model was used to determine that the average trip length for vehicles accessing the project site was 6.91 miles. Multiplying this average trip length by the net new daily weekday and Saturday trip generation shows that the project increases VMT in the region by between 81,000 and 115,000 miles per day as shown in Table 4.L-11.

Table 4.L-11: Project Vehicle Miles Traveled

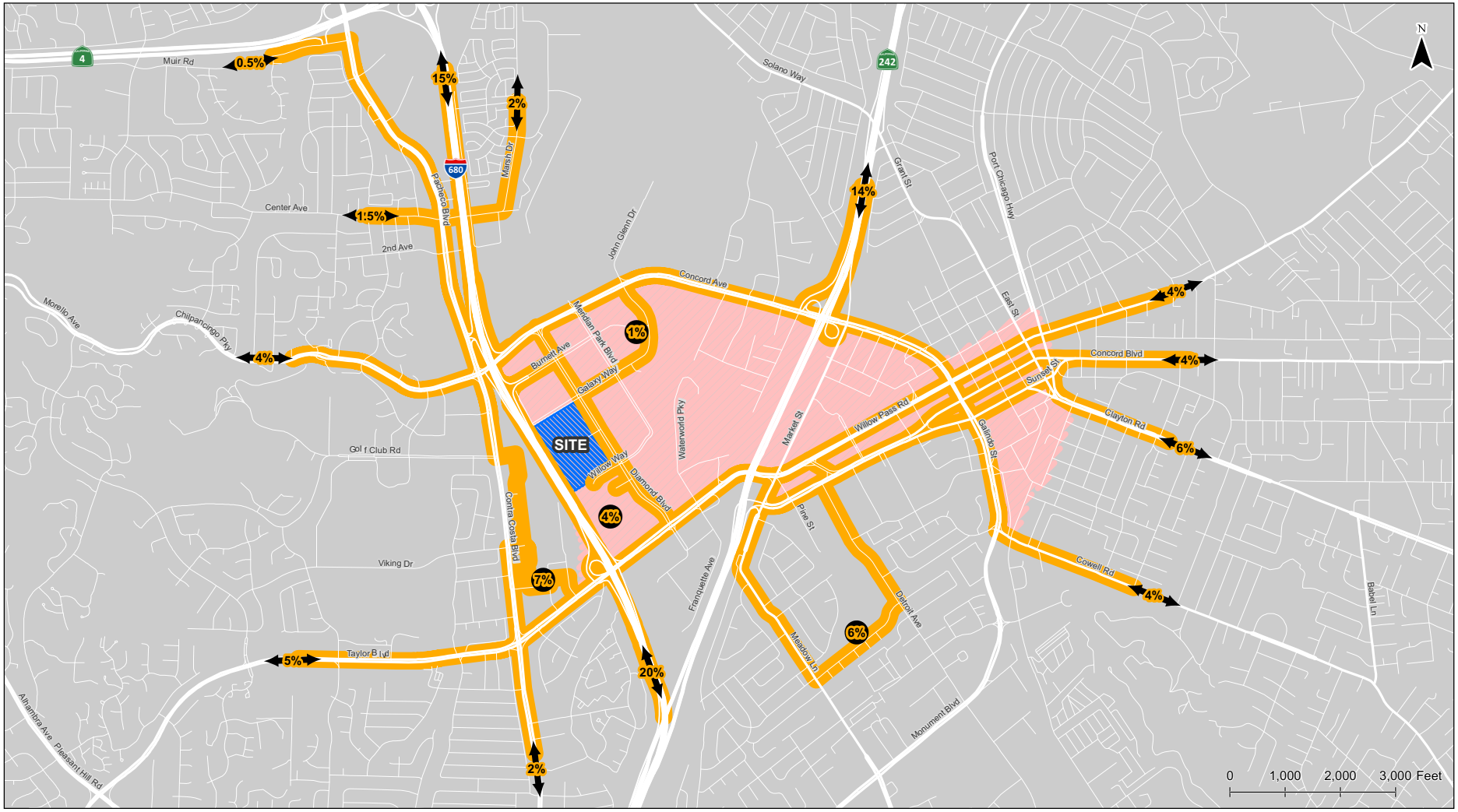
VMT Calculations	Weekdays		Saturday	
	Trips	VMT	Trips	VMT
Proposed Project	12,724	87,921	16,966	117,234
Existing[1]	-958	-6,620	-349	-2,412
Net New	11,766	81,301	16,617	114,822

Source: Kittelson & Associates, Inc., 2016.
[1]Existing site trips are derived from field collected data which is typically only collected for the AM, PM, and Saturday peak hours when performing traffic studies. Therefore, weekday and Saturday daily volumes were estimated by applying the ratio of daily and peak hour vehicle trip generation from the general office building land use (ITE 710) in the ITE Trip Generation Manual to the field collected peak hour volumes.

Trip Distribution and Assignment. The project trip distribution was determined using the latest CCTA Countywide Travel Model (CCTA Model) by running a select zone analysis for the traffic analysis zone containing the project site. Both the AM and PM select zone analyses were compared and found to be similar. Therefore, the same distribution pattern was used for both the AM and PM peak hours. Although the CCTA Model does not forecast Saturday conditions, the Saturday trip distribution was assumed to be the same as the AM and PM peak hours because access routes to the project site are not anticipated to be substantially different on a Saturday compared to the AM and PM peak hours midweek. Final trip distribution and assignment were based on the select zone analysis, input from the City of Concord, and engineering judgement. Figure 4.L-4 shows the project's trip distribution and assignment.

Existing Plus Project Conditions Intersection Impacts. Intersection level of service analysis of Existing and Existing Plus Project Conditions was performed to determine the potential traffic impacts of the proposed project if it were built and operating under existing traffic conditions. These analysis conditions are discussed below.

The weekday and Saturday peak hour intersection turning movement volumes and lane configurations for Existing Conditions and Existing Plus Project Conditions were used to calculate the level of service and identify potential impacts on the identified intersections based on the previously described significance thresholds. The level of service results are summarized in Table 4.L-12 and the detailed calculation worksheets are provided in Appendix I. As shown in in Table 4.L-12, the project would cause the following significant impacts to intersection LOS under Existing Conditions:



LSA

Trip Assignment Path
Central Business District

FIGURE 4.L-4

The Veranda Shopping Center

Trip Distribution and Assignment

SOURCE: Kittelson Associates, Inc. (April 2016)

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Table 4.L-12: Intersection Level of Service – Existing and Existing Plus Project Conditions

Intersection	LOS Standard	Existing									Existing Plus Project								
		AM Peak Hour			PM Peak Hour			Saturday Peak Hour			AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
		Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c
1. Diamond Boulevard and Concord Avenue	E	17.5	B	0.45	26.6	C	0.66	22.4	C	0.50	19.6	B	0.48	35.0	C	0.75	38.3	D	0.71
2. Diamond Boulevard and Burnett Avenue	E	33.4	C	0.39	35.6	D	0.57	31.6	C	0.55	32.4	C	0.41	35.7	D	0.62	34.8	C	0.66
3. Diamond Boulevard and Galaxy Way	E	7.3	A	0.13	11.9	B	0.20	8.1	A	0.17	9.5	A	0.16	14.4	B	0.36	15.1	B	0.58
4. Diamond Boulevard and Signalized Site Driveway	E	3.4	A	0.08	7.4	A	0.18	8.5	A	0.22	8.3	A	0.20	20.6	C	0.86	**151.9**	**F**	**2.43**
5. Diamond Boulevard and Willow Way	E	15.0	B	0.27	16.8	B	0.35	18.4	B	0.39	14.9	B	0.28	16.9	B	0.43	20.3	C	0.49
6. Diamond Boulevard and Willows Shopping Center	E	12.0	B	0.19	16.8	B	0.39	19.2	B	0.43	10.6	B	0.23	14.9	B	0.48	16.4	B	0.58
7. Diamond Boulevard and Willow Pass Road	E	18.1	B	0.52	40.1	D	0.70	30.7	C	0.72	20.5	C	0.57	62.1	E	0.85	67.3	E	1.06
8. Franquette Avenue and Willow Pass Road	E	17.1	B	0.51	38.0	D	0.79	10.5	B	0.40	17.1	B	0.52	38.1	D	0.81	10.6	B	0.45
9. Market Street and Willow Pass Road	E	36.8	D	0.78	38.1	D	0.71	34.1	C	0.57	37.4	D	0.79	37.2	D	0.73	32.6	C	0.60
10. Gateway Boulevard and Willow Pass Road	E	19.2	B	0.32	20.1	C	0.58	21.2	C	0.42	19.4	B	0.33	21.1	C	0.61	22.2	C	0.48
11.Galindo Street and Willow Pass Road	E	33.5	C	0.68	54.0	D	0.81	40.0	D	0.68	34.3	C	0.68	58.1	E	0.83	44.1	D	0.73

Intersection	LOS Standard	Existing									Existing Plus Project								
		AM Peak Hour			PM Peak Hour			Saturday Peak Hour			AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
		Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c
12. Port Chicago Highway and Willow Pass Road	E	28.3	C	0.77	20.6	C	0.65	21.1	C	0.45	28.3	C	0.77	20.4	C	0.65	20.6	C	0.47
13. Port Chicago Highway and Concord Boulevard	E	35.1	D	0.78	19.1	B	0.49	18.0	B	0.42	35.9	D	0.78	19.3	B	0.51	18.4	B	0.44
14. Galindo Street and Concord Boulevard	E	42.9	D	0.77	32.1	C	0.73	27.6	C	0.66	43.6	D	0.78	33.1	C	0.74	28.9	C	0.69
15. Galindo Street and Clayton Road	E	19.5	B	0.54	40.7	D	0.71	18.7	B	0.50	20.0	B	0.55	46.7	D	0.73	20.2	C	0.54
16. Gateway Boulevard and Clayton Road	E	9.0	A	0.26	18.2	B	0.36	12.1	B	0.26	9.4	A	0.27	18.8	B	0.37	13.4	B	0.27
17. Detroit Avenue and Clayton Road	E	15.0	B	0.39	17.0	B	0.49	17.4	B	0.47	15.1	B	0.40	17.3	B	0.49	17.9	B	0.49
18. Pine Street and Clayton Road	E	15.1	B	0.39	16.2	B	0.46	15.3	B	0.36	15.2	B	0.39	16.5	B	0.47	15.9	B	0.37
19. Market Street and Clayton Road	E	30.3	C	0.79	30.1	C	0.75	26.9	C	0.70	31.0	C	0.79	30.9	C	0.76	27.6	C	0.73
20. Galindo Street and Cowell Road	E	30.2	C	0.62	36.3	D	0.70	30.5	C	0.59	30.2	C	0.62	36.8	D	0.70	31.1	C	0.60
21. SR-242 NB On-Ramp and Concord Avenue	E	16.2	B	0.69	33.2	C	0.88	21.7	C	0.67	16.2	B	0.69	33.3	C	0.88	21.7	C	0.67
22. SR-242 SB Off-Ramp and Concord Avenue	E	56.2	E	0.80	55.0	D	0.93	31.6	C	0.69	60.4	E	0.82	59.2	E	0.95	34.9	C	0.72
23. John Glenn Drive and Concord Avenue	E	16.4	B	0.42	29.4	C	0.65	24.5	C	0.55	17.0	B	0.44	31.3	C	0.69	27.5	C	0.63

Intersection	LOS Standard	Existing									Existing Plus Project								
		AM Peak Hour			PM Peak Hour			Saturday Peak Hour			AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
		Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c
24. Meridian Park Boulevard and Concord Avenue	E	13.0	B	0.46	18.9	B	0.55	17.3	B	0.43	13.0	B	0.47	18.9	B	0.57	16.9	B	0.46
25. Pacheco Boulevard and Concord Avenue	E	22.7	C	0.75	33.0	C	0.82	18.5	B	0.67	22.8	C	0.75	33.4	C	0.82	18.8	B	0.67
26. Pacheco Boulevard and North Buchanan Circle	D	29.9	D	0.28	52.7	F	0.37	22.9	C	0.18	30.0	D	0.28	53.0	F	0.37	23.1	C	0.18
27. Pacheco Boulevard and Center Avenue	D	42.0	D	0.65	54.7	D	0.82	27.8	C	0.54	42.4	D	0.66	56.1	E	0.84	29.1	C	0.58
28. Contra Costa Boulevard and 2nd Avenue	D	11.6	B	0.62	13.9	B	0.61	14.4	B	0.54	11.6	B	0.62	13.9	B	0.62	14.5	B	0.55
29. Contra Costa Boulevard and I-680 SB Ramps	E	56.8	E	0.63	48.6	D	0.76	44.8	D	0.70	63.6	E	0.64	52.6	D	0.79	49.5	D	0.77
30. Contra Costa Boulevard and Concord Avenue	E	41.8	D	0.82	49.1	D	0.87	49.3	D	0.79	45.7	D	0.82	61.3	E	0.92	74.8	E	0.88
31. Contra Costa Boulevard and Golf Club Road	D	66.1	E	0.92	51.1	D	0.81	75.5	E	0.88	68.5	E	0.93	52.4	D	0.82	81.9	F	0.91
32. Contra Costa Boulevard and Viking Drive	D	21.3	C	0.52	28.5	C	0.48	20.6	C	0.45	21.4	C	0.52	28.5	C	0.49	21.4	C	0.45
33. Contra Costa Boulevard and Taylor Boulevard	E	34.1	C	0.69	39.1	D	0.69	27.9	C	0.55	34.4	C	0.70	39.9	D	0.70	29.4	C	0.57

Intersection	LOS Standard	Existing									Existing Plus Project								
		AM Peak Hour			PM Peak Hour			Saturday Peak Hour			AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
		Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c
34. Sunvalley Mall and Sunvalley Boulevard	E	4.2	A	0.61	7.2	A	0.60	11.4	B	0.72	4.3	A	0.62	7.5	A	0.61	12.5	B	0.74
35. I-680 SB Off-Ramp and Sunvalley Boulevard	E	37.2	D	0.62	27.6	C	0.56	11.5	B	0.53	36.8	D	0.63	27.2	C	0.58	11.4	B	0.56
36. I-680 NB Ramps and Willow Pass Road	E	25.7	C	0.69	21.5	C	0.35	34.0	C	0.63	25.9	C	0.71	22.6	C	0.36	33.3	C	0.70

Note: **Bold shading** represents a significant impact.
Source: Kittelson & Associates, Inc., April 2016.

Impact TRANS-1: The additional traffic generated by the proposed project would result in unacceptable operation at the intersection of Diamond Boulevard and Signalized Site Driveway (#4) during the Saturday peak hour under Existing Conditions. (S)

As the main access to the project site is from Diamond Boulevard, the project would account for approximately 39 percent of the traffic using this intersection. The addition of this traffic, especially to the northbound left-turn movements entering the site, would result in a change from LOS A to LOS F.

Mitigation Measure TRANS-1: Implement the following geometric and signal timing improvements:

- Modify intersection traffic signal design and add a second northbound left-turn lane by removing one northbound through lane and extend the queue storage to at least 300 feet. The west leg median will need to also be modified to accommodate two lanes of northbound turning traffic;
- Reconfigure the eastbound approach to have an exclusive left turn, shared left and through lane, and exclusive right turn lane;
- Convert southbound and northbound left turn lanes from permissive signal phasing to protected signal phasing;
- Convert eastbound and westbound movements to run separately (split phasing);
- Provide an eastbound right-turn overlap signal phase to run concurrently with the northbound left-turn movement. Northbound U-turns to be prohibited;
- Install a crosswalk and pedestrian signal head across the southern leg of the intersection; and
- Implement a signal timing improvement project along Diamond Boulevard within the signal's coordination group (between the Willows Shopping Center access intersection and Galaxy Way) by funding actual cost. (LTS)

Implementation of Mitigation Measure TRANS-1 would improve the operation of this intersection to LOS C during the Saturday peak hour and reduce the project impacts to less than significant.

Impact TRANS-2: The proposed project would result in unacceptable operations (from LOS D to LOS E in the PM peak hour) at the intersection of Pacheco Boulevard and Center Avenue (#27) under Existing Conditions. (S)

This increase in traffic volume for the northbound and southbound approaches would be enough to cause this intersection to deteriorate from LOS D to LOS E in the PM peak hour.

Mitigation Measure TRANS-2: Implement a signal timing improvement project along Pacheco Boulevard within the signal's coordination group (between Center Avenue and 2nd Avenue) by funding actual cost. The City of Concord is to work with Contra Costa County to implement the signal timing project as necessary. (SU)

Implementation of Mitigation Measure TRANS-2 would improve the operation of this intersection to LOS D during the PM peak hour and reduce the project impacts to less than significant. However, because this intersection is under the jurisdiction of Contra Costa County, the implementation and timing of the mitigation measure is not under the City's control. Therefore, for purposes of a conservative analysis, this impact is considered to remain significant and unavoidable.

Existing Plus Project Conditions Freeway Impacts. Freeway analysis of Existing and Existing Plus Project Conditions was performed to determine the potential traffic impacts of the proposed project if it were built and operating under existing traffic conditions. These analysis conditions are discussed below.

Impact TRANS-3: The proposed project would contribute to the SR-242 Northbound segment north of Concord Avenue operating below the LOS standard during the PM peak hour under Existing Conditions. (S)

This freeway segment is currently operating at LOS F and the project would cause the traffic volume to increase by 68 trips, which is approximately 1 percent of the segment's capacity. For purposes of a conservative analysis, it should also be noted that the project trip generation did not account for any reductions due to alternative modes. (The small increment in vehicle volume on this segment could be less once accounting for these alternative modes reducing the project's impact.)

Mitigation Measure TRANS-3: Develop and implement a Transportation Demand Management (TDM) Plan that would discourage single occupant vehicle trips. The TDM Plan shall consist of the following measures:

- Participate with other businesses and landowners in the County Connection bus line to support the provision of local commuter service to and from the BART station and the project site on Route 91X;
- Provide a minimum of 10 designated parking spaces for carpools and/or electric vehicles. Install conduit necessary to facilitate potential future charging station(s) in accordance with applicable City requirements; and
- Provide designated bicycle parking and storage, as well as lockers, and showers/changing facilities for project employees as well as additional bicycle parking throughout the project site in accordance with applicable City requirements. (SU)

Implementation of Mitigation Measure TRANS-3 may mitigate this impact to a less-than-significant level since suburban centers have up to a 10 percent reduction in vehicle miles traveled (VMT) according to the Bay Area Air Quality Management District Transportation Demand Management Tool User's Guide as a result of a TDM plan. However, the project impact would remain significant and unavoidable because the effectiveness of the TDM Plan in reducing the number of project trips cannot be adequately quantified to ensure project impacts would be fully mitigated.

Near-Term Conditions Intersection Impacts. An intersection analysis of Near-Term and Near-Term Plus Project Conditions was performed to determine the potential traffic impacts of the proposed project in combination with existing traffic volumes and nearby developments that have been approved for construction but are not yet constructed and were not accounted for in the existing traffic counts.

The weekday and Saturday peak hour intersection turning movement volumes and lane configurations for Near-Term Conditions and Near-Term Plus Project Conditions were used to calculate the level of service and identify potential impacts on the identified intersections based on the previously described significance thresholds. The level of service results are summarized in Table 4.L-13. As shown in Table 4.L-13, the project would cause significant impacts to intersection LOS under Near-Term Conditions, as described below.

