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I. INTRODUCTION

A. PURPOSE OF THE EIR

In compliance with the California Environmental Quality Act (CEQA), this Draft Environmental Impact Report (EIR) describes the environmental consequences of the proposed Lowe’s Shopping Center project in the City of Concord. This EIR is designed to fully inform City decision-makers, responsible agencies, and the general public of the proposed project and the potential consequences of project approval. The EIR also examines various alternatives to the proposed project and recommends a set of mitigation measures to reduce or avoid potentially significant impacts.

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, 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 project to be constructed (see Table III-3 in Chapter III, Project Description).

This EIR is both a project EIR and a program EIR. It is a project EIR for the proposed Lowe’s store. All impacts of the construction and operation of the Lowe’s store are addressed on a project level of detail. It is a program EIR for the retail anchor tenant and outparcel developments. The impacts of the construction and operation of the retail anchor tenant and outparcel development are addressed on a program level. Pursuant to CEQA Guidelines Section 15168, any further discretionary action required for the development of the retail anchor tenant and outparcels will be reviewed to determine if the activity would have effects that were not examined in this program EIR. No further environmental review would be required for subsequent activities found to be within the scope of the project described in this program EIR that present no new significant effects and require no new mitigation measures.

B. PROPOSED PROJECT

The proposed project consists of a request for a Preliminary Development Plan (PDP), Use Permit, Tentative Parcel Map, Design Review, and Tree Removal Permit to redevelop an approximately 28± acre site with two, big-box retail buildings (a Lowe’s home improvement store and another retail anchor tenant) and two, small outparcels (or “pads”) that would be developed with retail or restaurant uses. For more information of the proposed project, refer to Chapter III, Project Description.

The project site, consisting of eight parcels totaling approximately 28± acres, is located on Arnold Industrial Way in the North Concord subarea identified by the Concord General Plan, approximately ¼-mile west of the State Route (SR) 4 and SR 242 freeway interchange. Surrounding land uses including the Memory Gardens Memorial Park cemetery to the east, SR 4 to the south, industrial outdoor storage, material stockpiling, and machine shops to the west, and light industrial office uses to the north. Portions of the street frontage are improved with curbs, gutters, and sidewalks.
The project is proposed on the site of the previously proposed Jones Ranch Shopping Center, for which a Draft EIR (State Clearinghouse Number 2005092130) was prepared in 2006. The application for the Jones Ranch project was withdrawn in September 2007. The Jones Ranch Shopping Center proposal included a proposed Wal-Mart store. The currently proposed Lowe's Shopping Center project does not and will not include a Wal-Mart store. Although a Wal-Mart store was proposed as part of the prior Jones Ranch project submitted by the prior property owners (Winton Jones Development Company), the application for that project has been withdrawn. The Ground Lease between Wal-Mart and Winton Jones Development Company was terminated on February 8, 2008. Wal-Mart no longer has any property interest in the project site. Lowe’s has purchased the entire property and is now the property owner. Lowe's has submitted a revised project application for the entire project site. The Lowe's application does not include a Wal-Mart store and Lowe's has no agreement with Wal-Mart regarding the proposed project or project site. Another difference between the Lowe’s application and the previous Jones Ranch proposal is that the Lowe’s project proposes two retail tenant pads, rather than the three pads previously proposed by the Jones Ranch project.

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 April 9, 2008 and was distributed to local, regional, and State agencies.

Comments received by the City on the NOP were taken into account during the preparation of the EIR. The NOP and written comments received on 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. The following environmental topics are addressed in this EIR:

A. Land Use and Planning Policy
B. Transportation and Circulation
C. Air Quality
D. Noise
E. Cultural and Paleontological Resources
F. Geology, Soils and Seismicity
G. Biological Resources
H. Hydrology and Storm Drainage
I. Public Services and Utilities
J. Public Health and Safety/Hazardous Materials
K. Urban Decay
L. Global Climate Change

2. Topics Not Addressed in EIR

The following five topics were considered but not addressed in this EIR because it was determined based on an initial study that the project would not cause significant impacts related to these topics: aesthetics, mineral and energy resources, agricultural resources, recreation, and population and housing. (See discussion in Initial Study in Appendix A.)
a. **Aesthetics.** The project site is located in a predominately industrial area, characterized by extensive outdoor storage and material stockpiling. The existing site is generally in a blighted condition, evidenced by poor on- and off-site maintenance; overgrown weeds and litter scattered along the site’s frontage; disorganized use areas on-site that lack uniformity, cohesive design, and maintenance; and a deficiency of public improvements (e.g., continuous curb, gutter and sidewalk improvements along frontage, undergrounding of utility lines). The proposed commercial uses for the site would not substantially degrade the existing visual quality of the site; instead, they would improve the visual character of the site by including new buildings, associated landscaping, and on- and off-site improvements. Further, the City of Concord Community Design Guidelines require that all new development, including that of the proposed project, be of superior architectural quality and site design. The City’s Design Review Board will review the proposed project for conformance to these requirements. As a result, aesthetic impacts would be less than significant and, as such, are not further analyzed in this EIR.

b. **Minerals, Energy, and Agricultural Resources.** The site has been developed with industrial uses, including outdoor storage, materials stockpiling, and vehicular, nautical, and mechanical repair for many years, and no agricultural resources are present on the site. Additionally, 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. Development of the project would not result in an inefficient, wasteful, or unnecessary consumption of energy. All new development would be required to incorporate energy conservation measures in compliance with Title 24 of the Uniform Building Code. In addition, the Lowe’s store would include “green” features that would reduce energy consumption (see Section IV.L, Global Climate Change). The proposed project would replace existing older industrial buildings that are not energy-efficient with new, energy-efficient buildings constructed in compliance with current Title 24 standards. The project would therefore cause a small change (and potentially a decrease) in energy use on the site and would have negligible or no effect on state, regional, or local energy supplies and energy delivery infrastructure. As a result, impacts on minerals, energy, and agricultural resources would be less than significant and, as such, are not further analyzed in this EIR.

c. **Recreation.** The project site is designated for regional commercial uses in the Concord General Plan, which allows for large-scale commercial developments such as big-box retail. The Preliminary Development Plan (PDP) and Use Permit proposed by Lowe’s are for a commercial development; the project does not propose development of residential or recreational uses. Since no residential uses are planned for this site, there would be no significant demand for recreational facilities. However, employees of the proposed commercial development may use City parks and other public facilities for leisure time activities, the nearest of which are the Tesoro ball fields, located northwest of the project site, and the State Route 4 Bikeway, a Class III bike route through Arnold Industrial Way. 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 evaluated in the EIR.

d. **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 employ a
number of workers, the increase in population created by the project would not constitute a significant
growth-inducing impact nor adversely affect local population. The project would create approxim-
ately 450 to 550 full-time and part-time jobs. Employees could 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 Regional Commercial does not permit residential uses. The site
contains one vacant residence (formerly occupied by a site caretaker). Therefore, development of the
proposed project would not result in the displacement of residences.

D. REPORT ORGANIZATION

This EIR is organized into the following chapters:

- **Chapter I – Introduction:** Discusses the overall EIR purpose, provides a summary of the pro-
  posed action and environmental review process, identifies potentially significant issues and con-
  cerns, and summarizes the organization of the EIR.

- **Chapter II – Summary:** Provides a summary of the impacts that would result from implementa-
  tion of the proposed project, and describes mitigation measures recommended to reduce or avoid
  significant impacts.

- **Chapter III – Project Description:** Provides a description of the project objectives, project site,
  site development history, required approval process, and details of the project itself.

- **Chapter IV – Setting, Impacts and Mitigation Measures:** Describes the following for each envir-
  onmental technical topic: existing conditions (setting), potential environmental impacts and their
  level of significance, and 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 signifi-
  cance of each impact is categorized before and after implementation of any recommended miti-
  gation measures(s).