Table 4.L-13: Intersection Level of Service – Near-Term and Near-Term Plus Project Conditions

Intersection	LOS Standard	Near-Term									Near-Term Plus Project								
		AM Peak Hour			PM Peak Hour			Saturday Peak Hour			AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
		Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c
1. Diamond Boulevard and Concord Avenue	E	17.5	B	0.47	27.0	C	0.67	22.6	C	0.52	19.6	B	0.49	35.7	D	0.76	38.8	D	0.73
2. Diamond Boulevard and Burnett Avenue	E	32.9	C	0.40	35.4	D	0.58	31.3	C	0.57	32.0	C	0.42	35.7	D	0.63	35.4	D	0.68
3. Diamond Boulevard and Galaxy Way	E	7.2	A	0.14	11.6	B	0.20	7.9	A	0.19	9.4	A	0.16	14.3	B	0.37	15.1	B	0.60
4. Diamond Boulevard and Signalized Site Driveway	E	3.2	A	0.09	8.1	A	0.21	10.0	A	0.30	8.0	A	0.21	20.1	C	0.83	**149.3**	**F**	**2.27**
5. Diamond Boulevard and Willow Way	E	14.9	B	0.27	16.7	B	0.36	18.4	B	0.39	15.0	B	0.29	16.9	B	0.44	20.6	C	0.50
6. Diamond Boulevard and Willows Shopping Center	E	12.0	B	0.20	16.6	B	0.41	18.9	B	0.45	10.7	B	0.24	15.0	B	0.50	16.7	B	0.60
7. Diamond Boulevard and Willow Pass Road	E	18.6	B	0.53	42.4	D	0.72	33.7	C	0.76	21.1	C	0.58	64.6	E	0.87	71.4	E	1.08
8. Franquette Avenue and Willow Pass Road	E	17.5	B	0.52	38.4	D	0.80	11.1	B	0.42	17.6	B	0.53	38.5	D	0.82	11.2	B	0.46
9. Market Street and Willow Pass Road	E	36.9	D	0.78	38.6	D	0.73	34.0	C	0.57	37.6	D	0.79	37.7	D	0.74	32.7	C	0.61
10. Gateway Boulevard and Willow Pass Road	E	18.9	B	0.32	20.0	C	0.59	20.9	C	0.43	19.1	B	0.34	21.1	C	0.62	22.0	C	0.49
11.Galindo Street and Willow Pass Road	E	35.0	D	0.69	56.2	E	0.82	42.4	D	0.71	35.8	D	0.69	60.4	E	0.84	46.5	D	0.75
12. Port Chicago Highway and Willow Pass Road	E	28.3	C	0.77	20.5	C	0.65	21.0	C	0.46	28.4	C	0.77	20.4	C	0.66	20.5	C	0.47
13. Port Chicago Highway and Concord Boulevard	E	35.1	D	0.78	19.1	B	0.49	18.0	B	0.42	35.9	D	0.78	19.3	B	0.51	18.4	B	0.44
14. Galindo Street and Concord Boulevard	E	42.7	D	0.78	32.2	C	0.73	27.7	C	0.67	43.4	D	0.78	33.1	C	0.74	28.9	C	0.70
15. Galindo Street and Clayton Road	E	19.7	B	0.54	42.4	D	0.72	18.9	B	0.51	20.2	C	0.55	48.4	D	0.74	20.4	C	0.55
16. Gateway Boulevard and Clayton Road	E	9.0	A	0.26	18.2	B	0.36	12.1	B	0.26	9.3	A	0.27	18.8	B	0.37	13.4	B	0.27
17. Detroit Avenue and Clayton Road	E	15.1	B	0.39	17.1	B	0.49	17.6	B	0.47	15.2	B	0.40	17.3	B	0.49	18.0	B	0.49
18. Pine Street and Clayton Road	E	15.1	B	0.39	16.2	B	0.46	15.3	B	0.36	15.2	B	0.39	16.5	B	0.47	15.9	B	0.37
19. Market Street and Clayton Road	E	30.9	C	0.79	31.1	C	0.76	27.3	C	0.71	31.7	C	0.80	32.0	C	0.77	28.4	C	0.74
20. Galindo Street and Cowell Road	E	30.2	C	0.62	36.5	D	0.70	30.7	C	0.59	30.3	C	0.63	36.9	D	0.71	31.3	C	0.60
21. SR-242 NB On-Ramp and Concord Avenue	E	16.1	B	0.69	33.6	C	0.88	21.6	C	0.68	16.0	B	0.69	33.7	C	0.89	21.6	C	0.68

Intersection	LOS Standard	Near-Term									Near-Term Plus Project								
		AM Peak Hour			PM Peak Hour			Saturday Peak Hour			AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
		Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c
22. SR-242 SB Off-Ramp and Concord Avenue	E	58.4	E	0.82	56.8	E	0.94	32.1	C	0.70	62.6	E	0.83	61.5	E	0.96	36.3	D	0.74
23. John Glenn Drive and Concord Avenue	E	16.2	B	0.43	29.4	C	0.66	24.2	C	0.56	16.8	B	0.45	31.3	C	0.70	27.3	C	0.64
24. Meridian Park Boulevard and Concord Avenue	E	14.1	B	0.48	19.6	B	0.57	18.4	B	0.47	14.1	B	0.49	19.6	B	0.58	18.1	B	0.50
25. Pacheco Boulevard and Concord Avenue	E	22.7	C	0.75	33.0	C	0.82	18.6	B	0.67	22.8	C	0.75	33.4	C	0.82	18.8	B	0.67
26. Pacheco Boulevard and North Buchanan Circle	D	29.9	D	0.28	52.7	F	0.37	22.9	C	0.18	30.0	D	0.28	53.0	F	0.37	23.1	C	0.18
27. Pacheco Boulevard and Center Avenue	D	43.3	D	0.68	57.2	E	0.85	29.5	C	0.58	43.7	D	0.69	59.4	E	0.87	30.8	C	0.62
28. Contra Costa Boulevard and 2nd Avenue	D	11.7	B	0.63	13.9	B	0.62	14.5	B	0.55	11.7	B	0.63	14.0	B	0.63	14.6	B	0.57
29. Contra Costa Boulevard and I-680 SB Ramps	E	62.5	E	0.73	51.6	D	0.79	56.9	E	0.85	68.8	E	0.75	55.6	E	0.82	62.4	E	0.92
30. Contra Costa Boulevard and Concord Avenue	E	48.5	D	0.83	56.3	E	0.90	61.3	E	0.83	55.5	E	0.83	70.7	E	0.95	**90.3**	**F**	**0.92**
31. Contra Costa Boulevard and Golf Club Road	D	68.9	E	0.93	51.4	D	0.82	75.3	E	0.90	71.5	E	0.94	52.7	D	0.83	81.7	F	0.92
32. Contra Costa Boulevard and Viking Drive	D	21.6	C	0.53	28.7	C	0.49	20.9	C	0.48	21.6	C	0.53	28.8	C	0.49	21.7	C	0.48
33. Contra Costa Boulevard and Taylor Boulevard	E	34.5	C	0.70	39.2	D	0.69	28.1	C	0.55	34.9	C	0.70	40.1	D	0.70	29.6	C	0.57
34. Sunvalley Mall and Sunvalley Boulevard	E	4.2	A	0.62	7.3	A	0.60	11.7	B	0.72	4.3	A	0.62	7.7	A	0.61	12.8	B	0.75
35. I-680 SB Off-Ramp and Sunvalley Boulevard	E	37.0	D	0.63	27.5	C	0.57	11.5	B	0.53	36.7	D	0.64	27.0	C	0.58	11.4	B	0.56
36. I-680 NB Ramps and Willow Pass Road	E	26.1	C	0.71	21.9	C	0.35	34.1	C	0.65	26.3	C	0.73	23.3	C	0.36	33.6	C	0.72

Note: **Bold shading** represents a significant impact.
Source: Kittelson & Associates, Inc., April 2016.

Impact TRANS-4: The additional traffic generated by the proposed project would result in unacceptable operations at the intersection of Diamond Boulevard and Signalized Site Driveway (#4) during the Saturday peak hour under Near-Term Conditions. (S)

As the main access to the project site is from Diamond Boulevard, the project would account for approximately 39 percent of the traffic using this intersection. The addition of this traffic, especially to the northbound left-turn movements entering the site, would result in a change from LOS A to LOS F.

Mitigation Measure TRANS-4: Implement Mitigation Measure TRAF-1. (LTS)

Implementation of Mitigation Measure TRANS-4 would improve the operation of this intersection to LOS D during the Saturday peak hour and would decrease the project impacts to less than significant.

Impact TRANS-5: The additional traffic generated by the proposed project would result in unacceptable operations at the intersection of Contra Costa Boulevard and Concord Avenue (#30) during the Saturday peak hour under Near-Term Conditions. (S)

Traffic coming from I-680 southbound and origins north of Concord Avenue would increase the number of southbound left turns at this intersection. The addition of this traffic and other movements at the intersection would result in a change from LOS E to LOS F.

Mitigation Measure TRANS-5: Implement a signal timing improvement project along Contra Costa Boulevard within the signal's coordination group (between I-680 SB Off-Ramp/Target Intersection and Taylor Boulevard) by funding actual cost. In order to maintain signal coordination, synchronization hardware shall be installed at the intersections of I-680 SB Off-Ramp/Target and Concord Avenue on Contra Costa Boulevard by funding actual cost. The City of Concord is to work with the City of Pleasant Hill to implement the signal timing improvement project and install synchronization hardware as necessary. (SU)

Implementation of Mitigation Measure TRANS-5 would improve the operation of this intersection to LOS E during the Saturday peak hour and reduce the project impacts to less than significant. The City of Pleasant Hill was consulted regarding this proposed mitigation measure and has committed to working with the City of Concord and Caltrans to its implementation[6]. However, because this intersection is under the jurisdiction of Caltrans, the implementation and timing of the mitigation measures are not under the City's control. Therefore, this impact is considered to remain significant and unavoidable.

Cumulative Conditions Intersection Impacts. The Cumulative Conditions traffic volumes with the proposed project were estimated by adding the traffic generated by the proposed project to the Cumulative Conditions traffic volumes.

The weekday and Saturday peak hour intersection turning movement volumes and lane configurations for Cumulative Conditions and Cumulative Plus Project Conditions were used to calculate the level of

[6] Eric Hu, P.E. 2016. *RE: Veranda Shopping Center Traffic Mitigation Concurrence*. April 19.

service and identify potential impacts on the identified intersections based on the previously described significance thresholds. The level of service results are summarized in Table 4.L-14. As shown in Table 4.L-14, the project would result in significant impacts to intersection LOS under Cumulative Conditions as described below.

Table 4.L-14: Intersection Level of Service – Cumulative and Cumulative Plus Project Conditions

Intersection	LOS Standard	Cumulative									Cumulative Plus Project								
		AM Peak Hour			PM Peak Hour			Saturday Peak Hour			AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
		Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c
1. Diamond Boulevard and Concord Avenue	E	18.3	B	0.48	30.3	C	0.72	24.8	C	0.55	19.9	B	0.50	36.3	D	0.80	34.0	C	0.71
2. Diamond Boulevard and Burnett Avenue	E	58.7	E	0.67	53.4	D	0.70	43.1	D	0.68	65.4	E	0.69	65.5	E	0.74	67.0	E	0.82
3. Diamond Boulevard and Galaxy Way	E	5.6	A	0.16	9.9	A	0.33	6.8	A	0.29	7.8	A	0.18	13.5	B	0.42	14.5	B	0.62
4. Diamond Boulevard and Signalized Site Driveway	E	2.8	A	0.14	5.8	A	0.30	6.9	A	0.33	8.2	A	0.31	22.5	C	0.95	**160.5**	**F**	**2.62**
5. Diamond Boulevard and Willow Way	E	15.4	B	0.31	17.1	B	0.47	19.5	B	0.48	15.7	B	0.35	18.3	B	0.55	24.3	C	0.62
6. Diamond Boulevard and Willows Shopping Center	E	10.2	B	0.22	14.6	B	0.41	16.7	B	0.44	9.2	A	0.25	13.9	B	0.51	16.3	B	0.61
7. Diamond Boulevard and Willow Pass Road	E	25.0	C	0.61	56.4	E	0.78	46.8	D	0.87	28.2	C	0.66	79.3	E	1.01	**89.4**	**F**	**1.17**
8. Franquette Avenue and Willow Pass Road	E	22.8	C	0.57	35.9	D	0.80	12.4	B	0.42	23.4	C	0.58	37.5	D	0.83	13.3	B	0.48
9. Market Street and Willow Pass Road	E	39.1	D	0.81	49.8	D	0.91	49.7	D	0.68	40.6	D	0.82	48.4	D	0.92	43.0	D	0.71
10. Gateway Boulevard and Willow Pass Road	E	20.3	C	0.37	21.4	C	0.61	21.7	C	0.44	20.4	C	0.38	22.5	C	0.64	22.8	C	0.50
11.Galindo Street and Willow Pass Road	E	35.1	D	0.70	62.2	E	0.91	62.4	E	0.89	35.9	D	0.71	66.4	E	0.92	67.5	E	0.90
12. Port Chicago Highway and Willow Pass Road	E	117.3	F	1.00	26.4	C	0.76	24.2	C	0.60	117.1	F	1.00	26.5	C	0.77	24.0	C	0.61
13. Port Chicago Highway and Concord Boulevard	E	128.8	F	1.06	25.0	C	0.65	18.4	B	0.48	130.5	F	1.06	24.6	C	0.66	18.9	B	0.51
14. Galindo Street and Concord Boulevard	E	43.4	D	0.77	46.8	D	0.85	40.9	D	0.85	44.2	D	0.78	48.5	D	0.86	43.9	D	0.89
15. Galindo Street and Clayton Road	E	18.6	B	0.53	43.3	D	0.81	18.6	B	0.55	19.1	B	0.53	49.0	D	0.82	20.2	C	0.59
16. Gateway Boulevard and Clayton Road	E	8.4	A	0.29	18.2	B	0.42	11.8	B	0.30	8.8	A	0.29	18.8	B	0.43	13.4	B	0.31
17. Detroit Avenue and Clayton Road	E	16.0	B	0.44	18.6	B	0.62	18.4	B	0.59	16.1	B	0.44	18.8	B	0.62	18.8	B	0.60
18. Pine Street and Clayton Road	E	15.3	B	0.50	15.6	B	0.55	14.4	B	0.41	15.5	B	0.51	15.9	B	0.56	15.0	B	0.42
19. Market Street and Clayton Road	E	111.1	F	0.98	121.3	F	1.09	66.4	E	0.96	112.2	F	0.99	123.7	F	1.10	69.0	E	0.97
20. Galindo Street and Cowell Road	E	32.9	C	0.70	39.5	D	0.75	32.5	C	0.67	33.0	C	0.70	40.2	D	0.76	33.4	C	0.69
21. SR-242 NB On-Ramp and Concord Avenue	E	16.0	B	0.73	50.3	D	0.99	22.3	C	0.76	16.0	B	0.73	51.0	D	1.00	22.3	C	0.76

Intersection	LOS Standard	Cumulative									Cumulative Plus Project								
		AM Peak Hour			PM Peak Hour			Saturday Peak Hour			AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
		Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c
22. SR-242 SB Off-Ramp and Concord Avenue	E	56.0	E	0.83	75.4	E	1.01	32.8	C	0.74	57.9	E	0.84	79.3	E	1.02	34.1	C	0.76
23. John Glenn Drive and Concord Avenue	E	20.0	C	0.52	41.1	D	0.79	29.7	C	0.66	20.4	C	0.53	43.1	D	0.82	32.3	C	0.71
24. Meridian Park Boulevard and Concord Avenue	E	13.0	B	0.46	27.3	C	0.65	22.3	C	0.54	13.0	B	0.47	27.5	C	0.66	22.3	C	0.55
25. Pacheco Boulevard and Concord Avenue	E	32.3	C	0.80	34.5	C	0.82	18.5	B	0.67	32.5	C	0.80	34.9	C	0.82	18.8	B	0.67
26. Pacheco Boulevard and North Buchanan Circle	D	75.9	F	0.53	68.1	F	0.44	23.1	C	0.18	76.2	F	0.53	68.6	F	0.44	23.3	C	0.18
27. Pacheco Boulevard and Center Avenue	D	50.5	D	0.85	69.0	E	0.92	28.5	C	0.57	52.0	D	0.86	70.7	E	0.93	29.8	C	0.60
28. Contra Costa Boulevard and 2nd Avenue	D	12.8	B	0.74	14.0	B	0.63	14.5	B	0.55	12.8	B	0.74	14.1	B	0.63	14.6	B	0.56
29. Contra Costa Boulevard and I-680 SB Ramps	E	134.6	F	0.84	64.5	E	0.84	51.6	D	0.80	137.9	F	0.85	76.1	E	0.87	67.8	E	0.87
30. Contra Costa Boulevard and Concord Avenue	E	49.8	D	0.88	64.3	E	0.91	60.3	E	0.83	51.0	D	0.88	79.7	E	0.96	**87.8**	**F**	**0.92**
31. Contra Costa Boulevard and Golf Club Road	D	57.3	E	0.89	61.6	E	0.87	78.3	E	0.92	58.9	E	0.90	63.2	E	0.88	84.9	F	0.94
32. Contra Costa Boulevard and Viking Drive	D	21.4	C	0.59	28.6	C	0.50	20.4	C	0.45	21.5	C	0.59	28.6	C	0.51	21.2	C	0.45
33. Contra Costa Boulevard and Taylor Boulevard	E	39.5	D	0.73	49.0	D	0.77	33.1	C	0.64	40.1	D	0.74	51.1	D	0.79	34.9	C	0.65
34. Sunvalley Mall and Sunvalley Boulevard	E	4.6	A	0.67	8.2	A	0.63	12.9	B	0.75	4.7	A	0.68	8.6	A	0.65	14.4	B	0.77
35. I-680 SB Off-Ramp and Sunvalley Boulevard	E	46.0	D	0.61	47.2	D	0.67	11.7	B	0.59	45.5	D	0.61	46.4	D	0.68	11.8	B	0.48
36. I-680 NB Ramps and Willow Pass Road	E	26.5	C	0.76	34.9	C	0.71	52.1	D	0.80	26.8	C	0.78	36.2	D	0.72	50.2	D	0.86

Note: **Bold shading** represents a significant impact.
Source: Kittelson & Associates, Inc., April 2016.

Impact TRANS-6: The additional traffic generated by the proposed project would result in unacceptable operations at the intersection of Diamond Boulevard and Signalized Site Driveway (#4) during the Saturday peak hour under Cumulative Conditions. (S)

As the main access to the project site is from Diamond Boulevard, the project would account for approximately 39 percent of the traffic using this intersection. The addition of this traffic, especially to the northbound left-turn movements entering the site, would result in a change from LOS A to LOS F.

Mitigation Measure TRANS-6: Implement Mitigation Measure TRANS-1. (LTS)

Implementation of Mitigation Measure TRANS-6 would improve the operation of this intersection to LOS D during the Saturday peak hour and would reduce the project impacts to less than significant.

Impact TRANS-7: The additional traffic generated by the proposed project would result in unacceptable operations at the intersection of Diamond Boulevard and Willow Pass Road (#7) during the Saturday peak hour under Cumulative Conditions. (S)

This intersection would provide one of the primary routes into the project site and vicinity and the project would account for approximately 15 percent of the traffic using this intersection on a Saturday. The addition of this traffic would result in a change from LOS D to LOS F.

Mitigation Measure TRANS-7: Implement a signal timing improvement project along Willow Pass Road within the signal's coordination group (between Diamond Boulevard and Franquette Avenue) by funding actual cost. (LTS)

Implementation of Mitigation Measure TRANS-7 would improve the operation of this intersection to LOS E during the Saturday peak hour and reduce the project impacts to less than significant.

Impact TRANS-8: The additional traffic generated by the proposed project would result in unacceptable operations at the intersection of Contra Costa Boulevard and Concord Avenue (#30) during the Saturday peak hour under Cumulative Conditions. (S)

Traffic coming from I-680 southbound and origins north of Concord Avenue would increase the number of southbound left turns at this intersection. The addition of this traffic and other movements at the intersection would result in a change from LOS E to LOS F.

Mitigation Measure TRANS-8: Implement Mitigation Measure TRANS-5. (SU)

Implementation of Mitigation Measure TRANS-8 would improve the operation of this intersection to LOS E during the Saturday peak hour and reduce the project impacts to less than significant. However, because this intersection is under the jurisdiction of Caltrans, the implementation and timing of the Mitigation Measures are not under the City's control. Therefore, for purposes of a conservative analysis, this impact is considered to remain significant and unavoidable.

Cumulative Plus Project Conditions Freeway Impacts. Freeway analysis of Cumulative and Cumulative Plus Project Conditions was performed to determine the potential traffic impacts of

the proposed project if it were built and operating under cumulative traffic conditions. These analysis conditions are discussed below.

Impact TRANS-9: The proposed project would contribute to the SR-242 Northbound segment north of Concord Avenue operating below the LOS standard during the PM peak hour under Cumulative Conditions. (S)

This freeway segment operates below the LOS standard at LOS F without the project and the project would increase the traffic volume by 68 trips which is approximately 1 percent of the segment's capacity. Using a conservative analysis, the project trip generation did not account for any reductions due to alternative modes. (The small increment in vehicle volume on this segment could be less once accounting for these alternative modes reducing the project's impact.)

Mitigation Measure TRANS-9: Implement Mitigation Measure TRANS-3. (SU)

Implementation of Mitigation Measure TRANS-9 may mitigate this impact to a less-than-significant level since suburban centers can have up to a 10 percent reduction in VMT according to the Bay Area Air Quality Management District Transportation Demand Management Tool User's Guide as a result of a TDM plan. However, the project impact would remain significant and unavoidable because the effectiveness of the TDM Plan in reducing the number of project trips cannot be adequately quantified to ensure project impacts would be fully mitigated.

Impact TRANS-10: The proposed project would contribute to the SR-242 southbound segment at the off-ramp to Concord Avenue operating below the LOS standard during the AM peak hour under Cumulative Conditions. (S)

This freeway segment currently operates at LOS F and the project would increase the traffic volume by 74 trips which is approximately 1 percent of the segment's capacity. Using a conservative analysis, the project trip generation did not account for any reductions due to alternative modes. (The small increment in vehicle volume on this segment could be less once accounting for these alternative modes reducing the project's impact.)

Mitigation Measure TRANS-10: Implement Mitigation Measure TRANS-3. (SU)

Implementation of Mitigation Measure TRANS-10 may mitigate this impact to a less-than-significant level since suburban centers can have up to a 10 percent reduction in VMT according to the Bay Area Air Quality Management District Transportation Demand Management Tool User's Guide as a result of a TDM plan. However, the project impact would remain significant and unavoidable because the effectiveness of the TDM Plan in reducing the number of project trips cannot be adequately quantified to ensure project impacts would be fully mitigated.

(2) Increase Hazards Due to a Design Feature. The project's conceptual site plan was reviewed to assess potential hazards due to project design and potential incompatible use. The proposed land uses are generally compatible with existing uses in the project vicinity and would not result in undue hazards. Therefore, this assessment focuses on potential hazards due to design. The primary design topic considered was:

- Project's impact on queue length at the 36 analysis intersections and four site driveways.

Queue Length Analysis. While the length of vehicle queues are not considered as a measure of effectiveness when analyzing intersection operations, excessive queues would have the potential to present a safety concern. The City has no formally-adopted criterion that establishes a threshold of significance for vehicle queues at intersections. However, a vehicle queue that overflows the available storage for the left-or right-turn pocket blocking the adjacent travel lane or a queue that extends into an upstream signalized intersection blocking through traffic may be considered a hazard.

Impact TRANS-11: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at Diamond Boulevard and Concord Avenue (#1) during the PM peak hour under Existing and Near-Term Conditions. (S)

This intersection would provide primary access to Concord Avenue from the project site. The increase in northbound left turning vehicles would cause the queues to exceed turn storage by one vehicle in both the Existing and Near-Term Conditions.

> Mitigation Measure TRANS-11: Implement a signal timing project at this intersection by funding actual cost. Modifications at this signal may require signal retiming at other intersections within the signal's coordination group (along Diamond Boulevard and Concord Avenue between Burnett Avenue and Market Street) in order to maintain signal coordination. If signal timing changes at other intersections within the signal's coordination group are required to maintain signal coordination, it shall be funded at actual cost. (LTS)

Implementation of Mitigation Measure TRANS-11 would reduce the affected queue during the PM peak hour and reduce the project impacts to less than significant.

Impact TRANS-12: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at Diamond Boulevard and Burnett Avenue (#2) during the Saturday peak hour under Existing and Cumulative Conditions. (S)

This intersection would provide primary access to the project site from I-680 Northbound. The increase in traffic from the project would result in the following queues exceeding available storage:

- Southbound right turn lane to exceed storage by 2 vehicles during the Saturday peak hour under Existing Conditions.
- Eastbound right turn lane to exceed storage by 2 vehicles during the Saturday peak hour under Cumulative Conditions.

> Mitigation Measure TRANS-12: Implement a signal timing project at this intersection by funding actual cost. Modifications at this signal may require signal retiming at other intersections within the signal's coordination group (along Diamond Boulevard and Concord Avenue between Burnett Avenue and Market Street) in order to maintain signal coordination. If signal timing changes at other intersections within the signal's coordination group are required to maintain signal coordination, it shall be funded at actual cost. (LTS)

Implementation of Mitigation Measure TRANS-12 would reduce the affected queue during the Saturday peak hour and reduce the project impacts to less than significant.

Impact TRANS-13: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at Diamond Boulevard and Galaxy Way (#3) during the PM and Saturday peak hours under Existing, Near-Term, and Cumulative Conditions. (S)

This intersection would provide access to the two unsignalized site access driveways on Galaxy Way. The increased traffic volume from the project would result in the following queues exceeding available storage:

- Northbound left turn lane to exceed storage by 1 vehicle and the eastbound left turn lane to exceed storage by 5 vehicles during the PM peak hour under Existing Conditions.
- Northbound left turn lane to exceed storage by 4 vehicles and the eastbound left turn lane to exceed storage by 7 vehicles during the Saturday peak hour under Existing Conditions.
- Northbound left turn lane to exceed storage by 1 vehicle and the eastbound left turn lane to exceed storage by 5 vehicles during the PM peak hour under Near-Term Conditions.
- Northbound left turn lane to exceed storage by 4 vehicles and the eastbound left turn lane to exceed storage by 7 vehicles during the Saturday peak hour under Near-Term, Conditions.
- Northbound left turn lane to exceed storage by 1 vehicle and the eastbound left turn lane to exceed storage by 4 vehicles during the PM peak hour under Cumulative Conditions.
- Northbound left turn lane to exceed storage by 5 vehicles and the eastbound left turn lane to exceed storage by 6 vehicles during the Saturday peak hour under Cumulative Conditions.

Mitigation Measure TRANS-13: Implement the following geometric and signal timing movements:

- Extend the eastbound left turn lane to at least 165 feet;
- Extend the northbound left turn lane to at least 225 feet;
- Extend the southbound left turn lane to at least 100 feet;
- Modify intersection traffic signal design to accommodate an 8-phase traffic signal. All left turns are to be converted from permissive signal phasing to protected signal phasing;
- Modify the eastbound approach to have two left turn lanes and a shared through and right lane; and
- Implement Mitigation Measure TRANS-1, specifically: Implement a signal timing improvement project along Diamond Boulevard within the signal's coordination group (between the Willows Shopping Center access intersection and Galaxy Way) by funding actual cost. (LTS)

Implementation of Mitigation Measure TRANS-13 would reduce the affected queue at the impacted movements and reduce the project impacts to less than significant.

Impact TRANS-14: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at Diamond Boulevard and Signalized Site Driveway (#4)

during the PM and Saturday peak hours under Existing, Near-Term, and Cumulative Conditions. (S)

This intersection would provide primary access to the project site from Diamond Boulevard. The increased traffic volume from the project would result in the following queues exceeding available storage:

- Northbound left turn lane to exceed storage by 9 vehicles during the PM peak hour under Existing Conditions.
- Northbound left turn lane to exceed storage by 78 vehicles, the eastbound through lane to exceed storage by 5 vehicles, the eastbound right to exceed storage by 2 vehicles, and the westbound through to exceed storage by 5 vehicles during the Saturday peak hour under Existing Conditions.
- Northbound left turn lane to exceed storage by 9 vehicles during the PM peak hour under Near-Term Conditions.
- Northbound left turn lane to exceed storage by 79 vehicles, the eastbound through lane and eastbound right lane to exceed storage by 2 vehicles, and the westbound through to exceed storage by 10 vehicles during the Saturday peak hour under Near-Term Conditions.
- Northbound left turn lane to exceed storage by 13 vehicles during the PM peak hour under Cumulative Conditions.
- Northbound left turn lane to exceed storage by 91 vehicles, the eastbound through movement to exceed storage by 1 vehicle, the eastbound right to exceed storage by 3 vehicles, and the westbound through to exceed storage by 6 vehicles during the Saturday peak hour under Cumulative Conditions.

Mitigation Measure TRANS-14: Implement Mitigation Measure TRANS-1. (LTS)

Implementation of Mitigation Measure TRANS-14 would reduce the affected queue at the impacted movements and reduce the project impacts to less than significant.

Impact TRANS-15: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at Diamond Boulevard and Willow Way (#5) during the PM and Saturday peak hours under Cumulative Conditions. (S)

Diamond Boulevard would provide access to the project site and traffic must travel through this intersection to reach the project. This increased traffic volume would cause the northbound through movement to exceed available storage by 2 vehicles during the PM peak hour and 8 vehicles during the Saturday peak hour.

Mitigation Measure TRANS-15: Implement one of the following improvements:

- Modify intersection traffic signal design and geometrics for an 8-phase signal to include the following:
  - Convert all left turns from permissive signal phasing to protected signal phasing;
  - Modify the westbound approach to have two exclusive left lanes and a shared right and through lane;

  - Modify the eastbound approach to have one exclusive left lane and a shared right and through lane; and
  - Implement Mitigation Measure TRANS-1, specifically: Implement a signal timing improvement project along Diamond Boulevard within the signal's coordination group (between the Willows Shopping Center access intersection and Galaxy Way) by funding actual cost.
- Modify intersection traffic signal design and geometrics for a split phase signal to include the following:
  - Convert the northbound and southbound left turn lanes from permissive signal phasing to protected signal phasing;
  - Provide separate eastbound and westbound signal phases (split phase);
  - Modify the westbound approach to have an exclusive left lane, a shared left and through lane, and an exclusive right lane; and
  - Implement Mitigation Measure TRANS-1, specifically: Implement a signal timing improvement project along Diamond Boulevard within the signal's coordination group (between the Willows Shopping Center access intersection and Galaxy Way) by funding actual cost. (LTS)

Implementation of Mitigation Measure TRANS-15 would reduce the affected queue at the impacted movements and reduce the project impacts to less than significant.

Impact TRANS-16: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at Diamond Boulevard and Willows Shopping Center (#6) during the Saturday peak hour under Cumulative Conditions. (S)

Diamond Boulevard would provide access to the project site for vehicles which must travel through this intersection to reach the project. This increased traffic volume would cause the southbound through movement to exceed available storage by 1 vehicle.

> Mitigation Measure TRANS-16: Implement Mitigation Measure TRANS-1, specifically: Implement a signal timing improvement project along Diamond Boulevard within the signal's coordination group (between the Willows Shopping Center access intersection and Galaxy Way) by funding actual cost. (LTS)

Implementation of Mitigation Measure TRANS-16 would reduce the affected queue at the impacted movements and reduce the project impacts to less than significant.

Impact TRANS-17: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at Market Street and Willow Pass Road (#9) during the Saturday peak hour under Near-Term Conditions. (S)

This intersection would connect the project with central Concord near Todos Santos Plaza. The increased traffic volume would cause the northbound left turn lane to exceed the available turn storage by one vehicle.

Mitigation Measure TRANS-17: Implement a signal timing project at this intersection by funding actual cost. Modifications at this signal may require signal retiming at other intersections within the signal's coordination group (along Willow Pass Road and Clayton Road between Market Street and Galindo Street and along Concord Avenue between Harrison/Bonifacio Street and Laguna Street) in order to maintain signal coordination. If signal timing changes at other intersections within the signal's coordination group are required to maintain signal coordination, it shall be funded at actual cost. (LTS)

Implementation of Mitigation Measure TRANS-17 would reduce the affected queue at the impacted movements and reduce the project impacts to less than significant.

Impact TRANS-18: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at Galindo Street and Willow Pass Road (#11) during the Saturday peak hour under Existing Conditions. (S)

This intersection would connect the project with central Concord near Todos Santos Plaza. The increased traffic volume would cause the northbound left turn lane to exceed the available turn storage by one vehicle.

Mitigation Measure TRANS-18: Implement a signal timing improvement project at this intersection by funding actual cost. Modifications at this signal may require signal retiming at other intersections within the signal's coordination group (along Willow Pass Road and Clayton Road between Market Street and Galindo Street and along Concord Avenue between Harrison/Bonifacio Street and Laguna Street) in order to maintain signal coordination. If signal timing changes at other intersections within the signal's coordination group are required to maintain signal coordination, it shall be funded at actual cost. (LTS)

Implementation of Mitigation Measure TRANS-18 would reduce the affected queue at the impacted movements and reduce the project impacts to less than significant.

Impact TRANS-19: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at Contra Costa Boulevard and I-680 Southbound Ramps (#29) during the AM peak hour under Existing Conditions and the PM peak hour during Cumulative Conditions. (S)

Vehicles traveling along I-680 Southbound would access the project by exiting the freeway at this location. The increased traffic volumes exiting the freeway would cause:

- Westbound left turn lane to exceed storage by 1 vehicle during the AM peak hour under Existing Conditions.
- Westbound left turn lane to exceed storage by 1 vehicle during the AM peak hour under Near-Term Conditions.
- Westbound left turn lane to exceed storage by 1 vehicle during the PM peak hour under Cumulative Conditions.

Mitigation Measure TRANS-19: Implement Mitigation Measure TRANS-5. (SU)

Implementation of Mitigation Measure TRANS-19 would reduce the affected queue at the impacted movements and reduce the project impacts to less than significant. However, because this intersection is under the jurisdiction of Caltrans, the implementation and timing of the mitigation measures are not under the City's control. Therefore, for purposes of a conservative analysis, this impact is considered to remain significant and unavoidable.

Impact TRANS-20: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at Contra Costa Boulevard and Concord Avenue (#30) during the AM peak hour under Existing Conditions. (S)

This intersection would provide access between I-680 Southbound off-ramps, located one intersection north, and the project site. The project's increase to traffic volume would result in the southbound left turn lane exceeding available queue storage by three vehicles.

> Mitigation Measure TRANS-20: Implement Mitigation Measure TRANS-5. (SU)

Implementation of Mitigation Measure TRANS-20 would reduce the affected queue at the impacted movements and reduce the project impacts to less than significant. However, because this intersection is under the jurisdiction of Caltrans, the implementation and timing of the mitigation measures are not under the City's control. Therefore, for purposes of a conservative analysis, this impact is considered to remain significant and unavoidable.

Impact TRANS-21: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at I-680 Northbound Ramps and Willow Pass Road (#36) during the AM peak hour under Existing Conditions and Near-Term Conditions. (S)

Vehicles traveling between the Sunvalley Mall and the project would travel through this intersection. The increased traffic volumes caused by the project would result in a queue that would exceed available storage by one vehicle under both the Existing and Near-Term Conditions.

> Mitigation Measure TRANS-21: Implement a signal timing improvement project at this intersection by funding actual cost. The City of Concord is to work with Caltrans to implement the signal timing project as necessary. (SU)

Implementation of Mitigation Measure TRANS-21 would reduce the affected queue at the impacted movements and reduce the project impacts to less than significant. However, because this intersection is under the jurisdiction of Caltrans, the implementation and timing of the mitigation measures are not under the City's control. Therefore, for purposes of a conservative analysis, this impact is considered to remain significant and unavoidable.

Impact TRANS-22: The addition of project traffic would result in westbound left turn queue at Galaxy Way and the eastern Project Driveway which does not have left turn queue storage during the AM, PM, and Saturday peak hours for the Existing, Near-Term, and Cumulative Conditions. (S)

A left turn pocket does not exist for westbound left turns into the project site from Galaxy Way. Therefore, the increased traffic caused by the project would not have a dedicated lane for queue storage.

> Mitigation Measure TRANS-22: Build a left turn lane for the westbound approach with queue storage of at least 50 feet. (LTS)

Implementation of Mitigation Measure TRANS-22 would provide sufficient queue storage to accommodate the 95th percentile westbound left turn queue and reduce the project impacts to less than significant.

Impact TRANS-23: The addition of project traffic would result in westbound left turn queue at Galaxy Way and the western Project Driveway which does not have left turn queue storage during the AM, PM, and Saturday peak hours for the Existing, Near-Term, and Cumulative Conditions. (S)

A left turn pocket does not exist for westbound left turns into the project site from Galaxy Way. Therefore, the increased traffic caused by the project would not have a dedicated lane for queue storage.

> Mitigation Measure TRANS-23: Build a left turn lane for the westbound approach with queue storage of at least 50 feet. (LTS)

Implementation of Mitigation Measure TRANS-23 would provide sufficient queue storage to accommodate the 95th percentile westbound left turn queue and reduce the project impacts to less than significant.

Average Arterial Speeds. The findings for this MTSO analysis are shown in Appendix I for the AM and PM peak hours, respectively. The project would not result in an average speed of less than 15 mph at most analysis segments. However, the following two segments are projected to operate below the 15 mph threshold and represent significant impacts:

- Southbound Contra Costa Boulevard between Chilpancingo Parkway to Taylor Boulevard is projected to deteriorate below an average arterial speed of 15 mph (15 mph to 14 mph) during the AM peak hour under Cumulative Conditions.
- Northbound Contra Costa Boulevard between 2nd Avenue to Chilpancingo Parkway operates below the 15 mph threshold under Cumulative Conditions. The addition of project traffic further reduces the average arterial speed from 14 mph to 13 mph.

Impact TRANS-24: The additional traffic generated by the project would result in unacceptable average arterial speeds on southbound Contra Costa Boulevard between Chilpancingo Parkway and Taylor Boulevard during the AM peak hour under Cumulative Conditions. (S)

The additional traffic from the project would cause the overall average arterial speed to drop from 15.1 miles per hour (mph) to 14.1 mph.

Mitigation Measure TRANS-24: Implement Mitigation Measures TRANS-3 and TRANS-5. (SU)

Implementation of Mitigation Measure TRANS-24 may mitigate this impact to a less-than-significant by reducing the number of trips added to Contra Costa Boulevard and improving the average arterial speed. However, the project impact is considered to remain significant and unavoidable because of the effectiveness of the TDM Plan in reducing the number of project trips and improvements to average arterial speed under Cumulative Conditions cannot be adequately quantified to ensure project impacts would be fully mitigated. In addition, because the I-680 SB Off-Ramp/Target and Concord Avenue and Concord Costa Boulevard are under the jurisdiction of Caltrans, the implementation and timing of the mitigation measure is not under the City's control. Therefore this impact is considered to remain significant and unavoidable.