- **Chapter V – Alternatives:** Provides an evaluation of two alternatives to the proposed project in
  addition to the No Project alternative.

- **Chapter VI – CEQA-Required Assessment Conclusions:** Provides the required analysis of
  growth-inducing impacts, significant irreversible changes, effects found not to be significant,
  unavoidable significant effects, and cumulative impacts.

- **Chapter VII – Report Preparation:** Identifies preparers of the EIR, references used, and the per-
  sons and organizations contacted.

- **Appendices:** The appendices contain the NOP and comments on the NOP and the Initial Study,
  technical calculations, and other documentation prepared in conjunction with this EIR.
II. SUMMARY

A. PROJECT UNDER REVIEW

This EIR has been prepared to evaluate the environmental impacts of the proposed Lowe’s Shopping Center (project) in Concord and Contra Costa County. A more detailed description of the proposed project is provided in Chapter III, Project Description.

B. SUMMARY OF IMPACTS AND MITIGATION MEASURES

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

1. Areas Addressed in the EIR

The potential areas of controversy that surround the project and are evaluated in Chapter IV of this EIR include Land Use and Planning Policy; Transportation and Circulation; Air Quality; Noise; Cultural and Paleontological Resources; Geology, Soils, and Seismicity; Biological Resources; Hydrology and Storm Drainage; Public Services and Utilities; Public Health and Safety/Hazardous Materials; Urban Decay; and Global Climate Change. The only topics not addressed in detail are Aesthetics; Minerals, Energy, and Agricultural Resources; Recreation; and Population and Housing. These topics were addressed in the Initial Study (Appendix A) and in the Introduction chapter of this EIR. Issues raised by the public and agencies during the scoping process include land use and hazard compatibility with Buchanan Field Airport; vehicular congestion; drainage, flooding, and stormwater impacts; and hazards and hazardous substance remediation.

2. Significant Impacts

Under CEQA, a significant impact on the environment is defined as, “...a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance.”¹

Development of the proposed project has the potential to generate environmental impacts in a number of areas. Impacts in the following areas addressed in Chapter IV of this EIR would be less than significant for the project: Land Use and Planning Policy, Noise, Public Services and Utilities, Urban Decay. Impacts in the areas listed below, which are specifically addressed in Chapter IV of this EIR, would be potentially significant for the project. Each of the impacts identified in these areas would be reduced to a less-than-significant level if the mitigation measures noted in this EIR are implemented: Transportation and Circulation; Cultural and Paleontological Resources; Geology, Soils, and

Seismicity; Biological Resources; Hydrology and Storm Drainage; and Public Health and Safety/Hazardous Materials.

3. Significant Unavoidable Impacts

As discussed in Chapters IV and VI of this EIR, all significant impacts could be mitigated to less-than-significant levels with the implementation of the recommended mitigation measures, except in the area of regional air pollutants (see Impact AIR-2).

4. Alternatives to the Project

The following alternatives to the project are considered in this EIR:

- The **No Project alternative**, which assumes the continuation of existing conditions within the project site.
- The **Auto Sales and Service alternative**, which assumes the 28± acre site would be redeveloped with auto dealerships and related auto service uses.
- The **Commercial Recreation alternative**, which assumes the 28± acre site would be redeveloped with approximately 80,000 square feet of commercial recreation area. Based on commercial recreation uses elsewhere in the Bay Area, it is assumed that this alternative would provide for indoor and outdoor facilities such as a rock climbing gym; an indoor challenge ropes course; indoor or outdoor volleyball, basketball, bocce ball, and/or badminton courts; an entertainment center (including activities such as pocket billiards, air hockey, foosball, and darts); meeting facilities; shower, changing and locker rooms; and a bar/restaurant.

The No Project alternative is identified as the environmentally superior alternative. 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 (CEQA Guidelines Section 15126.6(e)(2)). Among the other alternatives, this EIR identifies the Commercial Recreation alternative as the environmentally superior alternative. Each of the alternatives is discussed in detail in Chapter V of this EIR.

C. SUMMARY TABLE

Table II-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 IV. 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 IV and Chapter VI.
<table>
<thead>
<tr>
<th>Environmental Impacts</th>
<th>Level of Significance Without Mitigation</th>
<th>Mitigation Measures</th>
<th>Level of Significance With Mitigation</th>
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<tbody>
<tr>
<td><strong>A. Land Use and Planning Policy</strong></td>
<td></td>
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<tr>
<td>There are no significant land use and planning policy impacts.</td>
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<tr>
<td><strong>B. Transportation and Circulation</strong></td>
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<tr>
<td>TRANS-1: The addition of project traffic to existing traffic in the Existing Plus Project condition would worsen the operation of Intersection 2 (Arnold Industrial Way and SR 4 Westbound Ramps intersection) below the established standard of LOS D to unacceptable LOS E in the PM peak hour.</td>
<td>S</td>
<td>TRANS-1: To mitigate the proposed project’s impact of worsening the existing LOS at Intersection 2 (Arnold Industrial Way and SR 4 Westbound Ramps intersection) to an unacceptable LOS during the PM peak hour under the Existing Plus Project condition, Intersection 2 shall be modified to replace the existing stop sign-controlled traffic device with a new traffic signal. The project applicant’s payment of the unfunded (non-Off-site Street Improvement Program [OSIP]) portion of the cost for this improvement shall constitute the project’s contribution to the installation of the new traffic signal. Said payment of the unfunded (non-OSIP) portion of the cost for this improvement shall be made on a pro-rata basis for each use based on its projected PM peak hour trip generation relative to the overall PM peak hour trip generation for the entire project site at the time of issuance of the building permit for each use. Installing the traffic signal would improve level of service at this intersection to an acceptable level in the Cumulative Plus Project condition (i.e., to LOS A in the PM peak hour from LOS F, as shown in Table IV.B-7). Payment of the unfunded (non-OSIP) portion of the cost for this improvement would reduce the proposed project’s impact to a less-than-significant level.</td>
<td>LTS</td>
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<tr>
<td>TRANS-2: The addition of project traffic to existing traffic in the Existing Plus Project condition would worsen the operation of Intersection 3 (Arnold Industrial Way and Laura Alice Way intersection) to unacceptable LOS E in the PM peak hour.</td>
<td>S</td>
<td>TRANS-2: To mitigate the proposed project’s impact of worsening the existing LOS at Intersection 3 (Arnold Industrial Way and Laura Alice Way intersection) to an unacceptable LOS during the PM peak hour under the Existing Plus Project condition, Intersection 3 shall be modified to replace the existing stop sign-controlled traffic device with a new traffic signal. The project applicant’s payment of the unfunded (non-Off-site Street Improvement Program [OSIP]) portion of the cost for this improvement shall constitute the project’s contribution to the installation of the new traffic signal. Said payment of the unfunded (non-OSIP) portion of the cost for this improvement shall be made on a pro-rata basis for each use based on its projected PM peak hour trip generation relative to the overall PM peak hour trip generation for the entire project site at the time of issuance of the building permit for each use. Installing the traffic signal would improve level of service at this intersection to an acceptable level in the Cumulative Plus Project condition (i.e., to LOS A in the PM peak hour from LOS F, as shown in Table IV.B-7). Payment of the unfunded (non-OSIP) portion of the cost for this improvement would reduce the proposed project’s impact to a less-than-significant level.</td>
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Table II-1 continued