Impact TRANS-25: The additional traffic generated by the project would contribute to unacceptable average arterial speeds on northbound Contra Costa Boulevard between 2nd Avenue to Chilpancingo Parkway during the PM peak hour under Cumulative Conditions. (S)

The additional traffic from the project would further decrease the average arterial speed form 13.8 mph to 13.5 mph of this segment which is already operating below the 15 mph threshold.

Mitigation Measure TRANS-25: Implement Mitigation Measures TRANS-2, TRANS-3 and TRANS-5. (SU)

Implementation of Mitigation Measure TRANS-25 may mitigate this impact to a less-than-significant by reducing the number of trips added to Contra Costa Boulevard and improving the average arterial speed. However, the effectiveness of the TDM Plan in reducing the number of project trips and improvements to average arterial speed under cumulative conditions cannot be adequately quantified to ensure project impacts would be fully mitigated. Also, the intersection of Pacheco Boulevard and Center Avenue is under the jurisdiction of Contra Costa County, and the intersection of Contra Costa Boulevard and Concord Avenue is under the jurisdiction of Caltrans. Therefore, the implementation and timing of these mitigation measures is not under the City's control. Therefore, this impact is considered to remain significant and unavoidable.

(3) Alternative Modes of Transportation. Potential impacts associated with the project's effects on pedestrian, transit, and bicycle facilities are discussed below. As discussed, this impact would be less than significant.

Transit Impacts. The project site is served along Diamond Boulevard by three bus routes operated by The County Connection transit service. While the project plans to have ready access to transit options to facilitate increased usage, a reduction to the vehicular trip rate to account for transit trips was not assumed in order to provide a more conservative analysis. Based on a qualitative assessment of transit service in the area and a review of the operations impacts, the project is anticipated to decrease the performance of transit buses or safety of transit facilities resulting in the following potential impacts.

- Operations on Diamond Boulevard – The project is projected to significantly increase the number of vehicles on Diamond Boulevard which would increase delays at several of the analysis

intersections. The increased delay at these intersections would significantly decrease the performance of the transit lines resulting in a significant impact.

Impact TRANS-26: The project is projected to have a significant increase in the number of vehicles on Diamond Boulevard which increases delay at several of the intersections along Diamond Boulevard. This increase in delay along Diamond Boulevard could affect the performance of The County Connection bus routes using Diamond Boulevard. (S)

The existing weekday bus service on Diamond Boulevard would be negatively affected by the increased traffic on Diamond Boulevard resulting in increased travel times. While the current service does not provide weekend service, the traffic delays would be the greatest during the Saturday midday peak hour.

Mitigation Measure TRANS-26: Implement Mitigation Measures described in TRANS-1, TRANS-11, TRANS-12, TRANS-13, and TRANS-15. (LTS)

Implementation of Mitigation Measure TRANS-26 would reduce transit delay experienced along Diamond Boulevard and reduce the project's impact on transit performance to less than significant.

Pedestrian Facilities. A qualitative assessment was conducted to determine the project's potential impacts on pedestrians and pedestrian facilities. Based on this assessment, the following presents a potentially significant impact on the performance or safety of pedestrian facilities.

- Pedestrian Crosswalk – The increase in pedestrian activity expected as a result of the project may lead to more pedestrians crossing Diamond Boulevard to access destinations such as Seafood City located across the street. The intersection of Diamond Boulevard and the Signalized Site Driveway provides only one crosswalk across the north leg. The additional pedestrian activity caused by the project may increase jaywalking on the intersection leg without the crosswalk decreasing the safety of the intersection for pedestrians.

Impact TRANS-27: The increase in pedestrian activity expected as a result of the project may lead to more pedestrians crossing Diamond Boulevard to access destinations such as Seafood City located across the street. The intersection of Diamond Boulevard and the Signalized Site Driveway provides only one crosswalk across the north leg. (S)

Mitigation Measure TRANS-27: Implement Mitigation Measures described in TRANS-1, specifically:

- Install a crosswalk and pedestrian signal head across the southern leg of the intersection. (LTS)

Implementation of Mitigation Measure TRANS-27 would provide full pedestrian access across Diamond Boulevard and reduce the project's impact on transit performance to less than significant.

(4) Construction Impacts. Construction of the project would generate additional traffic from employee/vendor vehicles, trucks, and equipment transport to and from the site. Principal construction activities that are expected to generate traffic are described below. Assumptions underlying the evaluation are also briefly noted.

- Employee trips are based on the number of employees estimated to be on site during different points throughout the project. Each employee is assumed to drive to and from the site alone each day, and it is assumed that 20 percent of the workers leave and return to the site for various purposes during the day.
- Demolition export is based on the number of trucks required to remove all demolition material from the site.
- Construction import is based on the number of trucks required to deliver construction materials to the site, including building materials such as wood, steel, and masonry.
- Heavy equipment is based on the number of large construction vehicles expected to be used on-site over the course of the project's demolition, site preparation, and construction. Some of this equipment would be delivered to the site on large flatbed trucks since they are not "road authorized."

Each construction activity listed above would generate different volumes of traffic during different phases of the demolition and construction process. For example, the delivery and removal of heavy equipment to the project site would happen only a few times during the project duration. Construction-related traffic is expected to remain relatively consistent throughout the project. Demolition of the existing office buildings and existing improvements would occur for approximately 3 to 4 months and construction of the proposed project would occur for approximately 12 to 18 months (including demolition). Construction estimates for the proposed project were analyzed using the California Emissions Estimator Model version 2013.2.2 (CalEEMod)[7]. Precise details of construction activities are unknown at this time; therefore, default assumptions (e.g., construction fleet activities) from CalEEMod were used, for consistency with the construction emission assumptions of the air quality analysis.

Heavy Equipment. Heavy earth-moving equipment would be used throughout the demolition phase and for construction of the proposed buildings and improvements. Heavy equipment transport to and from the site could cause traffic impacts in the vicinity of the project site. Based on CalEEMod estimates, it is expected that there would be between six and nine pieces of heavy earth-moving equipment used during demolition and construction of the proposed project, depending on the construction phase. Each piece of heavy equipment would be transported to the project site prior to each construction phase.

Employees. The weekday work is expected to begin around 7:30 a.m. and end around 6:00 p.m., when noise generated by construction activities is permitted by the Municipal Code. Based on currently available information, the estimated construction worker arrival peak would occur between 6:00 and 7:00 a.m., and the departure peak would occur between 3:00 and 4:00 p.m. These peak hours are before the citywide commute peaks from 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.

Construction workers would generate vehicle trips during the demolition and construction period. It is estimated that during demolition and construction, between 30 and 250 daily trips would be generated per day by construction employees, depending on the construction phase. Demolition activities would

[7] LSA Associates, 2016. California Emissions Estimator Model version 2013.2.2. April.

require fewer workers, while construction of the proposed buildings and improvements would require the greatest number of workers.

Construction workers and deliveries, visits, and other activities would require parking during the demolition and construction period. Due to the large size of the project site and the abundant parking area, demolition and construction of the project would be phased such that construction parking demand is met using the existing on-site parking areas and areas planned for future parking. Therefore, the impacts of construction-related employee traffic and parking are considered less than significant.

Demolition Material. Demolition of the approximately 619,000 square feet of buildings, trees, and other existing improvements, would generate substantial volume of solid waste, which would be removed from the site for disposal and recycling. Removal of the demolition material would generate truck trips to area roadways during the demolition period. Based on CalEEMod estimates, the project would generate 5,630 truck trips for hauling waste offsite.

Construction Material Import. The project would also require the import of construction material, including raw materials for the building pads, the buildings, the parking area, and landscaping. It is estimated that during building construction, 122 roundtrip delivery truck trips would be generated per day. Delivery truck trips importing materials would contribute to traffic on area roadways during the construction period.

Impact TRANS-28: Demolition and construction activities associated with the proposed project would result in an increase in truck traffic to and from the site and could lead to unsafe conditions near the project site. (S)

Truck traffic during the construction period would lead to noticeable congestion in the vicinity of the site as well as the perception of decreased traffic safety, and the tracking of debris and mud from the site onto nearby streets. Implementation of the following mitigation measure would reduce this impact to a less-than-significant level.

> Mitigation Measure TRANS-28: As a condition of project approval, the project applicant shall submit a Traffic Control Plan for the City's approval prior to issuance of the grading and building permits. The Traffic Control Plan shall specifically designate travel routes for large vehicles and also stipulate that site access points be monitored and controlled by flaggers for large construction vehicle ingress and egress. Furthermore, the plan shall include provisions for regular street sweeping near the site. The following recommendations shall be considered in the plan:
>
> - Warning signs indicating frequent truck entry and exit should be posted on Diamond Boulevard and Galaxy Way.
> - Debris and mud on Diamond Boulevard, Galaxy Way, and other nearby streets caused by trucks shall be monitored daily and a street cleaning program shall be instituted.
> - Truck drivers shall be notified of and required to use the most direct route between the site and area freeways or other approved truck routes. (LTS)

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M. ECONOMIC IMPACT ANALYSIS

This section assesses the potential for the project to result in physical deterioration of other properties from economic impacts (often referred to as "urban decay") based on the findings of an economic impact study prepared for the project (ALH Economics, 2016), included in Appendix J.[1]

Information in this section is used to evaluate the potential impacts of the project with respect to the significance criteria set forth in the Impacts and Mitigation Measures section in accordance with the requirements of the California Environmental Quality Act (CEQA).

1. Setting

This section describes existing conditions on the project site and the existing condition of the market area that could be affected.

a. CEQA Framework for Economic Impact Analysis. Consideration of the economic impact of projects in CEQA environmental documents stems from CEQA Guidelines Section 15064(e), which states:

> "Economic and social changes resulting from a project shall not be treated as significant effects on the environment. Economic or social changes may be used, however, to determine that a physical change shall be regarded as a significant effect on the environment. Where a physical change is caused by economic or social effects of a project, the physical change may be regarded as a significant effect in the same manner as any other physical change resulting from the project. . ."

CEQA Guidelines Section 15131 also states that:

> "Economic or social information may be included in an EIR or may be presented in whatever form the agency desires. . . An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. . . The focus of the analysis shall be on the physical changes."

In *Bakersfield Citizens for Local Control v. City of Bakersfield* ((2004) 124 Cal. App.4th 1184), a key CEQA case on this topic, the California Court of Appeals determined that the CEQA Guidelines Section 15064 requires research and analysis of potential physical deterioration of other properties from economic impacts:

> "when the economic or social effects of a project cause a physical change, this change is to be regarded as a significant effect in the same manner as any other physical change resulting from the project."

In the *Bakersfield* case, two shopping centers were proposed. Emphasizing existing case law beginning with *Citizens Assn. for Sensible Development of Bishop Area v. County of Inyo* ((1985) 172

[1] ALH Economics, 2016. *The Veranda Shopping Center Economic Impact Analysis*. April 2016.

Cal.App.3d 151) in which the Court stated "the lead agency must consider whether the proposed shopping center will take business away from the downtown shopping area and thereby cause business closures and eventual physical deterioration of downtown Bishop," the *Bakersfield* Court held that:

> "when there is evidence suggesting that the economic and social effects caused by the proposed shopping center ultimately could result in urban decay or deterioration, then the lead agency is obligated to assess this indirect impact."

This EIR therefore evaluates the potential for the project to result in environmental effects due to the project's economic impacts on other commercial properties in the market area. In order to evaluate these potential impacts, as well as to provide other information with which to consider the project's merits (beyond what is required by CEQA), the City engaged ALH Urban and Regional Economics (ALH Economics) to prepare an economic impact analysis.[2] The methods used, data presented, and conclusions set forth in that report are summarized in this section to discuss the environmental effects of economic impacts. The complete report can be found in Appendix J.

b. Existing Condition of Market Area. The general economic condition of the market area is described below, separated into the commercial sectors proposed as part of the project, including retail, movie theater, and fitness center. The analysis assumes the same market area for the fitness center as for the retail.

The economic impact study defined market areas for the project for the purpose of analyzing the prospective economic impacts from development of the project. A market area is the geographic area from which the majority of the consumer demand is anticipated to originate. The market areas for the retail (including grocery store, restaurants, and fitness center) and movie theater components of the project are identified below. The fitness center is addressed separately because it is a use distinct from the project's planned retail space.

(1) Retail Market Area. The retail market area from which consumers are anticipated to originate includes the location of existing retail nodes where consumers can shop, with the boundary defined based on the location of upscale shopping opportunities and grocery shopping opportunities similar to that proposed for the project. The boundary of the project's retail market area was defined as including the cities of Concord, Pleasant Hill, and Martinez, as well as the unincorporated census designated places (CDPs) of Alhambra Valley, Clyde, Mountain View, Pacheco, Reliez Valley, and Vine Hill. Thus, this is the area from which the majority of project shoppers are anticipated to originate.

Retailers in Market Area. Numerous retail shopping districts and shopping centers are located in the retail market area and the neighboring city of Walnut Creek, ranging from upscale to discount shopping. The economic impact study identified large retail centers, or centers including anchor tenants that are anticipated to be represented at the project site, including grocery stores, movie theaters, and fitness facilities. Select shopping locations in Walnut Creek that are anticipated to be competitive with the project based on either their upscale orientation or proximity to the market area

[2] ALH Economics, 2016. *The Veranda Shopping Center Economic Impact Analysis*. April 2016.

boundary were also included in the analysis because they are anticipated to attract demand from the market area consumers. Below is a summary of the major retail centers in cities within the market area and also Walnut Creek.

- **Concord.** The Sunvalley Mall, located across the I-680 freeway from the project site, is the largest retail option in the City and in the market area overall. It features many national brand department stores such as Macy's, JC Penney, and Sears. The Willows Shopping Center, located immediately south of the project site, is a smaller shopping center with national retail tenants including Old Navy, REI, and several restaurants. Heritage Square, anchored by a Trader Joe's grocery store 0.8 mile from the project site, is the next closest shopping location. Other major shopping destinations include Park & Shop, located approximately 1 mile east of the project site, which includes grocery stores, restaurants, and apparel stores. Concord's Todos Santos Plaza, a focal point of the City's downtown area, is located approximately 1.3 miles east of the project site and includes the only indoor movie theater complex in the City. The other shopping centers in the City are largely grocery-anchored shopping centers. Overall, the existing City retail market is mid-market and does not have a strong upscale market orientation.
- **Pleasant Hill.** Pleasant Hill's downtown corridor, generally bounded by Boyd Road, Cleaveland Road, Gregory Lane, and Contra Costa Boulevard, is located approximately 2.2 miles south of the project site and consists of national retailers including Bed Bath & Beyond and Ross Dress for Less, and a movie theater. Many national retailers are located in the city's shopping centers, including Target, HomeGoods, Kohl's, Marshall's, and various grocery stores. Even though the city is heavily retailed, the city's retail base is largely mid-market and does not include many upscale shopping opportunities. Pleasant Hill's downtown corridor is the closest to upscale shopping in the city.
- **Martinez.** Martinez has a classic downtown main street with mixed use residential, office, and small commercial retail options. The downtown is located in an older area of the city consisting of mostly small retailers, service providers, and restaurants. Two big box retailers (Walmart and Home Depot) are located at the Martinez Center, approximately 4.1 miles northwest of the project site. Other than these two big box retailers, three neighborhood shopping centers anchored by grocery stores, one stand-alone Safeway, and a movie theater comprise all of the retail options in the city. The city does not have a strong retail base, and no upscale shopping opportunities exist.
- **Walnut Creek.** Walnut Creek is a heavily retailed city and includes the largest, most concentrated selection of upscale retailers in the East Bay. These stores are located in Broadway Plaza and Downtown Walnut Creek, located approximately 5 miles south of the project site. In addition, a movie theater, numerous grocery-anchored shopping centers, and shopping centers with fitness facilities are located throughout the city. While none of Walnut Creek's shopping centers are located in the market area, the upscale centers and other centers located near the boundary of the project's market area likely draw demand from shoppers living in the project's retail market area, and thus comprise shopping opportunities available for market area consumers.

In summary, the retail market area and neighboring Walnut Creek have a vast array of retail shopping opportunities, ranging from upscale to discount shopping. Most of the upscale shopping, however, is located in Walnut Creek and is not centrally located within the project's market area.

(2) Movie Theater Market Area. The project would include a "luxury" movie theater with approximately 44,000 square feet (sf) and eight screens. Plans call for a high-end theater experience with a restaurant, bar, large comfortable seats, and possibly waiter service. The market area for the movie theater component of the project was defined as a larger area than the retail market area because the luxury movie theater is anticipated to draw patrons from a larger geographic area as it would be unique to the market area. Therefore, the movie theater market area was defined as an approximately 20-mile radius from the site, including all of the retail market area communities, as well as additional communities extending to Benicia to the north, Orinda and Moraga to the southwest, Pittsburg to the northeast, and San Ramon to the south.

Ten movie theaters with a total of 89 screens (including two outdoor screens in Concord) are located within the movie theater market area and range from 1.5 to 18.4 miles from the project site. No luxury-oriented movie theaters are located in this area; all are considered conventional theaters (with the exception of the outdoor theaters). The indoor theaters closest to the project site include Brenden Theatres, located 1.5 miles east in downtown Concord, Century 16 Downtown Pleasant Hill, located 2.9 miles south, and Contra Costa Stadium Cinemas, located 4.6 miles northwest in the City of Martinez. Concord's outdoor movie theater, West Wind Solano Drive-In, is located 3.3 miles from the project site.

(3) Fitness Center Market Area. The market area for the fitness center was defined as the same geographical area as the retail market area identified above. Three types of fitness facilities are located within the market area and include: (1) fixed workout facilities that provide basic cardio equipment and personal training; (2) specialized workout facilities, such as CrossFit and boot camps; and (3) full-service and family-oriented workout facilities that include amenities such as pools, tennis courts, and children's activities. A total of 29 fitness centers and health clubs representing all three types of facilities are located within the market area. The majority of these facilities are fixed workout facilities, with fewer specialized facilities. Full-service facilities are the least represented.

c. Strength of Market Area. The economic impact study analyzed retail sales "leakage" and "attraction" in Concord and the rest of the market area. These terms refer to the extent to which the market area captures retail spending by residents from within as well as from outside the market area. Retail categories in which the market area does not fully capture spending by locals are called "leakage" categories, while retail categories in which the market area captures more sales than are generated by residents are called "attraction" categories. Generally, attraction categories signal particular strengths of a retail market, while leakage categories signal particular weaknesses.

Concord has significant attraction in all major retail categories, particularly in motor vehicles and parts, building materials and garden equipment, general merchandise, and home furnishings and appliances. For 2016, households in Concord have an estimated retail demand of $1.2 billion, representing an average household retail expenditure of $27,495. This compares to the estimated retail sales experienced in Concord in 2016 of $2.7 billion in total, or $59,026 per household. The disparity between the level of resident retail demand and the retail sales achieved by Concord retailers means that approximately 53 percent of the sales achieved in Concord are from households outside of the City limits.

The market area as a whole has attraction in all retail categories, particularly in building materials and garden equipment, motor vehicles and parts, home furnishings and appliances, and general

merchandise. For 2016, households in the market area have an estimated retail demand of $2.3 billion, compared to actual sales of $3.8 billion. Therefore, attraction in the market area is estimated to be about $1.5 billion, which represents 40.3 percent of spending generated by households outside of the market area boundaries.