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<tr>
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<th>Level of Significance Without Mitigation</th>
<th>Mitigation Measures</th>
<th>Level of Significance With Mitigation</th>
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<tbody>
<tr>
<td>TRANS-2 continued</td>
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<td>the building permit for each use. Installing the traffic signal would improve level of service at this intersection to an acceptable level in the <em>Cumulative Plus Project</em> condition (i.e., to LOS B in the PM peak hour from LOS F, as shown in Table IV.B-7). Payment of the unfunded (non-OSIP) portion of the cost for this improvement would reduce the proposed project’s impact to a less-than-significant level.</td>
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<td>TRANS-3: The addition of project traffic to existing traffic in the <em>Existing Plus Project</em> condition would worsen the operation of the Intersection 8 (Arnold Industrial Place and SR 4 Eastbound Ramps intersection) to unacceptable LOS F in the PM peak hour.</td>
<td>S</td>
<td>TRANS-3: To mitigate the proposed project’s contribution to the worsening of the existing LOS at Intersection 8 (Arnold Industrial Way and SR 4 Eastbound Ramps intersection) expected to occur in the <em>Existing Plus Project</em> condition, Intersection 8 shall be modified to replace the existing stop sign-controlled traffic device with a new traffic signal. The project applicant’s payment of the City of Concord’s Off-site Street Improvement Program (OSIP) fee shall constitute the project’s contribution to the installation of the new traffic signal. Payment of the OSIP fee shall be made prior to the issuance of any building permit for the project based on the use and building square footage authorized under the permit. Installing the traffic signal would improve level of service at this intersection to an acceptable level in the <em>Cumulative Plus Project</em> condition (i.e., to LOS C in the PM peak hour from LOS F, as shown in Table IV.B-7). Payment of the OSIP fee would reduce the proposed project’s contribution to this impact to a less-than-significant level.</td>
<td>LTS</td>
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<tr>
<td>TRANS-4: Intersection 4 (Arnold Industrial Way and Main Project Access intersection) would operate below an acceptable level of service in the <em>Cumulative Plus Project</em> condition due to project-related impacts.</td>
<td>S</td>
<td>TRANS-4: To mitigate the proposed project’s impacts expected to occur in the year 2030, a traffic signal shall be installed at the Arnold Industrial Way and Main Project Access intersection prior to issuance of the first Certificate of Occupancy. Because the project would trigger the need for the signal, the project applicant shall be responsible for fully funding the cost of installing the traffic signal. Installation of the traffic signal would improve the level of service of Intersection 4 in the <em>Cumulative Plus Project</em> condition to an acceptable level at LOS A in the AM peak hour and LOS A in the PM peak hour.</td>
<td>LTS</td>
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P:\CCD0801\Lowes\PROJECTS\DEIR\Public\2-Summary.doc (7/28/2008) PUBLIC REVIEW DRAFT
<table>
<thead>
<tr>
<th>Environmental Impacts</th>
<th>Level of Significance Without Mitigation</th>
<th>Mitigation Measures</th>
<th>Level of Significance With Mitigation</th>
</tr>
</thead>
</table>
| TRANS-5: Demolition and construction activities associated with the proposed project would result in an increase in traffic to and from the site and could lead to unsafe conditions near the project site. | S | TRANS-5: 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 and require that construction employee parking be provided on the project site to eliminate conflicts with nearby industrial parking areas. The plan shall indicate how parking for construction workers will be provided during construction. The following recommendations shall be considered in the plan:  
- Heavy equipment transport to and from the site shall not occur between the hours of 7:00 a.m. and 9:00 a.m. or 4:30 p.m. and 6:00 p.m. on weekdays.  
- Material importation or exportation shall not occur between the hours of 7:00 a.m. and 9:00 a.m. or 4:30 p.m. and 6:00 p.m. on weekdays.  
- Site ingress and egress shall occur only at the main driveways to the project site parking lot on Arnold Industrial Way. Large truck and construction equipment ingress and egress to the site shall be limited to no more than 15 trucks per hour and shall not occur between the hours of 7:00 a.m. and 9:00 a.m. or 4:30 p.m. and 6:00 p.m. on weekdays.  
- Specified locations for construction worker parking and storage of construction equipment and materials.  
- Warning signs indicating frequent truck entry and exit should be posted on Arnold Industrial Way.  
- Debris and mud on Arnold Industrial 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 SR 4. The recommended truck route to the project site is via the Arnold Industrial Way and SR 4 Westbound Ramps (north side) and the Arnold Industrial Place and SR 4 Eastbound Ramps (south side). | LTS |
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<td><strong>C. Air Quality</strong></td>
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| 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 following actions shall be required of construction contracts and specifications for the project.  
Demolition. The following controls shall be implemented during demolition:  
• Water during demolition of structures and break-up of pavement to control dust generation;  
• Cover all trucks hauling demolition debris from the site; and  
• Use dust-proof chutes to load debris into trucks whenever feasible.  
Construction. The following controls shall be implemented at all construction sites:  
• Water all active construction areas at least twice daily and more often during windy periods; active areas adjacent to existing land uses shall be kept damp at all times, or shall be treated with non-toxic stabilizers to control dust;  
• Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard;  
• Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites;  
• Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites; water sweepers shall vacuum up excess water to avoid runoff-related impacts to water quality;  
• Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets;  
• Apply non-toxic soil stabilizers to inactive construction areas;  
• Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.);  
• Limit traffic speeds on unpaved roads to 15 mph;  
• Install sandbags or other erosion control measures to prevent silt runoff to public roadways;  
• Replant vegetation in disturbed areas as quickly as possible. | LTS |
Table II-1 continued

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<td>AIR-1 continued</td>
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<td>• Install baserock at entryways for all exiting trucks, and wash off the tires or tracks of all trucks and equipment in designated areas before leaving the site; and</td>
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<td>• Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 mph.</td>
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<td>• On-site idling of construction equipment shall be minimized as much as feasible (no more than 5 minutes maximum); and</td>
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<td>• All construction equipment shall be properly tuned and fitted with manufacturer’s standard level exhaust controls.</td>
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<td></td>
<td>Implementation of this mitigation measure would reduce construction period air quality impacts to a less-than-significant level.</td>
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<td>AIR-2: Long-term project-related regional</td>
<td>S</td>
<td>AIR-2: The BAAQMD CEQA Guidelines identifies potential mitigation measures for various types of projects. The following are considered to be feasible and effective in further reducing vehicle trip generation and resulting emissions from the project:</td>
<td>SU</td>
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<td>emissions would exceed the BAAQMD</td>
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<td>• Provide east- and west-bound bus stops.</td>
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<td>thresholds of significance for ozone</td>
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<td>• Provide bicycle route along the project frontage at Arnold Industrial Way.</td>
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<td>precursors</td>
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<td>• Provide sidewalks and/or paths, connected to adjacent land uses, transit stops, and/or a community-wide network.</td>
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<td></td>
<td></td>
<td>• Provide secure and conveniently located bicycle storage.</td>
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<td></td>
<td></td>
<td>• Implement feasible transportation demand management (TDM) measures including a ride-matching program, coordination with regional ridesharing organizations and provision of transit information.</td>
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<td></td>
<td></td>
<td>The implementation of an aggressive trip reduction program with the appropriate incentives for non-auto travel can reduce project impacts by approximately 10 to 15 percent. A reduction of this magnitude would reduce emissions, but emissions of the two ozone precursors (ROG and NOx), and PM$<em>{10}$ would still exceed the significance thresholds. As explained above, for the purposes of the analysis for this project, a conservative approach is taken and the impact of PM$</em>{2.5}$ is assumed significant after mitigation even though this conclusion is not required. There is no mitigation available with currently feasible technology to reduce the project’s regional air quality impact by an additional 25 percent to a less-than-significant level. Therefore, the project’s regional air quality impact would remain significant and unavoidable.</td>
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<td><strong>D. Noise</strong></td>
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<td><strong>E. Cultural and Paleontological Resources</strong></td>
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<td>CULT-1: Project construction could disturb as yet unknown deposits of prehistoric or historical archaeological resources, human remains, or paleontological resources.</td>
<td>S</td>
<td>CULT-1a: If deposits of prehistoric or historic archeological materials are encountered during project activities, all work within 25 feet of the discovery shall be redirected and the project applicant shall retain a qualified archaeologist (i.e., a Registered Professional Archaeologist included in the Northwest Information Center’s Consultants List) to assess the deposit finds and make recommendations. While deposits of prehistoric or historic archeological materials should be avoided by project activities, if the deposits cannot be avoided, they should be evaluated for their California Register eligibility. If the deposits are not eligible for the California Register, avoidance is not necessary. If the deposits are eligible for the California Register, they shall be avoided. If avoidance is not feasible, project impacts should be mitigated in accordance with the recommendations of the evaluating archaeologist and CEQA Guidelines Section 15126.4 (b)(3)(C), which requires implementation of a data recovery plan and avoidance of human remains. Upon completion of the archaeologist’s assessment, the archaeologist shall prepare a report documenting the methods and results, and provide recommendations for the treatment of the archaeological materials discovered. The report shall be submitted to the project applicant, appropriate City departments, and the Northwest Information Center (NWIC) of the California Historical Resources Information System, at Sonoma State University.</td>
<td>LTS</td>
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<td>CULT-1b: If human remains are encountered, all applicable requirements under state law shall be followed, including but not limited to Public Resources Code Sections 5097-5097.6, Health &amp; Safety Code Section 7050.5, and CEQA Guidelines Sections 15064.5 and 15126.4. The requirements include the following. Work within 25 feet of the discovery shall be redirected and the County Coroner notified immediately. At the same time, the project applicant shall retain a qualified archaeologist to assess the human remains discovery. If the human remains are of Native American origin, the Coroner shall notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.</td>
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<td>CULT-1 continued</td>
<td></td>
<td>Upon completion of the archaeologist’s assessment, the archaeologist shall prepare a report documenting the methods and results, and provide recommendations for the treatment of the human remains and any associated cultural materials, as appropriate, in coordination with the recommendations of the MLD. The report shall be submitted to the project applicant, appropriate City departments, and the NWIC (as applicable).</td>
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<td>CULT-1c: The Late Pleistocene alluvium that underlies the project site is highly sensitive for fossil resources and there is a possibility that significant paleontological resources could be encountered during demolition, site preparation, and grading. The bedrock formations that underlie the Late Pleistocene alluvium on the project site also contain fossil resources. Though unlikely to be encountered during project ground-disturbing construction, such bedrock formations shall also be monitored. If paleontological resources are encountered during demolition, site preparation, or grading, all work within 25 feet of the discovery should be redirected until a qualified paleontologist has assessed the discoveries and made recommendations. If the paleontological resources are found to be significant, adverse effects to such resources shall be avoided by project activities where feasible. If project activities cannot avoid the resources, the adverse effects shall be mitigated in accordance with CEQA requirements. At a minimum, mitigation should include data recovery and analysis, preparation of a final report, and the formal transmission or delivery of any fossil material recovered to a paleontological repository, such as the University of California Museum of Paleontology (UCMP), Berkeley. Upon completion of project activities, a final report documenting methods and findings of the mitigation shall be prepared and submitted to the project applicant, appropriate City departments, and a suitable paleontological repository.</td>
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<td>F. Geology, Soils, and Seismicity</td>
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<td>GEO-1: Seismically-induced ground shaking at the project site could result in injuries, fatalities, and property damage.</td>
<td>S</td>
<td>GEO-1: The project applicant shall submit a site-specific geotechnical report prepared by a licensed professional to the City Engineer for review and approval prior to the issuance of building permits. The report shall provide seismic design criteria for proposed structures. The report shall also provide information on the liquefaction potential of the site and provide design recommendations, if necessary, to reduce damage to site improvements from liquefaction.</td>
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<tr>
<td>GEO-2: Differential settlement at the project site could result in damage to project buildings and other improvements.</td>
<td>S</td>
<td>GEO-2: The project applicant shall submit a site-specific geotechnical report prepared by a licensed professional to the City Engineer for review and approval prior to the issuance of building permits. The report shall include specific recommendations for mitigating potential settlement associated with native soil/fill boundaries and areas of different fill thickness, if any. The report shall specifically address treatment of test pit areas to ensure that differential settlement will not occur in those areas. In addition, an evaluation of liquefaction potential shall be performed; if liquefaction potential is identified, the report shall provide recommendations for reducing the liquefaction potential using standard geotechnical methods.</td>
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<tr>
<td>GEO-3: Damage to project structures or property could result from expansive soils.</td>
<td>S</td>
<td>GEO-3: The applicant shall submit a site-specific geotechnical report, prepared by a licensed professional to the City Engineer for review and approval prior to the issuance of building permits. The report shall include recommendations for foundations and improvements, including sidewalks, parking lots, and subsurface utilities, considering expansive soil conditions and incorporate measures to ensure that potential damage due to shrink/swell potential of soils is minimized. Corrective measures, as recommended by a licensed professional, may include removal and replacement of problematic soils with engineered and compacted fill, proper drainage design, or design and construction of improvements to withstand the forces exerted by expected shrink/swell cycles.</td>
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<td>BIO-1: The proposed project could affect protected or special-status species, including barn owls, raptors, and two bat species, should they colonize the site prior to construction.</td>
<td>S</td>
<td>BIO-1a: A preconstruction survey shall be conducted for bats and native protected species of birds (including barn owls) prior to the dismantling and/or destruction of any structures or removal of trees located on the project site. Such surveys should be carried out by a qualified biologist retained by the project applicant. For a bat maternal colony, humane eviction by a qualified bat excluder could occur between September 1 and the middle of October. The bat excluder should be supervised and monitored by a qualified bat biologist. Relocation must occur in a passive manner, such that “take” of bats would not occur. For a bat maternal roost, the best approach is humane eviction by a qualified bat excluder. Humane eviction would occur between September 1 and the middle of October. The maternal roost colony would remain undisturbed prior to August. For</td>
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<td>BIO-1 continued</td>
<td>protected species of birds, the nest would remain undisturbed until the young have fledged. A qualified biologist would determine whether the young have fledged during a survey. The California Department of Fish and Game (CDFG) must be consulted prior to relocation, if take of bats and birds cannot be avoided and the United States Fish and Wildlife Service (USFWS) should be consulted if take of birds cannot be avoided. Preconstruction surveys should occur every 60 days until the demolition of all of the structures on-site is completed. If preconstruction surveys indicate that special-status bats or birds are not likely to use the structures or trees, then preconstruction surveys can cease. If preconstruction surveys indicate the likely use of a structure or tree prior to demolition or destruction, then a preconstruction survey shall be completed within 20 days of demolition or destruction.</td>
<td>BIO-1b: Tree removal should be timed to avoid the nesting season of protected or special-status raptors and other species of birds (February through August). If tree removal or construction, grading, or other project-related improvements are scheduled during this nesting season, the project applicant shall provide a focused survey for active nests of such raptors and other species of birds conducted by a qualified biologist retained by the project applicant within 15 days prior to the beginning of project-related activities. If protected species of raptors are found nesting, a buffer should be established around the nest and, in the case of hawks and owls, the buffer should provide a minimum radius of 300 feet unless the raptor biologist can demonstrate the sufficiency of a less extensive buffer. The buffer area should be fenced and avoided until the young have fledged (determined by a qualified biologist). If a lapse in project-related work of 15 days or longer occurs, another focused survey will be required before project work can be reinitiated. If a newly constructed nest with eggs is present then a buffer should be established around the nest and construction should avoid the buffer area until the young have fledged.</td>
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<td>BIO-2: The proposed project would result in the removal of 27 heritage trees.</td>
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<td>BIO-2: To satisfy General Plan tree preservation policies and Municipal Code Section 114-67(a), Heritage Trees, any heritage tree lost or removed due to the proposed project shall be replaced by a native tree at a ratio of 3:1 (replacement:removed).</td>
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<td>HYD-1: Construction activities could result in degradation of water quality in Suisun Bay by reducing the quality of stormwater runoff.</td>
<td>S</td>
<td>HYD-1g: For each phase of the proposed project, the project applicant shall prepare a Storm Water Pollution Prevention Plan (SWPPP) in compliance with the terms of the State Construction General Permit. The SWPPP shall be reviewed and approved by City staff prior to the issuance of building permits to ensure it has been designed to reduce potential impacts to surface water quality through the construction period of the project. The SWPPP must be maintained on-site and made available to City inspectors and/or Water Board staff upon request. The SWPPP shall include specific and detailed Best Management Practices (BMPs) designed to mitigate construction-related pollutants. At minimum, BMPs shall include practices to minimize the contact of construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives) with storm water. The SWPPP shall specify properly designed centralized storage areas that keep these materials out of the rain.</td>
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<td>HYD-1b: An important component of the stormwater quality protection effort is the knowledge of the site supervisors and workers. To educate onsite personnel and maintain awareness of the importance of stormwater quality protection, site supervisors shall conduct regular tailgate meetings to discuss pollution prevention during each phase of the project. The frequency of the meetings and required personnel attendance list shall be specified in the SWPPP.</td>
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<td>HYD-1c: The SWPPP prepared for each phase of the project shall specify a monitoring program to be implemented by the construction site supervisor. The program must include both dry and wet weather inspections. In addition, in accordance with State Water Resources Control Board Resolution No. 2001-046, monitoring will be required during the construction period for pollutants that may be present in the runoff that are “not visually detectable in runoff.” Water Board and/or City personnel, who may make unannounced site inspections, are empowered to levy considerable fines if it is determined that the SWPPP has not been properly prepared and implemented.</td>
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<td><strong>HYD-1 continued</strong></td>
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<td>HYD-1d: BMPs designed to reduce erosion of exposed soil may include, but are not limited to, soil stabilization controls, watering for dust control, perimeter silt fences, placement of fiber rolls, and sediment basins. These BMPs shall be implemented during construction of each phase of the proposed project. The potential for erosion is generally increased if grading is performed during the rainy season as disturbed soil can be exposed to rainfall and storm runoff. If grading must be conducted during the rainy season, the primary BMPs selected shall focus on erosion control (i.e., keeping sediment on the site). End-of-pipe sediment control measures (e.g., basins and traps) shall be used only as secondary measures. Entry and egress from the construction site shall be carefully controlled to minimize off-site tracking of sediment. Vehicle and equipment wash-down facilities shall be designed to be accessible and functional during both dry and wet conditions. For each phase of the project, City staff shall review and approve the SWPPP prior to approval of the grading plan. Implementation of this mitigation would reduce this impact to a less-than-significant level.</td>
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<td><strong>HYD-2</strong>: Operation of the project could result in discharge of pollutants and increase the rate and volume of stormwater discharges, causing degradation to the quality of receiving waters.</td>
<td>S</td>
<td>HYD-2a: The City shall review and approve the site-specific SWQCPs prior to approval of the grading plan. The SWQCPs shall comply with all applicable regulations for stormwater treatment and flow control (to address potential hydromodification impacts), including C-3 provisions. HYD-2b: Provision C.3.e requires municipalities to verify operation and maintenance of facilities installed in their jurisdictions. As a condition of project approval, a maintenance agreement to be executed or a permit to operate the stormwater facilities shall be obtained. In either case, the City will require an annual fee to offset the cost of inspecting the site to verify that the facility is being maintained. If the facilities are not maintained adequately, the City would be empowered to implement enforcement action. Implementation of this mitigation would reduce this impact to a less-than-significant level.</td>
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<tr>
<td>HYD-3: Water supply well(s) at the project site, if not properly decommissioned, could be damaged during construction, potentially causing impacts on groundwater quality.</td>
<td>S</td>
<td>HYD-3: Prior to the issuance of occupancy permits, the existing wells shall be properly abandoned and documented as such in compliance with the requirements of Contra Costa County Department of Environmental Health and California Department of Water Resources, California Well Standards. Prior to issuance of occupancy permits, any additional wells that may be discovered during site preparation shall either be: 1) Properly abandoned and documented as such in compliance with the requirements of Contra Costa County Department of Environmental Health and California Department of Water Resources, California Well Standards; or 2) Inspected by a qualified professional to determine whether the well is properly sealed at the surface to prevent infiltration of water-borne contaminants into the well casing or surrounding gravel pack. The California Well Standards require an annular surface seal of at least 20 feet for water supply wells. If any of the wells are found not to comply with this requirement, the applicant shall retain a qualified well driller to install the required seal. Implementation of this mitigation would reduce this impact to a less-than-significant level.</td>
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**I. Public Services and Utilities**