All of the retail categories relevant to the project are experiencing significant retail attraction overall in the market area. These categories include food and beverage stores, clothing and clothing accessories stores, food services and drinking places, as well as a portion of "other retail" stores, which include a wide range of goods, such as office supplies, pet supplies, books, toys, pharmacy, jewelry, sporting goods, and gifts. For the categories relevant to the project, all categories are experiencing attraction in the range of 18 percent to 55 percent depending on the retail category. These results indicate that a large number of households in communities outside the market area travel to the market area for a wide variety of their retail purchases.

The leakage and attraction results indicate that retail is highly concentrated in Concord and the market area as a whole, with Concord having a higher retail concentration compared to other cities and communities in the market area (40.3 percent sales attraction in the market area versus 53.4 percent sales attraction in Concord for 2016). The area's abundance of retail includes regional malls, newer big box and neighborhood retail centers, as well as older strip retail and freestanding stores. Overall, the market area can be characterized as healthy and fully meeting the retail needs of its resident population, as well as partially supporting the retail needs for households beyond the market area boundaries. These sales attraction and leakage findings suggest that the market area is a major retail destination supporting numerous shopping centers and retailers that draw from a larger base than would be expected given the size of its population.

(1) Retail Vacancies. A retail vacancy rate in the 5 percent to 10 percent range is recognized as sufficient to maintain a healthy retail market. This range includes some increment of vacancy to allow for market fluidity and growth of existing retailers. In 2015, the vacancy rates for the cities of Concord, Pleasant Hill, Martinez, and Walnut Creek were relatively low, at 2.8 percent, 2.8 percent, 3.1 percent, and 2.5 percent, respectively. Overall, the retail vacancy rates for the cities over time have been low, well below the 5 percent to 10 percent level.

Retail vacancies in the market area are actively marketed, and new tenants are found in a reasonable amount of time. Even larger spaces, including spaces vacated by grocery, sports equipment, and hardware stores, restaurants, and fitness facilities, which are relatively more difficult to fill than smaller lease spaces, are being re-tenanted within a reasonable amount of time (e.g., within 3 years). Fieldwork was conducted in the market area and neighboring Walnut Creek to assess the condition of existing retail vacancies of 5,000 sf or more. In general, of those properties observed, all indicate that existing market area vacancies are well-maintained with no visible signs of deterioration.

d. Regulatory Setting

(1) Concord General Plan. The Concord General Plan contains provisions related to economic impacts. Refer to Table 4.I-1 in Section 4.I, Land Use and Planning Policy, which contains a discussion of General Plan policies related to economic impacts and property maintenance.

(2) Concord Municipal Code. Concord Municipal Code Chapter 8.25, Neighborhood Preservation, addresses property maintenance and public nuisances. The purpose of the chapter is to regulate, prevent, and prohibit disorderly, disturbing, unsightly, unsafe, or unsanitary conditions or objects in the City. The regulations in this section can be used by the City to combat symptoms of nuisances such as blight and other physical deterioration of properties. The law generally defines a public nuisance as any property maintained, permitted, or allowed to remain in such a condition so as to be defective, unsightly, or in a state of deterioration, disrepair, or neglect whereby the condition causes, or may cause, a health, safety, or fire hazard, or diminution of surrounding property values, or a blight upon the aesthetic quality or appearance of the neighborhood, or an attractive nuisance to children. Violations of the law constitute a misdemeanor subject to fines. If a property owner fails to abate a nuisance as required by the law, the City may abate the nuisance pursuant to the procedures specified in Section 8.25.080.

(3) Concord Development Code. Concord Development Code Chapter 18.150.130 establishes performance standards for new and existing uses, including a requirement for nonresidential properties to maintain and repair property improvements on an ongoing basis.

2. Impacts and Mitigation Measures

The following section presents a discussion of the impacts related to physical deterioration of other properties from economic impacts that could result from implementation of the project. The section begins with the criteria of significance and establishes the thresholds to determine if an impact is significant. The latter part of this section presents the impacts associated with implementation of the project and the recommended feasible mitigation measures, if required.

a. Criteria of Significance. Pursuant to CEQA Guidelines Sections 15064(e) and 15131, the project would have a significant economic impact if it would:

- Result in economic and social effects that would cause indirect substantial adverse physical changes in the form of physical deterioration (i.e., urban decay) of other properties from economic impacts.

b. Less-than-Significant Impacts. The following less-than-significant impacts have been identified.

(1) Retail Market Impacts. Based on the existing conditions in the retail market area for the project and neighboring Walnut Creek, the introduction of the project by itself is not likely to result in physical deterioration of other properties from economic impacts of the type described herein. This conclusion is supported by the evaluation of current market conditions, findings regarding diverted retail sales, and re-tenanting potential. These findings are discussed below and are based upon the assumption that 2018 would comprise the project's first full year of operations if the project is approved.

Strong Retail Market Conditions in Market Area and Environs. The economic impact study indicates that the retail market in Concord and the overall environs is healthy with relatively few vacancies. The market area supports a large retail base that attracts shoppers from a wide geographic area, resulting in retail sales in excess of resident demand in every major retail category.

Diverted Retail Sales. The proposed shopping center would generate an estimated total of $170.5 million in 2016 dollars in stabilized sales, plus additional movie theater ticket sales. By sales category, the project is anticipated to generate $68.7 million in clothing and clothing accessories sales, which is approximately 40 percent of the total sales. In addition, the project is estimated to generate $58.4 million in food services and drinks sales, $22.8 million in food and beverage sales for the grocery store, and $17.4 million in other retail group sales. The project's grocery space and all other retail spaces are anticipated to draw 80 percent and 70 percent of their sales from the market area, respectively. The grocery store's market area draw is higher because grocery demand is anticipated to be more localized than the demand for the project's apparel and restaurant components. The remaining percentage of project sales is anticipated to originate from other sources, such as people who work nearby but live beyond the market area, visitors to the area, and other shoppers traveling through the area.

The economic study indicates that, once stabilized sales are achieved, the project could divert a maximum of $110.3 million from existing retailers ($46.8 million in clothing and clothing accessories sales, $38.4 million in food services and drinks, $15 million in food and beverages sales, and $9.8 million in other retail group sales), or 2.6 percent of the 2018 competitive retail sales base (which includes the market area and portions of Walnut Creek). Overall this is a nominal impact, as retailers often sustain year to year sales fluctuations within a 3.0 percent sales range. The extent of the sales diversion would depend on many factors, such as the ability of existing retailers to weather sales declines and economic conditions. If any retailers in the competitive retail sales base are currently struggling or experiencing poor sales, they may not be able to withstand sale declines and may close.

Most retail categories are projected to experience a low level of impact and would not likely result in potential store closures. This is especially the case with the project's anticipated grocery component, with an estimated impact below the overall average. However, the clothing and clothing accessories category and the food services and drinking category are projected to be impacted substantially above the average 2.6 percent amount (10.6 percent and 9.1 percent, respectively). These impacts are likely to be experienced by a number of existing competitive retailers or restaurants, and thus distributed throughout the competitive retail and restaurant base. However, these impacts assume that the project's retailers and restaurants would achieve stabilized sales during the first year of operations, which is unusual. New retailers typically achieve stabilized sales over a period of several years. However, given the magnitude of the anticipated impacts to these two retail categories, the project's economic impacts may be sufficiently high enough to result in the closure of several existing clothing stores and restaurants within the competitive retail sales base. However, demand for retail space in the market area and Walnut Creek is very high, as discussed below, and spaces are not expected to remain vacant for prolonged periods of time.

Re-Tenanting Potential. Overall, retail market conditions in Concord and surrounding areas are healthy and any space that might be vacated would have the potential to be successfully re-tenanted within a reasonable time (e.g., within 3 years). Re-leasing activity can be beneficial to a market area by expanding opportunities for strong retailers, providing opportunities for retailers new to the market (including local entrepreneurs), and improving and upgrading the physical condition of the area. However, if economic factors, such as potential future housing downturns similar to the Great Recession were to lead to slower than expected increases in population, then retail demand may be weaker. In such conditions, vacant retail space may take longer to absorb. Given the high demand for retail space in the market area and Walnut Creek, the development of the project is not likely to

lead to impacts large enough to cause any potentially affected spaces to remain vacant for prolonged periods of time (e.g., greater than 3 years). In addition, retail vacancies that might occur in the market area and Walnut Creek as a result of the project would likely be well-maintained during any period of vacancy and would not contribute to conditions of physical deterioration of other properties from economic impacts of the project.

(2) Movie Theater Impacts. Because theaters in the movie theater market area are considered to be conventional, and likely have lower priced tickets than the proposed luxury theater, they are not anticipated to be highly competitive with the project. This remains the case even if Concord's existing Brenden Theatres implements a plan to sell alcohol as part of a 2015 use permit amendment approved by the City that includes offering upgraded food, as this plan will not result in reconfiguration of the theater seating experience. However, the proposed luxury movie theater would provide additional screens to the movie theater market area, thus reducing the number of persons per screen. The decline in persons per screen following introduction of the project's movie theater would be a nominal decline and is not sufficient to cause an existing movie theater to close. While existing movie theaters might experience some competitive impacts, the luxury movie theater is anticipated to draw patrons from a large geographical area, larger than conventional movie theaters within the market area, thus distributing the movie theater's potential economic impacts over a wide geographic area and shielding any particular theater from a substantial share of the potential impacts.

(3) Fitness Center Impacts. The economic impact study estimated that the market area could support approximately 34 fitness facilities. Currently, at least 29 fitness facilities are located in the market area. Development of the proposed fitness facility would bring the market area total to 30 fitness facilities, which is below the estimated number of facilities that could be supported in the market area. Further, many of the market area's existing facilities are located at the periphery of the market area, such that they will likely draw from a larger or different area than the project's market area. For example, a facility at the southernmost boundary of the market area could draw half its demand to the north of its location from within the market area and half to the south of its location outside the market area. Therefore, there would be sufficient market area demand to support the project's fitness center, and existing facilities are not anticipated to close as a result of implementation of the project.

In summary, implementation of the project would not contribute to significant economic impacts to retail (including grocery stores), movie theaters, or fitness centers in the respective market areas, including Walnut Creek; therefore, no physical deterioration of other properties from economic impacts of the project would result, and no mitigation is required.

c. Significant Impacts. As described above, construction and operation of the project would not result in significant physical deterioration of other properties from economic impacts either in and of itself or in combination with identified cumulative development.

d. Cumulative Impacts. The economic study identified approximately 666,200 sf of cumulative retail development inside and outside of the retail market area (refer to Economic Impact Analysis Exhibit 33). The cumulative projects include competitive retail developments that are anticipated to be completed by the end of 2018 (i.e., within the same time frame as the project).

The cumulative retail projects are estimated to generate approximately $50.7 million in sales competitive with the project of which $18.5 million are within the market area and $32.2 million are outside of the market area, with the potential to draw from the market area's shoppers. The overall competitive retail sales base impact is estimated to be 3.7 percent of the 2016 sales base. The cumulative projects' sales would primarily consist of clothing and clothing accessories, food services and drinks, and general merchandise. Most retail categories would experience a low level of impact and would not likely result in potential store closures. However, the highest level of impact would be in the clothing and clothing accessories and food services and drinking categories. While the impacts could be spread throughout the market area and Walnut Creek, some individual stores or restaurants could experience closures. The amount of retail space that could be at risk as a result of the sales impacts was estimated to total approximately 93,300 sf in the clothing and clothing accessories category and approximately 84,100 sf in the food services and drinking category, for a total of 177,400 sf. The increase in retail vacancy is estimated to range from 0.7 percent to 1.3 percent of the retail base, prior to any potential retail backfilling. This percentage is a very low vacancy rate and when added to existing baseline vacancies would result in the competitive retail base operating below a 5 percent vacancy rate, below the range generally deemed sufficient to maintain a healthy retail market. This potential increase in retail vacancy would not be detrimental to the real estate sector, including the market area or retailers in Walnut Creek. In addition, population growth in the years immediately following 2018 would partially offset the maximum potential cumulative impacts.

In conclusion, while the project and identified cumulative development could result in some diverted sales and closures of stores in the market area, these events are not expected to lead to physical deterioration so prevalent and substantial that it would impair the proper utilization of affected real estate or the health, safety, and welfare of the surrounding community. Therefore, the project, combined with the identified cumulative development, would not contribute to significant physical deterioration of other properties from economic impacts, and no mitigation is required.

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5.0 ALTERNATIVES

The CEQA Guidelines require the analysis of a range of reasonable alternatives to the project, or to the location of the project, which could potentially 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] CEQA states that an EIR should not consider alternatives "whose effect cannot be ascertained and whose implementation is remote and speculative." Reasons for rejecting an alternative include: failure to meet most of the project objectives; infeasibility; and inability to avoid significant effects.

The following discussion is intended to inform the public and decision-makers of the relative impacts of five potentially feasible alternatives to the proposed project that were selected to provide a reasonable range of alternatives. A discussion of the environmentally superior alternative is also provided.

A summary of the proposed project and its objectives, and the significant impacts identified in the Draft EIR is provided below, followed by a description of each alternative. The probable environmental impacts of each alternative are then discussed and compared to those of the proposed project.

A. PROPOSED PROJECT, OBJECTIVES, AND IMPACTS

1. Project Description

As described in detail in Chapter 3.0, Project Description, the proposed project would replace the existing office buildings, parking, landscaping, and other improvements at the project site with a commercial shopping center with up to 375,000 square feet (sf) of floor area. Anticipated uses include a grocery store, theater, restaurants (including drive-through restaurant), general retail, general office/medical office, health club, and financial services. The estimated floor area for these various tenant types is detailed in Table 3.C-1. However, the ultimate tenant mix and actual square footage for each specific type of use would depend on market and other considerations. For the purposes of the traffic analysis, the mix of uses was grouped into four key categories, as shown in Table 5.A-1 below. This simplified breakdown of the project's proposed uses is used for this comparison of the alternatives.

Table 5.A-1: Proposed Project- Use Summary and Floor Area

Land Use	Floor Area (square feet)
Movie Theater	45,000
Fast Food	5,000

[1] CEQA Guidelines, Section 15126.6.

Table 5.A-1: Proposed Project- Use Summary and Floor Area

Land Use	Floor Area (square feet)
Grocery Store	35,000
Shopping Center	290,000
Total	**375,000**

2. Project Objectives

As stated in Chapter 3.0, the Project Objectives are to:

- Redevelop an underutilized site near major transportation and transit corridors to eliminate outmoded uses and build an economically viable commercial shopping center that will contribute to the City's short-term and long-term economic vitality by generating increased sales tax and other revenues;
- Establish land uses that are complementary to existing uses in the vicinity, including, among others, a high-quality grocery store, a theater, restaurants, and other community-serving commercial uses, which also ensures a diverse mix of on-site tenants and uses (including entertainment uses) to encourage customers to shop and stay at the center;
- Develop a high-quality, diverse shopping center to replace outdated buildings with upgraded building and site improvements that incorporate updated conservation standards, water quality features and other measures, as well as extensive landscaping and other amenities that promote a vibrant shopping experience on-site and also benefit surrounding developments; and
- Utilize the project's advantageous location near major transportation facilities to facilitate access, enhance connectivity, and minimize, as feasible, traffic and other related impacts on surrounding roadways.

3. Project Impacts

The proposed project has been described and analyzed in the previous chapters, with an emphasis on significant impacts resulting from the project and feasible mitigation measures recommended to reduce or avoid these impacts. Table 2-1 summarizes all the significant impacts of the proposed project, and lists the corresponding mitigation measures recommended to eliminate or minimize the significant impacts, as feasible. Table 5.A-2 below summarizes the project impacts by environmental topic and the level of significance after mitigation:

Table 5.A-2: Summary of Significant Project Impacts

Topic	Significant Impact(s)	Significance after Mitigation
A. Aesthetics	Freeway-oriented Signs (cumulative only)	Less than Significant
B. Air Quality	Construction Dust Emissions	Less than Significant
C. Biological Resources	Nesting Birds and Roosting Bats	Less than Significant
D. Cultural and Paleontological Resources	None	
E. Geology, Soils, and Seismicity	Seismic Shaking and Expansive Soils	
F. Greenhouse Gas Emissions	Emissions from Construction and Operations	Less than Significant
G. Hazards and Hazardous	None	

Table 5.A-2: Summary of Significant Project Impacts

Topic	Significant Impact(s)	Significance after Mitigation
Materials		
H. Hydrology and Water Quality	None	
I. Land Use and Policy Planning	None	
J. Noise	None	
K. Public Services and Utilities	None	
L. Transportation and Circulation	Intersection Level of Service, Freeway Segments and Ramps Level of Service, Transit Service, Pedestrian Facilities, Vehicle Queueing, Construction Traffic	Significant and Unavoidable
M. Economic Impact Analysis	None	

B. ALTERNATIVES

This chapter evaluates five alternatives that were identified to consider a reasonable range of alternatives to the proposed project. The scope and content of the alternatives were conceived with the purpose of providing decision makers and the general public with a reasonable number of potentially feasible project alternatives, while identifying alternatives that may avoid or reduce any of the project's significant adverse environmental impacts.

In some cases, the alternatives analysis in an EIR for a project like The Veranda Shopping Center would consider an off-site alternative location that would be of comparable size to allow a direct comparison of the proposed project site to the alternative site in terms of project impacts. In Concord, however, there are no other sites of a comparable size (i.e., approximately 30 acres and located near major transportation facilities) that are assembled, available for sale, and would accommodate the proposed development. Therefore, since there is no other potentially feasible location, the alternatives analysis does not consider any alternative sites for the proposed project.

The uses proposed for each of the alternatives are summarized in Table 5.B-1 and are discussed in more detail below:

Table 5.B-1: Alternatives Summary

Land Use	Floor Area (square feet)
1. No Project (No Build) Alternative	
Office	619,000
2. New Office Buildings Alternative	
Office	619,000
3. Reduced Project Alternative	
Movie Theater	45,000
Grocery Store	35,000
Shopping Center	220,000
Total	300,000
4. Revised Project Alternative	
Grocery Store	35,000
Shopping Center	220,000
Fast Food	5,000

Table 5.B-1: Alternatives Summary

Land Use	Floor Area (square feet)
Office	85,000
Total	375,000
5. Big Box Retail Alternative	
Retail	450,000

1. No Project (No Build) Alternative

a. Principal Characteristics. The No Project (No Build) Alternative assumes that the environmental setting of the site would remain essentially unchanged, and the project site would continue to be used as an office campus. The only difference between this alternative and the existing setting evaluated as the CEQA environmental baseline in this Draft EIR[2] is that this alternative assumes re-leasing and full occupancy of the existing 619,000 sf of office buildings at the project site with new office tenants. Under this alternative, the project site would not be redeveloped and would remain in its existing condition. The existing office buildings, improvements, and landscaping would remain and continue to be maintained. Because this would be a continuation of the existing office use of the project site, a sign ordinance amendment would not be requested and freeway-oriented signs would not be constructed at the project site and other potential sites along I-680.

b. Comparison to Objectives. This alternative would not achieve most of the stated objectives of the project since the site would not be redeveloped to eliminate outmoded uses; no commercial shopping center (with a high-quality grocery store, theater, restaurants, and other uses and amenities) would be built and thus these retail uses would not be available to contribute to the City's short-term and long-term economic vitality nor would these complementary uses be available to serve the community; increased revenues for the City (including sales tax) would not occur[3], and because no redevelopment would occur, no site/building improvements that incorporate updated conservation standards, water quality features, or other measures would result nor would extensive landscaping or other site amenities be constructed. However, this alternative would meet the objective to minimize, as feasible, traffic and other related impacts on surrounding roadways. It should be noted that the current demand for office space in Concord is relatively weak. The City's current total vacancy rate for office space is approximately 14 percent, with approximately 900,000 sf of office space currently available for lease.[4]

[2] The CEQA baseline in the Draft EIR evaluates occupancy of the site with approximately 400 employees given that this was the circumstance at the time environmental review commenced; the buildings were fully vacated in April 2016. The CEQA baseline also assumes that 795 trees exist on the project site for the same reason. Because 93 trees were removed along the freeway frontage in late January 2016, the No Project (No Build) Alternative assumes that 702 trees would remain on the site.