There are no significant public service and utilities impacts.

**J. Public Health and Safety/Hazardous Materials**

HAZ-1: Development of the project could potentially expose construction workers and future site workers to hazardous concentrations of contaminants from soils and groundwater at the site. | S | HAZ-1a: Prior to the issuance of the first permit for ground disturbance activities for the project (other than those that might be necessary for any further investigation or remediation activities), the project applicant shall submit documentation of (1) a subsurface investigation at the 2001 Arnold Industrial Way property, prepared by a qualified environmental professional; and (2) removal of the water supply well at the project site in accordance with applicable laws and regulations. | LTS |
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<td>HAZ-1 continued</td>
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<td>HAZ-1b: Prior to the issuance of the first permit for ground disturbance activities for the project (other than those that might be necessary for any further investigation or remediation activities), a Risk Management Plan shall be prepared by the project applicant. The Risk Management Plan shall address the proper investigation, remediation, and disposal of contaminated soils and groundwater that may be discovered during construction activities and shall incorporate the findings and recommendations of environmental investigations at the project site. The Risk Management Plan shall be peer-reviewed by a qualified environmental professional retained by the City. The City-approved Risk Management Plan shall be in effect until such time it is superseded by a Risk Management Plan approved by the RWQCB.</td>
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<td>HAZ-2: Demolition of any structures containing lead-based paint, asbestos-containing building materials, or other hazardous materials could release airborne particles of hazardous materials, which may affect construction workers and the public.</td>
<td>S</td>
<td>HAZ-2: As a condition of approval for any demolition permit for a structure at the project site, the project applicant shall provide a lead-based paint and asbestos-containing material survey prepared by a qualified environmental professional for the structure(s) proposed to be demolished. Based on the findings of the survey, identified asbestos hazards shall be abated by a certified asbestos abatement contractor in accordance with the regulations and notification requirements of the Bay Area Air Quality Management District. Federal and State construction worker health and safety regulations shall be required during renovation or demolition activities, and any required worker health and safety procedures shall be incorporated into a management plan for the project prepared by a qualified environmental professional. If loose or peeling lead-based paint is identified, it shall be removed by a qualified lead abatement contractor and disposed of in accordance with existing hazardous waste regulations. Other hazardous wastes generated during demolition activities, such as fluorescent light tubes, mercury switches, and computer displays, shall be managed and disposed of in accordance with existing hazardous waste regulations.</td>
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<tr>
<td>HAZ-3: Improper use or transport of hazardous materials during construction activities could result in releases affecting construction workers and the general public.</td>
<td>S</td>
<td>HAZ-3: A Risk Management Plan shall be prepared for project construction and reviewed by the RWQCB ((see discussion under Impact HAZ-1). The Risk Management Plan shall address the proper investigation, remediation, and disposal of contaminated soils and groundwater that may be discovered during construction activities. In addition, all use, storage, disposal, and transport of hazardous materials during construction activities shall be performed in accordance with existing local, State, and federal hazardous materials. No further mitigation is required.</td>
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<tr>
<td><strong>K. Urban Decay</strong></td>
<td><strong>There are no significant urban decay impacts.</strong></td>
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<tr>
<td><strong>L. Global Climate Change</strong></td>
<td><strong>There are no significant global climate change impacts.</strong></td>
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III. PROJECT DESCRIPTION

This chapter describes the proposed Lowe’s Shopping Center project (proposed project) that is evaluated in this Environmental Impact Report (EIR). A description of the proposed project’s regional and planning context, objectives, and background is included, in addition to a discussion of required project approvals and entitlements.