[3] City revenues from full occupancy of the existing office buildings are assumed to be generally similar to the existing condition and substantially less than redevelopment with new commercial uses.

[4] Newmark Cornish & Carey, 2016.*Quarterly Report, North I-680, Office, Flex.* First Quarter 2016.

2. New Office Buildings Alternative

a. Principal Characteristics. The New Office Buildings Alternative assumes redevelopment of the site and construction of 619,000 sf of modern office buildings intended to cater to the needs of the current office market. Under this alternative, all of the existing office buildings would be demolished and replaced with new modern office buildings that would better cater to the current demands market for office space in Concord. Most of the existing parking lots and improvements such as on-site utilities and landscaping would also be removed and replaced. However, this alternative assumes that the majority of the mature trees around the perimeter of the site that are in moderate to good condition would be preserved with the new development. Because this is an office use, a sign ordinance amendment would not be requested and freeway-oriented signs would not be constructed at the project site and potential other sites along I-680.

b. Comparison to Objectives. This alternative is similar to the no project alternative in terms of not meeting most of the project objectives. While redevelopment would occur (and thus incorporation of updated conservation standards, water quality features, and other such measures would result), office use is not a project objective. Specifically, this alternative would not achieve most of the stated objectives of the project since no commercial shopping center (with a high-quality grocery store, theater, restaurants, and other uses and amenities) would be built, and thus these retail uses would not be available to contribute to the City's short-term and long-term economic vitality; nor would these complementary uses be available to serve the community, and increased revenues for the City (including sales tax) would not occur[5]. However, this alternative would meet the objective to minimizing, as feasible, traffic and other related impacts on surrounding roadways. As with Alternative 1, it should be noted that the current demand for office space in Concord is relatively weak. The City's current total vacancy rate for office space is approximately 14 percent, with approximately 900,000 sf of office space currently available for lease. As such, development of a new office complex with 619,000 sf of floor area could be financially infeasible due to current market conditions.

3. Reduced Project Alternative

a. Principal Characteristics. The Reduced Project Alternative assumes redevelopment of the site with a shopping center similar to the proposed project, but with a reduced size of 300,000 sf. The project would include a movie theater and grocery store (key tenants of the proposed project) plus 220,000 sf of other shopping center tenants (retail, restaurants, etc.) similar to those proposed for the project. Because this project assumes redevelopment of the site and operation of a shopping center, it would have similar construction and operational characteristics as the proposed project, albeit somewhat reduced given the overall reduction in square footage. Consistent with the proposed project, this alternative assumes that a sign ordinance amendment would be requested and that freeway-oriented signage would be constructed at the project site and potentially other sites along I-680.

[5] City revenues from full occupancy of the existing office buildings are assumed to be generally similar to the existing condition and substantially less than redevelopment with new commercial uses given the nature of the proposed retail uses.

b. Comparison to Objectives. Because this alternative is similar to the proposed project in certain respects, it would achieve some of the stated objectives of the project, although to a lesser degree. Specifically, the site would be redeveloped with a shopping center and related improvements (including the incorporation of updated conservation standards, water quality features, and other measures) as well as landscaping and related amenities. However, this alternative would constrain to a certain extent the tenant mix (thereby potentially decreasing diversity and vibrancy of the center as a whole); in addition, under this alternative, the center's economic vitality would be diminished by the significant reduction in square footage and the center's contribution to the City's short-term and long-term economic vitality would be less since there would be a significant decrease in the amount of sales tax and other revenue that would be generated. Because this alternative would have less total floor area than the proposed project, it would meet the objective to minimize, as feasible, traffic and other related impacts on surrounding roadways.

4. Revised Project Alternative

a. Principal Characteristics. The Revised Project Alternative assumes redevelopment of the site with buildings totaling 375,000 sf of floor area. The alternative would have a grocery store and 255,000 sf of shopping center tenants similar to the proposed project. However, the movie theater would be eliminated and an 85,000 sf office building would be located on the site. Because this alternative assumes redevelopment of the site and operation of a shopping center and office building, it would have similar construction and operational characteristics as the proposed project. Consistent with the proposed project, this alternative assumes that a sign ordinance amendment would be requested and that freeway-oriented signage would be constructed at the project site and allowed at potentially other sites along I-680.

b. Comparison to Objectives. Because this alternative is similar to the proposed project in certain respects, it would achieve some of the stated objectives of the project, albeit to a lesser degree. Specifically, the site would be redeveloped with a shopping center and related improvements (including the incorporation of updated conservation standards, water quality features, and other measures) as well as landscaping and related amenities. However, this alternative would significantly constrain the tenant mix (thereby decreasing diversity and vibrancy of the center as a whole), particularly with respect to the elimination of the movie theater (which is an express project objective and critical to the overall success of the center). In addition, under this alternative, the center's economic vitality would be diminished by the significant reduction in retail square footage (as well as the inclusion of a substantial amount of office uses that may not be economically viable given the current and anticipated future demand for office space in the City); and the center's contribution to the City's short-term and long-term economic vitality would be diminished since there would be a significant decrease in the amount of sales tax and other revenue. Because this alternative would have less commercial floor area and more office floor area that the proposed project, it would it would meet the objective to minimize, as feasible, traffic and other related impacts on surrounding roadways.

5. Big Box Retail Alternative

a. Principal Characteristics. The Big Box Retail Alternative assumes redevelopment of the site with one very large "big box" retailer such as an Ikea, Costco, or a combination of several "big box" retailers, totaling 450,000 sf of floor area. No small individual retail or restaurant tenants would be located on the site. Because this alternative assumes redevelopment of the site with a new commercial

building or buildings, it is assumed to have similar construction characteristics as the proposed project, albeit somewhat greater given the overall increase in square footage. Operational characteristics are assumed to be similar to big box retail uses and would be somewhat different than a shopping center made of a mix of many smaller commercial tenants. Consistent with the proposed project, this alternative assumes that a sign ordinance amendment would be requested and that freeway-oriented signage would be constructed at the project site and potentially other sites along I-680.

b. Comparison to Objectives. This alternative would only partially achieve a few of the objectives of the proposed project. For example, the site would be redeveloped with a shopping center and related improvements (including the incorporation of updated conservation standards, water quality features, and other measures) as well as landscaping and related amenities. However, this alternative would significantly constrain the tenant mix, particularly with respect to the elimination of the movie theater (which is an express project objective and critical to the overall success of the center) and anticipated restaurant uses that are designed to encourage customers to stay and shop at the center. In addition, under this alternative, the lack of diverse tenants/uses could diminish the center's overall economic vitality by decreasing diversity and vibrancy of the center as a whole. Because this alternative would have more commercial floor area than the proposed project, it would it would not meet the objective to minimize, as feasible, traffic and other related impacts on surrounding roadways.

C. ENVIRONMENTAL IMPACT COMPARISON OF ALTERNATIVES

The following discussion describes each alternative and its anticipated environmental impacts. The emphasis of the analysis is on comparing the anticipated impacts of each alternative to the significant impacts of the proposed project that have been identified in this EIR. Consistent with the approach required by CEQA, the discussion is generally qualitative in nature due to the less detailed level of analysis based on the characteristics of the alternatives as described above. The environmental impacts of each alternative are discussed under each environmental topic below, which begins with a brief summary of the project's environmental impacts identified in Chapter 4.0, Setting, Impacts, and Mitigation Measures. The discussion concludes with a determination of whether or not each alternative would result in impacts less than, similar to, or greater than the proposed project. For topics in which the project would have significant impacts requiring mitigation, the conclusion also estimates if the alternative would avoid the significant impact.

1. Aesthetics (Significant Impact)

a. Proposed Project. The proposed project would demolish the existing, outmoded office buildings and all improvements and remove all the existing trees on the site. Existing views from streets at the perimeter of the site are currently dominated by mature trees. The new shopping center buildings constructed at the perimeter of the site would feature prominently in the post-project condition. The project includes a proposed sign ordinance amendment that would permit freeway-oriented signage (wall signs and highway pylon signs) at the project site, and potentially at certain other commercial sites along I-680 in Concord, subject to approval of a use permit, master sign program, and compliance with other requirements specified in the sign ordinance amendment.

As explained more fully in Section 4.A of the Draft EIR, the project would have less than significant impacts related to scenic vistas and scenic resources; the visual character and quality of the site; and

as it relates to light and glare. The project would change the existing character of the site from an office use dominated by perimeter parking lots and landscaping to a commercial shopping center with more visible buildings and signage. While these changes would be substantial and noticeable to drivers and pedestrians familiar to the area, the commercial character of the project site would not be unique to the area. Further, the project includes a unified architectural style and substantial landscaping that would eventually mature to soften views of the buildings. Accordingly, while the center would be a change to the visual character of the area, it would not substantially degrade the visual character or quality of the site or its surroundings.

In terms of the individual impacts that would occur as a result of the sign ordinance amendment, the Draft EIR confirms that the freeway-oriented signage would change the visual character of the site as seen from the freeway to a certain degree. However, the resulting commercial visual character of the project would not be uncommon for regional commercial centers and would be somewhat similar to views of other commercial sites in the immediate vicinity. Furthermore, the proposed signage would not exceed the maximum height of the proposed buildings; would be designed to be visually compatible with the other architectural features of the project; would be required to be considered in the context of a broader master sign program to ensure consistency, coherence and high quality in overall design; and would be required to satisfy numerous findings under the related use permit process prior to approval. For these reasons, individual impacts in this regard would be less than significant.

However, the installation of freeway oriented signs at the project site, when combined with potential freeway-oriented signage at other qualifying commercial properties along I-680 in Concord, could potentially result in commercial visual clutter and substantially degrade the visual character of the City as seen by motorists on I-680. Mitigation is proposed to require careful review of all future applications for freeway-oriented signage on a case-by-case basis to minimize the potential adverse visual impacts of such signage. With the implementation of this mitigation, this impact would be reduced to less than significant. **Conclusion:** Significant cumulative impact for signage; Mitigated to Less than Significant.

b. Alternative 1: No Project (No Build). Under this alternative the existing setting of the site would remain as the office campus, and the existing improvements (including trees and landscaping) would remain. The site would not be redeveloped as a shopping center, and freeway-oriented signage would not be installed. Therefore, this alternative would avoid the project's significant cumulative impact for signage. **Conclusion:** Reduced Impacts related to cumulative impact for signage; Significant Impact Avoided and No Mitigation Required. However, under the proposed project, this significant impact is mitigated to a less than significant level in any event.

c. Alternative 2: New Office Buildings. This alternative would substantially change the existing setting of the site through the redevelopment with new office buildings. The mature trees in moderate to good health located around the site perimeter would remain (except trees already removed along the freeway), therefore reducing the apparent change to the visual character. Freeway-oriented signage would not be installed because it would not be necessary for the office use. Therefore, this alternative would avoid the project's cumulative significant impact in this regard. **Conclusion:** Reduced Impacts related to cumulative impact for signage; Significant Impact Avoided and No Mitigation Required.

d. Alternative 3: Reduced Project. Like the proposed project, this alternative would substantially change the existing setting of the site through its redevelopment for a new shopping center, albeit to a somewhat lesser degree given the overall reduction in square footage. Freeway-oriented signs would be installed at the project site, and potentially other sites, resulting in visual impacts similar to the proposed project. **Conclusion:** Similar Impacts related to cumulative impact for signage; Significant Impact Not Avoided.

e. Alternative 4: Revised Project. Like the proposed project, this alternative would substantially change the existing setting of the site through its redevelopment for a new shopping center. **Conclusion:** Similar Impacts related to cumulative impact for signage; ; Significant Impact Not Avoided.

f. Alternative 5: Big Box Retail. Like the proposed project, this alternative would substantially change the existing setting of the site through its redevelopment for a new shopping center, albeit to a somewhat greater degree given the overall increase in square footage. Furthermore, unlike the project, under this alternative, "big box" retail uses would be built which may be perceived as having more significant aesthetic impacts given the anticipated "formula" design aspects that typically are included, significant massing and scale issues, as well as the reduction in overall design variation. **Conclusion:** Similar Impacts related to cumulative impact for signage; Significant Impact Not Avoided.

2. Air Quality (Significant Impact)

a. Proposed Project. As explained more fully in Section 4.B of the Draft EIR, the project would have less than significant impacts as follows: the project would not conflict with or obstruct implementation of the current Air Quality Plan; it would not exceed applicable standards for localized CO emissions or operational emissions; and it would not expose sensitive receptors to substantial pollutant concentrations or create objectionable odors. In addition, the project proposes to include extensive landscaping on site and would incorporate energy conservation features in accordance with applicable updated Title 24 standards.

However, demolition and construction activities required to implement the proposed project would result in significant dust emissions. Application of the BAAQMD's Basic Construction Mitigation Measures would reduce construction-related air quality impacts to less than significant. Accordingly, all air quality impacts of the project would be less than significant (with mitigation). **Conclusion:** Significant impact for demolition and construction dust emissions; Mitigated to Less than Significant.

b. Alternative 1: No Project (No Build). Under this alternative, demolition of the existing buildings and improvements would not occur, so construction-related dust and emissions would not be generated. This alternative would also result in substantially fewer total weekday and weekend vehicle trips than the proposed project as shown in Table 5.C-1 below, so vehicle-related emissions would be less than the proposed project in this regard, although vehicle trips and emissions in the AM peak hour would be significantly increased under this alternative. **Conclusion:** Reduced Impacts with respect to fugitive dust emissions; Significant Impact Avoided and No Mitigation Required. However, under the proposed project, this significant impact is mitigated to a less than significant level in any event.

c. Alternative 2: New Office Buildings. Similar to the proposed project, this alternative would result in redevelopment of the site, resulting in temporary construction-related dust and emissions similar to the proposed project. The proposed office use of this alternative would also result in substantially fewer total weekday and weekend vehicle trips than the proposed project (similar to Alternative 1, above) in this regard, although vehicle-related emissions in the AM peak hour would be significantly increased under this alternative. **Conclusion:** Reduced Impacts; with respect to fugitive dust emissions; Significant Impact Not Avoided. However, under the proposed project, this significant impact is mitigated to a less than significant level in any event.

d. Alternative 3: Reduced Project. Similar to the proposed project, this alternative would result in redevelopment of the site, resulting in temporary construction-related dust and emissions similar to the proposed project. Due to its reduced commercial floor area, this alternative would generate fewer vehicle trips than the proposed project as shown in Table 5.C-1 below, although these air-quality related impacts are less than significant under both this alternative and the proposed project. **Conclusion:** Similar Impacts with respect to fugitive dust emissions; Significant Impact Not Avoided.

e. Alternative 4: Revised Project. Similar to the proposed project, this alternative would result in redevelopment of the site, resulting in temporary construction-related dust and emissions similar to the proposed project. Due to its replacement of some commercial floor area with floor area for the office use, this alternative would generate fewer vehicle trips than the proposed project as shown in Table 5.C-1 below, although these air-quality related impacts are less than significant under both this alternative and the proposed project. **Conclusion:** Similar Impacts with respect to fugitive dust emissions; Significant Impact Not Avoided.

f. Alternative 5: Big Box Retail. Similar to the proposed project, this alternative would result in redevelopment of the site. However, due to the increased building floor area to be constructed, construction-related dust and emissions would be greater than the proposed project. This alternative would also generate substantially more daily and weekend vehicle trips than the proposed project as shown in Table 5.C-1 below. **Conclusion:** Greater Impacts related to fugitive dust emissions and operational emissions; Significant Impact Not Avoided.

3. Biological Resources (Significant Impact)

a. Proposed Project. As discussed more fully in Section 4.C in the Draft EIR, given the already-developed and urbanized nature of the project site, the proposed project would have less than significant impacts as these relate to special-status plants, riparian habitat or sensitive communities, any federally or state protected wetlands, wildlife movement corridors or wildlife nursery sites, or habitat conservation plans.

However, demolition and construction activities required to implement the project could affect protected or special-status species, including nesting birds and roosting bat species. With the implementation of recommended mitigation (preconstruction surveys and avoidance of occupied/active nests and relocation of bat roosts), impacts would be less than significant. **Conclusion:** Significant impact due to nesting birds and roosting bat species; Mitigated to Less than Significant. However, under the project, this significant impact is mitigated to a less than significant level in any event.

b. Alternative 1: No Project (No Build). Under this alternative, demolition of the existing buildings and improvements would not occur, so potential impacts to nesting birds and roosting bats would be avoided. **Conclusion:** Reduced Impacts as to nesting birds and roosting bats; Significant Impact Avoided and No Mitigation Required.

c. Alternative 2: New Office Buildings. Similar to the proposed project, this alternative would result in redevelopment of the site, and could affect nesting birds and roosting bats. Implementation of mitigation would reduce the impact to less than significant. **Conclusion:** Similar Impact as to nesting birds and roosting bats; Significant Impact Not Avoided.

d. Alternative 3: Reduced Project. Refer to Alternative 2 discussion above. **Conclusion:** Similar Impact as to nesting birds and roosting bats; Significant Impact Not Avoided.

e. Alternative 4: Revised Project. Refer to Alternative 2 discussion above. **Conclusion:** Similar Impact as to nesting birds and roosting bats; Significant Impact Not Avoided.

f. Alternative 5: Big Box Retail. Refer to Alternative 2 discussion above. **Conclusion:** Similar Impact as to nesting birds and roosting bats; Significant Impact Not Avoided.

4. Cultural and Paleontological Resources

a. Proposed Project. As discussed more fully in Section 4.D of the Draft EIR, overall, the potential for impacts to cultural resources at the site is low, and sediment within the upper 10 feet of the site has low paleontological sensitivity. However, alluvial sediment deeper than 10 feet has high paleontological sensitivity. Furthermore, project construction could disturb previously unidentified archaeological resources or human remains. Compliance with the City's standard conditions of approval would protect unknown cultural and paleontological resources and human remains, so impacts would be less than significant. **Conclusion:** Less Than Significant Impact; Mitigation Not Required.

b. Alternative 1: No Project (No Build). Under this alternative the project site would remain as an office campus and demolition and construction activities would not occur. Therefore, there would be no potential for impacts to cultural and paleontological resources. **Conclusion:** Reduced Impacts; No Significant Impact. However, this impact is less than significant under both the proposed project and this alternative in any event.

c. Alternative 2: New Office Buildings. Similar to the proposed project, this alternative would result in redevelopment of the site, and therefore could affect unknown cultural and paleontological resources. Compliance with the City's standard conditions of approval would protect unknown cultural and paleontological resources, so impacts would be less than significant, similar to the proposed project. **Conclusion:** Similar Impacts.

d. Alternative 3: Reduced Project. Refer to Alternative 2 discussion above. **Conclusion:** Similar Impacts.

e. Alternative 4: Revised Project. Refer to Alternative 2 discussion above. **Conclusion:** Similar Impacts.

f. Alternative 5: Big Box Retail. Refer to Alternative 2 discussion above. **Conclusion:** Similar Impacts.