A. PROJECT SITE

The following section describes the project site’s location, surrounding land uses, and site characteristics.

1. Location

The project site, comprising 28± acres, is located within the City of Concord in Contra Costa County, approximately 2 miles east of the City of Martinez and 30 miles northeast of the San Francisco Bay in north-central Contra Costa County, as depicted on Figure III-1. Interstate 680 (I-680) passes through the City in a north-south alignment, and State Route 4 (SR 4) traverses the northern portion of the City in an east-west alignment providing regional access to Concord. State Route 242 (SR 242) also traverses Concord, but is a localized freeway, diverging from I-680 near Monument Boulevard and connecting to SR 4 approximately 4 miles northeast, creating a triangular connection of the three freeways within the City. The SR 4 freeway ramps at Arnold Industrial Way and Arnold Industrial Place provide regional access to the project site, and are located approximately ½-mile west of the site. The project site is located on the north side of Arnold Industrial Way approximately ¼-mile west of the SR 4/SR 242 freeway interchange.

2. Surrounding Land Uses

The project site is located in a predominately industrial area, and is bounded by the Memory Gardens Memorial Park cemetery to the east also fronting Arnold Industrial Way; by light industrial, research and development, and office uses to the north fronting Nelson Avenue; and by heavier industrial uses to the west, characterized by extensive outdoor storage areas, machine shops and manufacturing, and material stockpiling fronting Laura Alice Way. The project site excludes a small parcel supporting a Nextel wireless telecommunications business housed in a concrete block building located along the project’s site frontage. Further west and north, the area is surrounded by the Tesoro ball fields. Directly south of the project site, and parallel to Arnold Industrial Way, is SR 4, which is a partially elevated, above-grade freeway in this location. Industrial uses similar to those around the project site are also located south of SR 4, along with medium-density residential condominiums and mobile homes. To the southeast, across SR 4 and SR 242, is the Olivera/Port Chicago Planning Subarea consisting primarily of detached single-family residential communities. To the southwest, also across SR 4, is the Solano Drive-In, which operates as a drive-in theater on weekday evenings and hosts a weekend flea market. Further southwest is Buchanan Field Airport, which is owned and operated by Contra Costa County. Existing land uses in the vicinity of the project site are depicted in Figure III-2.
**FIGURE III-1**

*Lowe's Commercial Shopping Center Project EIR*

*Project Vicinity Map and Regional Map*

**LEGEND**

- **PROJECT AREA**

**SOURCE:** CALIFORNIA STATE AUTOMOBILE ASSOCIATION, 2005.

E:\CDD0801\figures\Fig_III1.ai (05/1/08)
Figure III-2

Lowes Shopping Center Project EIR
Aerial Photo of Project Site and Surrounding Area
3. **Site Characteristics**

The 28± acre project site, as seen from Arnold Industrial Way, contains buildings and open areas that until recently were occupied by industrial uses that included extensive outdoor storage areas, material stockpiling, machine shops, storage containers, automobile and boat repair shops and storage, and used and new auto sales and storage. The project site is generally in a blighted condition, evidenced by poor on- and off-site maintenance; overgrown weeds and litter scattered along the site’s frontage; disorganized use areas on-site that lack uniformity, cohesive design, and well-kept infrastructure; and a deficiency of public improvements (e.g., continuous curb, gutter and sidewalk improvements along frontage, undergrounding of utility lines). Interspersed among the various uses are large, open asphalt paved areas. Photos III-1 through III-6 provide views of the project site, as seen along its frontage on Arnold Industrial Way. Figure III-3 provides an aerial of the project site depicting the existing structures and view locations for each of the six photos.

The following generally describes the various structures and existing and former uses on the project site.

- **Northwestern portion of site** – Formerly occupied by new and used car storage.
- **Northeastern portion of site** – Jones single-family residential compound surrounded by lush ornamental landscaping and enclosed by cyclone fencing.
- **Farthest east parcel** – Undeveloped, vacant parcel extending the north-south length of the project site, and covered with non-native grasses, and native and non-native trees.
- **Southeastern portion of site** (south of residence) – Formerly used for unstructured storage of construction equipment, tree service equipment (e.g., chippers, trucks), and storage containers.
- **Central portion of site** – A grouping of two to three large industrial buildings that formerly housed machine shops, auto and boat repair, and towing businesses.
- **Southwestern portion of site** – Currently occupied by used auto storage and sales.
- **Centralwestern portion of site** – Formerly used for construction company equipment including piles of materials, oversized machinery, and small office buildings.

No formal parking areas, vehicular drive aisles, or site circulation is currently provided on the project site. Instead, the existing parking and site circulation patterns occur informally. Similarly, ingress and egress from Arnold Industrial Way via six legal access driveways are loosely provided at various intervals along the street frontage.

The relatively flat site is covered with asphalt and generally lacking vegetation. Exceptions to this include ornamental landscaping immediately adjacent to the existing residential compound, and non-native ruderal grasses and thistle (e.g., star thistle, wild radish, wild oat) and native and non-native trees on the farthest east, vacant parcel. Approximately 108 trees are currently on the project site, the majority of which are located on the farthest east five-acre undeveloped parcel.

The 28± acre project site is generally flat, sloping gently to the west-southwest with an average elevation of 35 feet above mean sea level.
The project site is designated Regional Commercial on the Concord 2030 Urban Area General Plan land use map and is zoned Planned District (PD). The General Plan and zoning designations, descriptions, and applicability are described more fully in Chapter IV.A, Land Use and Planning Policy.

B. PROJECT OBJECTIVES

The objectives of the proposed project are as follows:

- Design a project consistent with the City of Concord General Plan, Zoning Code, and Central Concord Redevelopment Plan.
- Develop a retail power center with two major commercial retail tenants as anchors with additional complementary uses in out-parcel commercial pads.
- Introduce commercial retail uses into the North Concord area to serve residents of this area and surrounding communities and rejuvenate the older industrial area.
- Develop major commercial retail project adjacent to and visible from the freeway.
- Develop a project with a high quality architectural design with features that soften the scale and mass of the buildings. Provide landscaping to soften the design and create a pleasant, attractive appearance.
- Develop a shopping center that minimizes potential conflicts among users.
- Provide stores that will contribute significant economic and other benefits to the City and community in terms of increased public revenues, employment opportunities, shopping opportunities and community programs.

C. PROPOSED PROJECT

This EIR considers the environmental effects of a shopping center proposed by Lowe’s (the project applicant) totaling approximately 334,112 square feet of building area. The building area total consists of (1) a 137,933-square-foot Lowe’s building plus 31,179-square-foot garden center, (2) a 155,000-square-foot building for a retail anchor tenant, and (3) 10,000 square feet of retail/restaurant building space on two outparcels. The Lowe’s and retail anchor tenant parcels would provide 1,617 parking spaces, as described more fully below. Parking on the two outparcels would be provided in accordance with City Code requirements for their respective uses. The project site plan is illustrated in Figure III-4.

1. Retail Buildings

The following provides a description of the two, major retail tenants planned for the project site (i.e., Lowe’s and a future large retail tenant) and two future retail and restaurant tenant pads.

a. Lowe’s. The Lowe’s building is proposed on a 13.2-acre parcel located to the rear of the project site, in the northwest corner. The Lowe’s building would be set back approximately 480 feet from Arnold Industrial Way, with its entry, customer loading area, and garden center oriented south toward Arnold Industrial Way.
PHOTOS III-1 & 2

Photo III-1

Photo III-2

Lowe’s Shopping Center Project EIR
Photos of the Project Site
Photos of the Project Site
FIGURE III-4

Lowe's Commercial Shopping Center Project EIR
Site Plan

SOURCE: AMS ASSOCIATES, INC., 2008
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The Lowe’s building would have three customer entrances located along the building’s south-facing façade, one at the Garden Center, one located in the center of the building and the third provided by the customer loading canopy at the eastern end of the building. Square footage details for the proposed Lowe’s building and garden center area are provided in Table III-1.

b. Future Retail Anchor Tenant. A large retail anchor tenant building of approximately 155,000 square feet is also proposed on a 13-acre parcel located at the northeast corner of the project site. The retail tenant is not known at this time. The site plan shows the conceptual building pad location and size of the retail building. The building configuration and site layout may be modified but would be generally as depicted on the site plan. This EIR assumes that the parcel would be developed as depicted on the site plan and may include outdoor sales or storage areas. Any outdoor sales or storage areas would be included in the 155,000-square-foot building area. The use would be a large-scale retail use consistent with the Regional Commercial land use designation under the General Plan. The future tenant would need to obtain a separate Use Permit approval from the City in order to locate in the shopping center.

c. Tenant Pads. In addition to the Lowe’s and future retail anchor tenant parcels, the project would create two tenant pads of 1.11 and 0.52 acres in area, located adjacent to Arnold Industrial Way, for future retail or restaurant uses. Each tenant pad would be developed with up to 5,000 square feet of retail or restaurant space, adding up to 10,000 square feet of additional retail and restaurant space to the shopping center.

2. Store Operations

a. Lowe’s. Lowe’s would operate Monday through Saturday from 6:00 a.m. to 10:00 p.m., and Sunday from 7:00 a.m. to 8:00 p.m. A total of approximately 130 to 180 jobs would be generated from Lowe’s, comprising a mix of full- and part-time positions. Approximately 75 percent of the jobs would be full-time positions.

b. Retail Anchor Tenant. While the future retail anchor tenant is not known at this time, it is anticipated that the hours of operation would be similar to Lowe’s. The retail anchor tenant could be expected to generate approximately 300 to 350 jobs, based on a standard commercial job generation rate of one job per 500 square feet of retail building area. While this standardized estimate is high compared to the jobs estimate for the similarly-sized Lowe’s store, it provides a conservative (“worst-case”) basis for evaluating impacts of this new employment.

c. Tenant Pads. While future tenants for the two retail/restaurant pads are unknown at this time, it is anticipated that their hours of operation would be similar to that of other similar retail/restaurant

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establishments located in urban areas. The maximum of 10,000 total square feet provided by these two pads would result in approximately 20 additional retail jobs (applying the standard commercial job generation rate of one job per 500 square feet of retail building area).

3. **Circulation and Parking**

The site currently has six access/entry points, randomly distributed across the 1,100-foot-long Arnold Industrial Way frontage. Development of the proposed project would result in the removal of all six existing driveways, which would be replaced with five new driveways strategically dispersed across the site’s frontage, with each leading to at-grade parking areas (see Figure III-4). The primary shopping center entrance would be located in the center of the site’s frontage and would be improved to provide controlled access with a new traffic signal. Arnold Industrial Way would be restriped to provide a dedicated center turn lane for eastbound traffic entering the shopping center. (This center turn lane would be “left turn in” only and would not serve cars leaving the site.) To accommodate the additional lane on Arnold Industrial Way, the roadway would be widened eight feet and an additional eight feet of right-of-way would be dedicated for public sidewalks, curbs/gutters, and easements along the project site’s frontage.

Westbound traffic would use one westbound lane for through traffic and shopping center ingress and egress. The three eastern driveways would provide one ingress lane and two egress lanes; one dedicated left (eastbound) egress lane, and one dedicated right (westbound) egress lane. The two western driveways would be two-lane, with one ingress and one egress lane each. All driveways would be approximately 40 feet wide, excepting the second driveway from the west which would be 30 feet wide. Egress from the four non-signalized driveways would be stop sign-controlled, with lanes varying in width from 12 to 20 feet.

The project would construct two separate at-grade parking areas totaling 1,617 parking spaces for the Lowe’s and retail anchor tenant parcels. The parking areas would be located between the two pads along Arnold Industrial Way and the two big-box stores. The Lowe’s parcel would provide 752 parking spaces, or 5.0 spaces per 1,000 square feet of building area and 2.0 spaces per 1,000 square feet of garden center outdoor sales and storage area, as required by the City’s Zoning Ordinance. The retail anchor tenant parcel would provide 865 parking spaces, or 5.58 spaces per 1,000 square feet of building area, which exceeds the requirement of the Zoning Ordinance. The required parking for the two tenant pads would be provided within each pad, and would be reviewed for conformance with the Zoning Ordinance as part of the development review processing for each pad.

4. **Merchandise Deliveries to the Shopping Center**

a. **Lowe’s.** Delivery trucks serving Lowe’s would approach the project site from the SR 4/Solano Drive freeway ramps in an eastbound direction on Arnold Industrial Way, entering the project site at the farthest east driveway. The designated truck route traverses the eastern and northern (rear) edges of the project site (see Figure III-4). One partially below-grade truck loading dock with three individual side-by-side loading bays, located in the northwest corner of the building and project site, would be used for unloading truck deliveries. A truck turn-around would be located adjacent to the loading dock to facilitate truck maneuvering. In addition, a flat-bed unloading area would be located behind Lowe’s at the northeast corner of the building. These trucks would be unloaded by forklift. Garden Center trucks would be staged on the west side of the Garden Center and unloaded by forklift.
Trucks would exit at the farthest west driveway, turning right (westbound) on Arnold Industrial Way and continuing on to the SR 4/Solano Drive freeway on-ramp.

Lowe’s truck deliveries would occur as follows:

- 10 to 15 WB-67 trucks\(^2\) per day would deliver general merchandise during normal store operation hours from 6:00 a.m. to 10:00 p.m. Monday through Saturday and from 7:00 a.m. to 8:00 p.m. on Sunday.
- 6 to 10 smaller vendor trucks would make deliveries five days a week between the hours of 6:00 a.m. and 10:00 p.m.

b. **Future Retail Anchor Tenant.** The retail anchor tenant is not known at this time, and therefore the specific time of day and location of vendor deliveries are unknown. For analysis purposes, it is assumed that the number and time of day of truck deliveries would be approximately the same as those proposed for Lowe's. The retail anchor tenant would require additional City Use Permit and Design Review approval. Through this additional review process, the time of day that vendor delivery trucks visit the site and the location where deliveries would occur would be reviewed and coordinated.

c. **Tenant Pads.** Vendor delivery trucks serving the two retail/restaurant tenant pads are anticipated to visit the site less frequently than trucks for Lowe’s and the retail anchor tenant. Because no specific development is proposed for these two tenant pads at this time, however, the specific time of day and location of vendor deliveries are unknown. For analysis purposes, it is assumed that the pads would generate about four truck trips per day that would occur mostly in the morning. Development of the two tenant pads would require additional City Use Permit and Design Review approvals. Through this additional review process, the time of day that vendor delivery trucks visit the site and the location where deliveries would occur would be reviewed and coordinated with the individual tenant pad site plans.

5. **Building and Site Design, Landscape/Hardscape, and Signage**

a. **Building Design.** The architectural design, colors, materials and site design for each site will be reviewed by the City’s Design Review Board. The current Design Review application includes building elevations for Lowe’s and the site design and landscaping for both Lowe’s and the future retail anchor tenant. The Lowe’s building elevations are the same design previously reviewed by City staff and recommended for approval by the Design Review Board as part of the Jones Ranch Shopping Center project.