5. Geology, Soils, and Seismicity (Significant Impact)

a. Proposed Project. As discussed more fully in Section 4.E of the Draft EIR, the project would have less than significant impacts as these relate to fault rupture; septic tanks and alternative wastewater disposal systems; off-site landslide, lateral spreading, subsidence, liquefaction or collapse; or erosion.

However, the project site is in a seismically active region. Implementation of the project could expose people or structures to seismic shaking and seismically induced hazards, and expansive soils at the site could impact the integrity of structures and other improvements at the site. However, incorporating the recommended mitigation requiring compliance with the geotechnical recommendations would reduce impacts to less than significant. **Conclusion:** Significant impact for due to seismic shaking and expansive soils; Mitigated to Less than Significant.

b. Alternative 1: No Project (No Build). This alternative would not result in new construction on the site, but the existing buildings and improvements would be subject to the same seismic shaking and expansive soils that affect the site. The structural integrity of the existing buildings was not evaluated as part of this Draft EIR; the buildings could present a greater seismic risk than the new commercial buildings that would be constructed to current seismic standards. **Conclusion:** Similar Impact as it relates to seismic shaking and expansive soils; Significant Impact Not Avoided.

c. Alternative 2: New Office Buildings. Similar to the proposed project, this alternative would result in redevelopment of the site with new buildings and improvements. Incorporating the recommendations of the geotechnical investigation into project design and construction would reduce impacts to less than significant. **Conclusion:** Similar Impact as it relates to seismic shaking and expansive soils; Significant Impact Not Avoided.

d. Alternative 3: Reduced Project. Refer to the discussion of Alternative 2 above. **Conclusion:** Similar Impact as it relates to seismic shaking and expansive soils; Significant Impact Not Avoided.

e. Alternative 4: Revised Project. Refer to the discussion of Alternative 2 above. **Conclusion:** Similar Impact as it relates to seismic shaking and expansive soils; Significant Impact Not Avoided.

f. Alternative 5: Big Box Retail. Refer to the discussion of Alternative 2 above. **Conclusion:** Similar Impact as it relates to seismic shaking and expansive soils; Significant Impact Not Avoided.

6. Greenhouse Gas Emissions (Significant Impact)

a. Proposed Project. As discussed more fully in Section 4.F of the Draft EIR, demolition and construction activities required to construct the proposed project would produce substantial greenhouse gas emissions. Long-term operation of the project could generate substantial greenhouse gas emissions from mobile sources as well as indirect sources such as energy consumption. Application of the BAAQMD's recommended mitigation measures would minimize construction emissions, and incorporation of the applicable Concord Citywide Climate Action Plan (CAP) strategies in the project design would mitigate greenhouse gas emissions impacts to less than

significant. **Conclusion:** Significant impact for greenhouse gas emissions; Mitigated to Less than Significant.

b. Alternative 1: No Project (No Build). Under this alternative, demolition of the existing buildings and improvements would not occur, so construction-related greenhouse gas emissions would not be generated. This alternative would also result in substantially fewer total weekday and weekend vehicle trips than the proposed project as shown in Table 5.C-1 below, although weekday AM peak hour trips would be substantially higher. Vehicle-related greenhouse gas emissions from mobile sources from this alternative would be less than the proposed project. However, greenhouse gas emissions from energy use from full occupancy of the existing office buildings would continue to occur. **Conclusion:** Reduced Impacts; Significant Impacts Avoided. However, under the proposed project, this significant impact is mitigated to a less than significant level in any event.

c. Alternative 2: New Office Buildings. This alternative would result in redevelopment of the site, resulting in temporary construction-related greenhouse gas emissions similar to the proposed project. The office use of this alternative would result in substantially fewer total weekday and weekend vehicle trips than the proposed project (identical to Alternative 1, above), although weekday AM peak hour trips would be substantially higher. Vehicle-related operational greenhouse gas emissions would be less than the proposed project. Greenhouse gas emissions from energy use by the new buildings are assumed to be similar to the proposed project. It is also assumed that mitigation would be incorporated into this alternative that would require compliance with BAAQMD measures and the City's CAP, similar to the proposed project. **Conclusion:** Reduced Impacts related to vehicle emissions, similar operational and construction emissions; Significant Impact Not Avoided. However, under the proposed project, this significant impact is mitigated to a less than significant level in any event.

d. Alternative 3: Reduced Project. This alternative would result in redevelopment of the site, resulting in temporary construction-related greenhouse gas emissions similar to the proposed project, albeit to a somewhat lesser degree given the overall reduced square footage. The reduced size of the shopping center would result in fewer weekday and weekend vehicle trips than the proposed project, so vehicle-related operational greenhouse gas emissions would be less than the proposed project. Greenhouse gas emissions from energy use by the new buildings are assumed to be less than the proposed project due to the reduction in square footage. It is also assumed that mitigation would be incorporated into this alternative that would require compliance with BAAQMD measures and the City's CAP, similar to the proposed project. **Conclusion:** Reduced Impacts; Significant Impact Not Avoided. However, similar to the proposed project, all greenhouse gas related impacts would be less than significant impact with mitigation.

e. Alternative 4: Revised Project. This alternative would result in redevelopment of the site, resulting in temporary construction-related greenhouse gas emissions similar to the proposed project. This alternative would result in fewer weekday and weekend vehicle trips than the proposed project, so vehicle-related operational greenhouse gas emissions would be less than the proposed project. Greenhouse gas emissions from energy use by the new buildings are assumed to be similar the proposed project. It is also assumed that mitigation would be incorporated into this alternative that would require compliance with BAAQMD measures and the City's CAP, similar to the proposed project. **Conclusion:** Reduced Impacts; Significant Impact Not Avoided. However, similar to the

proposed project, all greenhouse gas related impacts would be less than significant impact with mitigation.

f. Alternative 5: Big Box Retail. Similar to the proposed project, this alternative would result in redevelopment of the site, resulting in temporary construction-related greenhouse gas emissions greater than the proposed project due to the increased building floor area to be constructed. This alternative would generate substantially more daily and weekend vehicle trips than the proposed project as shown in Table 5.C-1 below, so vehicle-related greenhouse gas emissions would be greater than the proposed project. It is also assumed that mitigation would be incorporated into this alternative that would require compliance with BAAQMD measures and the City's CAP, similar to the proposed project. **Conclusion:** Greater Impacts; Significant Impact Not Avoided. However, similar to the proposed project, all greenhouse gas related impacts would be less than significant impact with mitigation.

7. Hazards and Hazardous Materials.

a. Proposed Project. As discussed more fully in Section 4.G of the Draft EIR, demolition of the existing buildings and construction of the shopping center improvements could release hazardous materials into the environment, but compliance with existing regulations during the demolition and construction and operational phases would avoid any significant impacts. **Conclusion:** Less Than Significant Impact; Mitigation Not Required.

b. Alternative 1: No Project (No Build). This alternative would not require demolition of the existing buildings and improvements so there would be no potential for the release of hazardous materials due to construction or other significant impacts related to hazards and hazardous materials. **Conclusion:** Reduced Impact as it relates to release of hazardous materials during construction. However, this impact is less than significant under both the proposed project and this alternative in any event.

c. Alternative 2: New Office Buildings. Similar to the proposed project, this alternative would result in redevelopment of the site with new buildings and improvements. Compliance with existing regulatory requirements during demolition and construction and during operations would reduce impacts to less than significant. **Conclusion:** Similar Impact as it relates to release of hazardous materials during construction. However, this impact is less than significant under both the proposed project and this alternative in any event.

d. Alternative 3: Reduced Project. Refer to the discussion of Alternative 2 above. **Conclusion:** Similar Impact as it relates to release of hazardous materials during construction. However, this impact is less than significant under both the proposed project and this alternative in any event.

e. Alternative 4: Revised Project. Refer to the discussion of Alternative 2 above. **Conclusion:** Similar Impact as it relates to release of hazardous materials during construction. However, this impact is less than significant under both the proposed project and this alternative in any event.

f. Alternative 5: Big Box Retail. Refer to the discussion of Alternative 2 above. **Conclusion:** Similar Impact as it relates to release of hazardous materials during construction. However, this impact is less than significant under both the proposed project and this alternative in any event.

8. Hydrology and Water Quality

a. Proposed Project. As discussed more fully in Section 4.H of the Draft EIR, demolition of the existing buildings and construction of the proposed project could degrade stormwater runoff quality from the site if not properly managed. However, preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP), as required by the Construction General Permit, would protect water quality during demolition and construction activities. The proposed project would be subject to the requirements of Provision C.3 of the Municipal Regional Permit, which requires source control measures, site design measures, and stormwater treatment measures to capture and treat stormwater prior to discharge off-site. The parking lot design includes pervious pavement and biotreatment planters to cleanse parking lot runoff prior to discharge into the storm drain system and ultimately to the Walnut Creek drainage channel and Suisun Bay. Compliance with existing regulations during the demolition, construction, and operation of the project would avoid any hydrology or water quality impacts. **Conclusion:** Less Than Significant Impact; Mitigation Not Required.

b. Alternative 1: No Project (No Build). This alternative would not require demolition of the existing buildings and improvements so there would be no potential for water quality impacts during the demolition or construction. Runoff from the large surface parking lots is not currently treated and would continue to discharge to the storm drain system and degrade downstream water quality without pre-treatment that is now required for new developments by Provision C.3 of the Municipal Regional Permit. **Conclusion:** Greater Impact as it relates to water quality degradation.

c. Alternative 2: New Office Buildings. Similar to the proposed project, this alternative would result in redevelopment of the site with new buildings and improvements that would enhance the water quality of stormwater runoff from the site. Compliance with existing regulatory requirements during demolition and construction would reduce impacts to less than significant. **Conclusion:** Similar Impact as it relates to water quality degradation.

d. Alternative 3: Reduced Project. Refer to the discussion of Alternative 2 above. **Conclusion:** Similar Impact as it relates to water quality degradation.

e. Alternative 4: Revised Project. Refer to the discussion of Alternative 2 above. **Conclusion:** Similar Impact as it relates to water quality degradation.

f. Alternative 5: Big Box Retail. Refer to the discussion of Alternative 2 above. **Conclusion:** Similar Impact as it relates to water quality degradation.

9. Land Use and Planning Policy

a. Proposed Project. As discussed more fully in Section 4.I of the Draft EIR, the project would have less than significant impacts with respect to the following: it would not physically divide an existing community; it would be compatible with surrounding land uses; and it would not conflict with any applicable land use plans or policies. The proposed shopping center would be consistent with the General Plan and zoning land use designations for the site, and the commercial use would be compatible with surrounding land uses, that include a wide variety of commercial and office uses permitted in the West Concord Mixed Use (WMX) zoning district. The proposed freeway-oriented signage is not consistent with the Concord Municipal Code, but adoption of a sign ordinance

amendment to permit the proposed signage would eliminate this inconsistency. Accordingly, all land use impacts would be less than significant for the proposed project. **Conclusion:** Less Than Significant Impact; Mitigation Not Required.

b. Alternative 1: No Project (No Build). The existing use of the project site as a large office campus is consistent with the General Plan and zoning land use designations for the site, and would be compatible with surrounding land uses. This alternative would continue the existing office use and would not require the adoption of a sign ordinance amendment. **Conclusion:** Reduced Impact as it relates to potential inconsistency with sign ordinance. However, this impact is less than significant under this alternative and the proposed project.

c. Alternative 2: New Office Buildings. Development of new office buildings on the project site would be consistent with the General Plan and zoning land use designations for the site, and would be compatible with surrounding land uses. This alternative would continue office use at the site and would not require the adoption of a sign ordinance amendment. **Conclusion:** Reduced Impact as it relates to potential inconsistency with sign ordinance. However, this impact is less than significant under this alternative and the proposed project.

d. Alternative 3: Reduced Project. Similar to the proposed project, this alternative would be consistent with the General Plan and zoning land use designations for the site, and the commercial use would be compatible with surrounding land uses, which include a wide variety of commercial and office uses permitted in the West Concord Mixed Use (WMX) zoning district. The freeway oriented signage would be inconsistent with the Concord Municipal Code, but adoption of a sign ordinance amendment to permit the proposed signage would eliminate this inconsistency. **Conclusion:** Similar Impact as it relates to potential inconsistency with sign ordinance. However, this impact is less than significant under this alternative and the proposed project.

e. Alternative 4: Revised Project. Refer to the discussion of Alternative 3 above. **Conclusion:** Similar Impact as it relates to potential inconsistency with sign ordinance. However, this impact is less than significant under this alternative and the proposed project.

f. Alternative 5: Big Box Retail. Refer to the discussion of Alternative 3 above. **Conclusion:** Similar Impact as it relates to potential inconsistency with sign ordinance. However, this impact is less than significant under this alternative and the proposed project.

10. Noise

a. Proposed Project. As discussed more fully in Section 4.J of the Draft EIR, the proposed project would have less than significant noise impacts as follows: it would not expose persons to noise in excess of applicable standards (for either stationary or mobile sources); and it would be below applicable thresholds for groundborne vibration such that neither people nor buildings would be significantly affected.

Demolition and construction activities would result in a temporary increase in ambient noise levels. The closest noise sensitive receptors (residential uses) are located approximately 1,000 feet from the site, and due to the distance, would not be significantly impacted from noise generated by demolition and construction activities, particularly with adherence to the City's construction noise requirements

as well as implementation of accepted best construction management practices. With respect to operational-related mobile source noise, while the project would increase traffic volumes on area roadways, the increase in noise levels in the Cumulative Plus Project condition would not be significant, and no mitigation would be required. **Conclusion:** Less Than Significant Impact; Mitigation Not Required.

b. Alternative 1: No Project (No Build). Under this alternative, demolition of the existing buildings and improvements would not occur, so construction-related noise would not occur. This alternative would also result in substantially fewer total weekday and weekend vehicle trips than the proposed project as shown in Table 5.C-1 below, so the increase in vehicle-generated traffic noise would be less than the proposed project. **Conclusion:** Reduced impacts related to a temporary increase in ambient noise as well as mobile source impacts, although these impacts are also less than significant under the proposed project.

c. Alternative 2: New Office Buildings. Similar to the proposed project, this alternative would result in redevelopment of the site, resulting in temporary construction-related noise impacts similar to the proposed project. The office use of this alternative would also result in substantially fewer weekday and weekend vehicle trips than the proposed project (identical to Alternative 1, above), so the increase in vehicle-generated traffic noise would be less than the proposed project. **Conclusion:** Reduced Impacts related to a temporary increase in ambient noise as well as mobile source impacts, although these impacts are also less than significant under the proposed project.

d. Alternative 3: Reduced Project. Similar to the proposed project, this alternative would result in redevelopment of the site, resulting in temporary construction-related noise impacts similar to the proposed project, albeit somewhat to a lesser degree given the reduced square footage. The reduced amount of commercial floor area of this alternative would also result in fewer weekday and weekend vehicle trips than the proposed project as shown in Table 5.C-1 below, so the increase in vehicle-generated traffic noise would be less than the proposed project. **Conclusion:** Similar Impacts related to a temporary increase in ambient noise; reduced impacts related to mobile source impacts. However, both of these impacts are also less than significant under the proposed project.

e. Alternative 4: Revised Project. Refer to the discussion of Alternative 3 above. **Conclusion:** Similar Impacts related to a temporary increase in ambient noise and mobile source impacts. However, both of these impacts are also less than significant under the proposed project.

f. Alternative 5: Big Box Retail. This alternative would result in redevelopment of the site, resulting in temporary construction-related noise impacts similar to the proposed project, albeit somewhat to a greater degree given the increase in square footage. This alternative would generate substantially more daily and weekend vehicle trips than the proposed project as shown in Table 5.C-1 below, so vehicle-related the increase in vehicle-generated traffic noise would be greater than the proposed project. **Conclusion:** Greater Impacts related to a temporary increase in ambient noise; greater impacts related to mobile source impacts. However, both of these impacts would be less than significant under the proposed project.

11. Public Services and Utilities

a. Proposed Project. As discussed more fully in Section 4.K of the Draft EIR, the proposed project would be served by existing public services and utilities that had previously served the site when the existing office buildings were fully occupied with up to 2,500 employees. Changes in demand for public services and utilities and energy use as a result of the project would not result in significant impacts. In addition, as discussed in Section 4.K, energy impacts would be less than significant as the project would not result on the inefficient, wasteful, or unnecessary consumption of energy. **Conclusion:** Less Than Significant Impact; Mitigation Not Required.

b. Alternative 1: No Project (No Build). This alternative would not require demolition of the existing buildings and improvements. Impacts to public services and utilities would be greater than baseline conditions (partial occupancy) but would be the same demand as previously existed when the office buildings were fully occupied. Office use is assumed to place fewer demands on police and fire services than the proposed commercial use; utility demand (water, sewer, gas, electricity) of the commercial shopping center are also assumed to be greater than the office use, as discussed in Section 4.K. Overall, public services and utility demand of office use would be less than the demands generated by the proposed commercial shopping center. **Conclusion:** Reduced Impacts. However, under both this alternative and the proposed project, these impacts are less than significant.

c. Alternative 2: New Office Buildings. This alternative would redevelopment of the site with new office buildings. Impacts to public services and utilities would be greater than baseline conditions (partial occupancy) but would be have a similar demand as previously existed when the office buildings were fully occupied. Office use is assumed to place fewer demands on police and fire services than the proposed commercial use; utility demand (water, sewer, gas, electricity) of the commercial shopping center is also assumed to be greater than the office use, as discussed in Section 4.K. Overall, public services and utility demand of office use would be less than the demands generated by the proposed project. **Conclusion:** Reduced Impacts. However, under both this alternative and the proposed project, these impacts are less than significant.

d. Alternative 3: Reduced Project. Similar to the proposed project, this alternative would result in redevelopment of the site. The reduced size of the shopping center would place fewer demands on public services and utilities, including energy, than the proposed project; therefore impacts would be less than the proposed project. **Conclusion:** Reduced Impacts. However, under both this alternative and the proposed project, these impacts are less than significant.

e. Alternative 4: Revised Project. Similar to the proposed project, this alternative would result in redevelopment of the site. The 375,000 sf of commercial and office uses with this alternative would result in similar demands for public services and utilities, including energy, as the proposed project. **Conclusion:** Similar Impacts. However, under both this alternative and the proposed project, these impacts are less than significant.

f. Alternative 5: Big Box Retail. Similar to the proposed project, this alternative would result in redevelopment of the site. This alternative would have one or more big-box retailers resulting in a total floor area of 450,000 sf. The commercial center would not have smaller individual retail stores or restaurants as proposed by the project. Due to the small number of tenants/businesses, and due to the character of big box retail stores (large, warehouse-size buildings containing large volumes of goods for sale within each business), this alternative is assumed to have generally fewer demands for

public services (fewer police or fire calls for service due to fewer individual businesses) and utilities (reduced gas demand, water and wastewater due to few restrooms, no restaurants, etc.) than the proposed project. **Conclusion:** Reduced Impacts. However, under both this alternative and the proposed project, these impacts are less than significant.

12. Transportation and Circulation (Significant Unavoidable Impacts)

a. Proposed Project. As discussed more fully in Section 4.L of the Draft EIR, the project would have less than significant impacts as these relate to air traffic patterns, emergency access, bicycle facilities, and parking.

The proposed project would substantially increase traffic volumes on area roadways. As shown in Table 5.C-1 below, the project is projected to result in a net increase of 11,766 weekday daily trips and 16,617 daily trips on the weekends. The increase in traffic generated by the project would significantly impact the level of service (LOS) at intersections, freeway segments and freeway ramps in the vicinity of the project. The project would also impact transit service, pedestrian facilities, and would add construction vehicle traffic to roadways. Feasible mitigation measures are recommended that would reduce many of the project's transportation and circulation impacts to a less-than-significant level. However, a number of the impacts occur at facilities that are outside the City's jurisdiction; responsibility for implementation for the recommended mitigation would require cooperation of another jurisdiction (i.e. City of Pleasant Hill, Contra Costa County, or Caltrans) and therefore, for purposes of a conservative analysis, the impacts must be considered significant and unavoidable. Implementation of all recommended mitigation by the City and other responsible jurisdictions would still result in several significant unavoidable transportation impacts. **Conclusion**: Significant Unavoidable Impacts Following Mitigation.

Table 5.C-1: Alternatives Trip Generation Comparison

Project / Alternative	Weekday Daily	Saturday Daily	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
			Total	In	Out	Total	In	Out	Total	In	Out
Proposed Project	**11,766**	**16,617**	**491**	**261**	**230**	**1,032**	**560**	**472**	**1,994**	**1,049**	**945**
1. No Project (No Build)	5,870	1,174	874	768	106	750	106	644	206	95	111
2. New Office Buildings	5,870	1,174	874	768	106	750	106	644	206	95	111
3. Reduced Project	9,302	13,466	280	149	131	803	445	358	1,699	900	799
4. Revised Project	10,094	13,288	598	362	236	912	445	467	1,166	586	580
5. Big Box Retail	15,485	20,410	741	385	356	1,237	639	598	1,766	864	902

Source: Kittelson & Associates, Inc., April 2016.

b. Alternative 1: No Project (No Build). Under this alternative, demolition of the existing buildings and improvements would not occur, so construction-related traffic impacts would not occur. This alternative would generate substantially fewer total weekday and weekend vehicle trips than the proposed project as shown in Table 5.C-1 above, though AM peak hour traffic generated by the

alternative is projected to be greater than that of the proposed project. Due to the travel demand characteristics of the office use, weekday peak hour traffic generated by this alternative would add to peak hour traffic and result in significant LOS impacts at several intersections. However, this alternative would not result in any significant weekend traffic impacts. Appendix K includes a more detailed comparison of the traffic impacts of each alternative. **Conclusion:** Reduced impacts; Some Significant Impacts Avoided; Several New Significant Impacts.

c. Alternative 2: New Office Buildings. Refer to the Alternative 1 discussion above for a discussion of this alternative's operational traffic impacts, which would be identical to Alternative 2. This alternative would result in temporary construction-related traffic impacts similar to the proposed project. Appendix K includes a more detailed comparison of the traffic impacts of each alternative. **Conclusion:** Reduced Impacts; Some Significant Impacts Avoided; Several New Significant Impacts.

d. Alternative 3: Reduced Project. Similar to the proposed project, this alternative would result in redevelopment of the site, resulting in temporary construction-related traffic impacts similar to the proposed project. The reduced commercial floor area of this alternative would also result in fewer total weekday and weekend vehicle trips than the proposed project as shown in Table 5.C-1 above, and several of the project's significant impacts to intersections would be avoided. Appendix K includes a more detailed comparison of the traffic impacts of each alternative. **Conclusion:** Reduced Impacts; Some Significant Impacts Avoided.

e. Alternative 4: Revised Project. Similar to the proposed project, this alternative would result in redevelopment of the site, resulting in temporary construction-related traffic impacts similar to the proposed project. The reduction of commercial floor area, elimination of the theater, and replacement with 85,000 sf of office use would result in fewer total weekday and weekend vehicle trips compared to the proposed project as shown in Table 5.C-1 above, and several of the project's significant impacts to intersections would be avoided. Appendix K includes a more detailed comparison of the traffic impacts of each alternative. The mix of commercial and office uses would result in fewer significant impacts than Alternative 3, the Reduced Project Alternative, but it would still result in more significant impacts than the office uses evaluated in Alternatives 1 and 2. **Conclusion:** Reduced Impacts; Some Significant Impacts Avoided.

f. Alternative 5: Big Box Retail. Similar to the proposed project, this alternative would result in redevelopment of the site, resulting in temporary construction-related traffic impacts similar to the proposed project. This alternative would generate substantially more daily and weekend vehicle trips than the proposed project as shown in Table 5.C-1 above, and it would have all the significant impacts of the proposed project. Appendix K includes a more detailed comparison of the traffic impacts of each alternative. This alternative would also result in several new significant impacts to area intersections. **Conclusion:** Greater Impacts; Significant Impacts Not Avoided; Several New Significant Impacts.

13. Economic Impact Analysis

a. Proposed Project. As discussed more fully in Section 4.M of the Draft EIR, the project would not have any significant impacts as these relate to urban decay.

The economic impact analysis concluded that while the proposed shopping center could result in some diverted sales and closures of stores in the market area, some store closures in the area would not be expected to contribute to significant physical deterioration of other properties from economic impacts. **Conclusion:** Less Than Significant Impact; Mitigation Not Required.

b. Alternative 1: No Project (No Build). This alternative would not result in redevelopment of the site as a shopping center; the existing office buildings would be fully occupied with new office tenants. Therefore, the office use would not result in diverted sales or closures of stores in the market area and therefore would not contribute to significant physical deterioration of other properties from economic impacts. **Conclusion:** Reduced Impacts. However, under both this alternative and the proposed project, these impacts are less than significant.

c. Alternative 2: New Office Buildings. This alternative would redevelop the site with office buildings that would be fully occupied with new office tenants. Therefore, the office use would not result in diverted sales or closures of stores in the market area and therefore would not contribute to significant physical deterioration of other properties from economic impacts. **Conclusion:** Reduced Impacts. However, under both this alternative and the proposed project, these impacts are less than significant.

d. Alternative 3: Reduced Project. Similar to the proposed project, this alternative would result in redevelopment of the site with a new shopping center. The reduced size of the shopping center would result in fewer diverted sales than the proposed project, and therefore would have fewer economic impacts to other properties in the market area. **Conclusion:** Reduced Impacts. However, under both this alternative and the proposed project, these impacts are less than significant.

e. Alternative 4: Revised Project. Similar to the proposed project, this alternative would result in redevelopment of the site with a new shopping center. This alternative would eliminate the proposed theater, but would still have a grocery store and 220,000 sf of other shopping center uses (retail, restaurants, etc.) as well as an 85,000 sf office building. The reduced amount of commercial floor area would result in fewer diverted sales than the proposed project, and therefore would have potentially fewer impacts to other properties in the market area. **Conclusion:** Reduced Impacts. However, under both this alternative and the proposed project, these impacts are less than significant.

f. Alternative 5: Big Box Retail. Similar to the proposed project, this alternative would result in redevelopment of the site. This alternative would have one large retailer, or several big-box retailers, and would not have smaller individual retail stores or restaurants. The type of tenants and the market area of the retailers would determine the extent of their impact on competing businesses and properties. Because the amount of commercial floor area would be greater than the proposed project, it is assumed that this alternative would have greater economic impacts to other properties in the market area. **Conclusion:** Greater Impacts. However, under both this alternative and the proposed project, these impacts are less than significant.

D. ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires the identification of the environmentally superior alternative in an EIR (CEQA Guidelines Section 15126.6(e)(2)). Based on the above analysis, Alternative 1: No Project (No Build) would have the least number of impacts and, therefore, would be the environmentally superior

alternative. This alternative assumes that the project site would not be redeveloped, but that the existing buildings would be re-occupied by office tenants.

Under CEQA, if the No Project alternative is the environmentally superior alternative, the EIR must identify an environmentally superior alternative from among the other alternatives. Pursuant to the analysis above, Alternative 2: New Office Buildings Alternative would result in fewer environmental impacts than the other "build alternatives" (Alternatives 3, 4, and 5). Like the No Project (No Build) Alternative, Alternative 2 assumes 619,000 sf of office use at the site, and would result in the same number of total daily and weekend trips as Alternative 1, which is substantially less than the proposed project or Alternatives 3, 4, or 5. As such, this alternative would result in fewer traffic impacts (though some traffic impacts would remain significant and unavoidable). Alternative 2 would also result in fewer air quality, greenhouse gas, and noise impacts than the other build alternatives due to its reduced number of vehicle trips.

6.0 CEQA-REQUIRED ASSESSMENT CONCLUSIONS

As required by the California Environmental Quality Act (CEQA), this chapter discusses the following topics: effects found not to be significant, growth-inducing impacts, unavoidable significant environmental impacts, significant irreversible changes, and cumulative impacts.

A. EFFECTS FOUND NOT TO BE SIGNIFICANT

Meetings were held among representatives of the City of Concord, consultants for the City, and the project applicant to preliminarily determine the scope of the Veranda Shopping Center Project EIR. In addition to these meetings, a Notice of Preparation (NOP) was circulated on January 27, 2016 to solicit comments from agencies and the public regarding the scope of this EIR. Written comments received on the NOP were considered in the preparation of the scope for this document and are included in Appendix A. In addition, and Initial Study was prepared pursuant to CEQA Guidelines Appendix G, Environmental Checklist Form, to conduct the preliminary evaluation of the project's potential impacts and determine the environmental topics to be addressed in the EIR, and those that could be excluded from evaluation in the EIR.

The environmental topics analyzed in Chapter 4.0, Setting, Impacts, and Mitigation Measures, represent those topics that were thought likely to result in potentially adverse impacts by professional environmental analysts on the project team as well as members of the public. As noted in Chapter 1.0, Introduction, four environmental topics were considered during the scoping phase, but not addressed in this EIR because it was determined that the project would not cause significant impacts related to these topics: Agricultural Resources; Mineral Resources; Recreation; and Population and Housing. These topics are analyzed in the Initial Study (Appendix B) and are not evaluated in detail this EIR. These conclusions were reached either on the basis that no such resources were present on the site or that the proposed scale and land use of the project simply would not affect the specified topic. See Initial Study (Appendix B) and Chapter 1.0, Introduction.

B. GROWTH-INDUCING IMPACTS

This section summarizes the project's growth-inducing impacts on the surrounding community. According to CEQA, a project is typically considered growth-inducing if it would foster economic or population growth. 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.

The proposed project would demolish approximately 619,000 square feet (sf) of building area at an existing office campus and develop an approximately 375,000 sf shopping center with approximately 1,500 parking spaces, landscaping, and related improvements. As indicated, the project site is currently developed and is located in an urbanized area of City and is surrounded by existing office

and commercial uses. Development of the proposed project would redevelop the existing office campus with a commercial shopping center. The Concord 2030 Urban Area General Plan designates the project site as West Concord Mixed Use, which allows for a mix of office and commercial land uses. Since the adjacent land is already developed, the project would not necessarily induce future development in the vicinity.

Utilities and infrastructure (i.e., water, recycled water, sewer, storm drains, electricity, natural gas, cable and telephone) are readily available adjacent to the site along or under Diamond Boulevard and Galaxy Way to serve the proposed shopping center, and currently serve the existing buildings on the project site. No additional off-site infrastructure is proposed nor would the existing facilities need to be expanded to serve development of the proposed project. Some alterations to the adjacent streets would occur to make necessary adjustments to accommodate turn lanes, etc.

Additionally, the proposed project does not represent a basic industry (i.e., industries that produce products that are exported out of the area to compete in the State and national economy, such as automobile manufacturing, telecommunications, and pharmaceuticals) that would create or result in population growth. Instead, the proposed project responds to and benefits from basic industries, providing services and consumer needs to support the population resulting from basic industries.

In conclusion, the proposed redevelopment of the existing office campus with a commercial shopping center does not represent a growth-inducing impact.

C. UNAVOIDABLE SIGNIFICANT ENVIRONMENTAL IMPACTS

As discussed in Chapters 4.0 of this EIR, all significant impacts could be mitigated to less-than-significant levels with the implementation of the recommended mitigation measures, with the exception of the following transportation and circulation impacts:

TRANS-2: The proposed project would result in unacceptable operations (from LOS D to LOS E in the PM peak hour) at the intersection of Pacheco Boulevard and Center Avenue (#27) under Existing Conditions.

TRANS-3: The proposed project would contribute to the SR-242 Northbound segment north of Concord Avenue operating below the LOS standard during the PM peak hour under Existing Conditions.

TRANS-5: The additional traffic generated by the proposed project would result in unacceptable operations at the intersection of Contra Costa Boulevard and Concord Avenue (#30) during the Saturday peak hour under Near-Term Conditions.

TRANS-8: The additional traffic generated by the proposed project would result in unacceptable operations at the intersection of Contra Costa Boulevard and Concord Avenue (#30) during the Saturday peak hour under Cumulative Conditions.

TRANS-9: The proposed project would contribute to the SR-242 Northbound segment north of Concord Avenue operating below the LOS standard during the PM peak hour under Cumulative Conditions.

TRANS-10: The proposed project would contribute to the SR-242 southbound segment at the off-ramp to Concord Avenue operating below the LOS standard during the AM peak hour under Cumulative Conditions.

TRANS-19: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at Contra Costa Boulevard and I-680 Southbound Ramps (#29) during the AM peak hour under Existing Conditions and the PM peak hour during Cumulative Conditions.

TRANS-20: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at Contra Costa Boulevard and Concord Avenue (#30) during the AM peak hour under Existing Conditions.

TRANS-21: The addition of project traffic would result in unacceptable queue lengths that exceed available vehicle storage at I-680 Northbound Ramps and Willow Pass Road (#36) during the AM peak hour under Existing Conditions and Near-Term Conditions.

TRANS-24: The additional traffic generated by the project would result in unacceptable average arterial speeds on southbound Contra Costa Boulevard between Chilpancingo Parkway and Taylor Boulevard during the AM peak hour under Cumulative Conditions.

TRANS-25: The additional traffic generated by the project would contribute to unacceptable average arterial speeds on northbound Contra Costa Boulevard between 2nd Avenue to Chilpancingo Parkway during the PM peak hour under Cumulative Conditions.

D. SIGNIFICANT IRREVERSIBLE CHANGES

CEQA requires that EIRs assess whether the proposed project would result in significant irreversible changes to the physical environment. The CEQA Guidelines discuss three categories of significant irreversible changes that should be considered. Each is discussed below.

1. Changes in Land Use That Commit Future Generations

The project site is currently developed with 619,000 sf of office buildings. The proposed project would redevelop the office campus with an approximately 375,000 sf shopping center, approximately 1,500 parking spaces, landscaping, and related improvements. Just as the proposed project is redeveloping the office campus with a shopping center, the land owners and City government could redevelop the site in the future to other land uses should the proposed use become obsolete. As a result, proposed changes in land use at the project site would not commit future generations to a substantial change in land uses.

2. Irreversible Damage from Environmental Accidents

No significant environmental damage, such as accidental spills or explosion of hazardous material, is anticipated with development of the proposed shopping center. Compliance with federal, State, and local regulations, as discussed in Section 4.G, Hazards and Hazardous Materials, would reduce the

possibility that hazardous substances within the project site would cause significant irreversible environmental damage.

3. Consumption of Nonrenewable Resources

Consumption of nonrenewable resources includes increased energy consumption, conversion of agricultural lands, and lost access to mining reserves. Because the site has not been used for mineral extraction and is not underlain by mineral resources, loss of access to any minerals would not be considered significant. Additionally, no agricultural (or forestry) resources are located within the project area.

The proposed project would require electricity and natural gas. Development of the project would not result in an inefficient, wasteful, or unnecessary consumption of energy, however. (See discussion in Initial Study in Appendix B of this EIR.) Chapter 3.0, Project Description, and Section 4.F, Greenhouse Gas Emissions, of this EIR discuss energy-conserving measures that would be incorporated into the project.

E. CUMULATIVE IMPACTS

CEQA defines cumulative impacts as "two or more individual effects which, when considered together, are considerable, or which can compound or increase other environmental impacts." Section 15130 of the CEQA Guidelines requires that an EIR evaluate potential environmental impacts that are individually limited, but cumulatively significant. These impacts can result from the proposed project alone or together with other projects.

1. Methodology

For the evaluation of cumulative impacts, CEQA allows the use of either a list of past, present, or reasonably anticipated relevant projects, including projects outside the control of the lead agency, a summary of the projections in an adopted planning document or a thoughtful combination of the two. For this EIR, the cumulative traffic analysis and, therefore, cumulative air quality, noise, and greenhouse gas emissions analyses, used year 2040 for the cumulative condition based on traffic modeling consistent with the current Contra Costs Transportation Agency (CCTA) traffic model that includes assumptions for future land uses and development consistent with build-out of the City's General Plan. The cumulative economic impact analysis is based on conditions in a market area defined in the economic impact analysis prepared for the project (see Section 4.M, Economic Impact Analysis, and Appendix J of this EIR). For all other topic areas, the cumulative impacts analysis used information provided by the City of Concord on currently planned, approved, or proposed projects in the project site vicinity, as listed in Table 6.E-1 below that have the potential to contribute to environmental impacts in the vicinity. The City of Pleasant Hill also provided information regarding currently planned, approved, or proposed projects in the project site vicinity. Information from the Concord General Plan EIR on the cumulative impact of buildout under the General Plan also is used in this analysis, since the project is consistent with the General Plan land use designation and densities for the project site.

Table 6.E-1: Anticipated Cumulative Development in Project Site Vicinity

Project Name	Description	Location	Status
Buffalo Wild Wings	6,470 square foot (sf) full service restaurant	2090 Diamond Blvd., Concord	Under Construction
Oakmont Senior Living	100,000 sf, 76-unit senior assisted living facility	1401 Civic Court, Concord	Under Construction
Golden State Lumber	73,938 sf lumber yard	2180 Diamond Blvd, Concord	Approved
Renaissance Phase II	179 unit apartment	1825 Galindo Street, Concord	Approved
Target Shopping Center Restaurant	4,150 sf restaurant	552-572 Contra Costa Boulevard, Pleasant Hill	Approved

Source: Kittelson & Associates, April 2016.

2. Cumulative Impacts of the Proposed Project

The analysis of cumulative impacts of the proposed project for each of the environmental topic areas is discussed in the corresponding sections in Chapter 4.0, Setting, Impacts, and Mitigation Measures. Refer to Chapter 4.0, for the cumulative impact conclusions for each topic.

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7.0 REPORT PREPARATION

A. REPORT PREPARATION

LSA Associates, Inc., Prime CEQA Consultant: *Preparation of all EIR, except as noted below.*
157 Park Place
Point Richmond, CA 94801
Laura Lafler, Principal-in-Charge
Amy Fischer, Principal
Steven Ross, Associate/Project Manager
Dan Sidle, Wildlife Biologist
Neal Kaptain, Cultural Resources Manager
Timothy Milliken, Botanist
Bridget Lillis, Environmental Planner
Cara Carlucci, Assistant Planner
Marie So, Graphics Technician
Deborah Hensley, Word Processing

ALH Urban & Regional Economics: *Economic Impact Analysis* (including Urban Decay)
2239 Oregon Street
Berkeley, CA 94705
Amy L. Herman, Principal

Baseline Environmental Consulting: *Geology, Soils, and Seismicity; Hydrology and Water Quality; Hazards and Hazardous Materials*
5900 Hollis Street, Suite D
Emeryville, CA 94608
Bruce Abelli-Amen, CH, Principal, Senior Hydrologist
Patrick Sutton, Environmental Engineer
Todd Taylor, REA, Environmental Associate
Cem Atabek, Environmental Engineer

Kittelson & Associates, Inc.: *Transportation Impact Study*
155 Grand Avenue, Suite 900
Oakland, CA 94612
Alice Chen, AICP, Project Principal
Aaron Elias, P.E., Project Manager

B. REFERENCES AND COMMUNICATION

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