(1) **Lowe’s.** The design of the Lowe’s building would have a contemporary, Spanish architectural influence in its detailing, colors, and materials, thus creating a cohesive architectural theme throughout the shopping center. Architectural materials would include stone veneer, a clay tile roof, and split face concrete block to provide interest and depth so as to break up and soften the façade. Exterior wall finish colors would be earth toned, as well, primarily being shades of brown, brick reds, and beiges. The vertical wall plane would be broken up and softened with protruded repeating arches, trellis-covered walkways, stone veneer treated square columns, varying roof lines

\(^2\) A “WB-67 truck” is a truck that has 67 feet between the front and the rear-most wheel axle. Wheelbase (WB) is the distance, in feet, measured between the front wheel axle of a vehicle and its rear-most wheel axle.
and shapes, and a horizontal reveal, all of which would create depth, shadow, and articulation of the building’s façade. Figure III-5 provides the preliminary elevations for the Lowe’s building.

(2) Future Retail Anchor Tenant and Tenant Pads. The proposed project does not include building designs for the future retail anchor tenant and two small tenant pads fronting Arnold Industrial Way. However, design review would be required for each site to ensure that the design, materials, and architectural detailing of future buildings would be consistent and compatible with the overall quality of the shopping center’s architectural theme, materials, and colors.

b. Landscaping and Hardscaping. A preliminary landscape/hardscape plan for the Lowe’s and future retail anchor tenant is depicted in Figure III-6. The landscape plan includes 500 new trees dispersed throughout the site including shade trees within in the parking lot interior and accent trees and shrubs around the site perimeter. Decorative and colored hardscape paving would be provided at each driveway entry, along the façades of the anchor tenants’ buildings, and along pedestrian walkways between the parking areas to enhance the site’s aesthetic appeal, as well as to provide visual connections among the various businesses on the site.

Design review would be required for the landscape plan for the two outparcels to ensure they are consistent with the overall landscape theme for the shopping center.

c. Signage. The request for signage is not a part of the proposed project. Signage would be subject to City of Concord codes and requirements to ensure that it complements the building architecture and landscaping of the project. Sign approvals would be requested under a master sign program for the entire shopping center, should the proposed project be approved.

6. Utilities

Because the project site has supported industrial uses, public utilities would be available to serve the proposed shopping center. These utilities include water, sanitary sewer, storm water drainage, power and communications, as described below.

a. Water Service. The project would install a new 8-inch water main on the site with connections to the public water mains in Arnold Industrial Way to provide adequate fire protection water flow and potable water use for the proposed development. The existing groundwater well on the project site would be properly abandoned in conformance with regulatory requirements.

b. Sanitary Sewer. Two existing, north-south-running sanitary sewer easements are located on the project site; one is generally located in the center of the site, and the other is located on the western half of the site and partially traverses under the proposed Lowe’s building pad.

The portion of the western easement under the proposed location for the Lowe’s building (i.e., the northern half of the easement) would be quitclaimed and the pipes removed as a part of project approval. The southern half of the easement would be retained and would be used by Lowe’s and the tenant buildings to discharge sewage waste before the waste is collected in the public sewer system in Arnold Industrial Way.
Lowe's Commercial Shopping Center Project EIR
Preliminary Lowe's Building Elevations

FIGURE III-5

Source: NADLER ARCHITECTS, INC., 2008
E:\CDD0080\figures\Fig_III5.ai (06/4/08)
The sewer easement traversing the center of the project site would be quitclaimed and the pipes removed as a part of project approval. As a result, the retail anchor tenant would connect directly to the sewer collection system located in Arnold Industrial Way.

c. Storm Water. An existing storm drainage line located north of the proposed future retail anchor tenant building pad would be rerouted through the site to discharge into the storm drainage line in Arnold Industrial Way. Storm drainage on the site would be provided via a network of underground pipes, catch basins, curbs and gutters to collect surface water runoff throughout the site. The runoff would be filtered prior to discharging into the public storm drainage system located in Arnold Industrial Way.

The proposed storm water management system for this project is more fully described and evaluated in Section IV.H, Hydrology and Water Quality. The system has been designed in accordance and consistent with regulatory criteria and sound engineering practice by incorporating storm water detention and water quality Best Management Practices (BMPs).

d. Power and Communications. Electricity and natural gas would be provided to the project site by Pacific Gas and Electric Company (PG&E).

A number of telecommunications providers currently serve Concord. AT&T provides telephone and DSL internet service, Comcast provides cable television services citywide, and Astound Broadband provides telephone, cable television, and cable internet services citywide. These services are currently available at the project site.

Existing overhead power and communication utility lines along the project site’s frontage on Arnold Industrial Way would be relocated to an underground conduit as a part of the project’s off-site public improvements.

7. Demolition

All existing structures, asphalt paved areas, and landscaping would be demolished and removed as part of the project. Construction debris, such as old foundations, pavements, utilities, and structures, would be collected and off-hauled to the Pittsburg Transfer Station and Recycling Center. The approximately 37,000 square feet of buildings that would be demolished would yield approximately 15,000 cubic yards of solid waste. The removal of the existing asphalt and aggregate base would create an additional 21,900 cubic yards of solid waste. The City of Concord Construction and Demolition Recycling Ordinance would regulate the recycling of demolition waste on the site. See further discussion in Section IV.I, Public Services and Utilities.

8. Grading

Site topography is generally flat, with an overall slope of 1.3 percent or less. The five new driveways would be slightly steeper, with maximum grades of two percent, per City standards. Grading of the site would require approximately 45,920 cubic yards of cut material and 32,218 cubic yards of fill material, resulting in the export of approximately 13,702 cubic yards of material from the site.
9. **Project Construction**

The applicant anticipates that the proposed project would be constructed in two phases, as follows.

*Phase 1* would consist of development of the Lowe’s store and on- and off-site improvements. On-site improvements would include the Lowe’s building, parking, landscaping, and driveways designed to support the shopping center. Off-site improvements would include the provision of a new sidewalk along the north side of Arnold Industrial Way, construction of a new westbound bus stop on Arnold Industrial Way, undergrounding of overhead utility lines along the project site’s frontage, installation of a new traffic signal providing controlled access to the site’s primary entrance, a Class III bike lane along the project site frontage, and the widening and restriping of Arnold Industrial Way to add a third, center lane to provide protected eastbound ingress to the site. Phase 1 construction would begin approximately 4 months after final entitlement approval. Construction would last approximately 8 months, with site demolition and construction taking about 2 months, building construction about 5 months, and store merchandising about 1 month.³

*Phase 2* would consist of construction of the future retail anchor tenant building and the two retail/restaurant tenant pads. Construction would take about eight months.⁴

The applicant anticipates that Phase 1 construction would begin in 2009 and Phase 2 construction would begin in 2010.⁵ To ensure a conservative (worst-case) evaluation, however, some of the analyses in this EIR (e.g., traffic) assume that the project would be constructed all at once, rather than in two phases.

D. **DISCRETIONARY ACTIONS**

The proposed project would require a series of discretionary actions as discussed below.

1. **EIR Certification**

Certification of this EIR would be the first discretionary City action necessary for the project.

2. **Preliminary Development Plan (PDP)**

A Preliminary Development Plan (PDP) is requested to ensure that the mix of land uses and development standards on the site are consistent with General Plan policies, as required by the Planned District zoning.

3. **Use Permit**

A Use Permit is requested to authorize the proposed retail shopping center, consistent with the Planned District requirements. The Use Permit conditions of approval would address development standards including building setbacks and heights, lot sizes, land use controls, and site design controls.

³ Tim Cremin, Meyers Nave, e-mail communication, May 23, 2008.
⁴ Ibid.
⁵ Ibid.
III. PROJECT DESCRIPTION

4. Tentative Parcel Map
A Tentative Parcel Map is requested to reconfigure eight existing parcels into four new parcels.

5. Design Review
Design Review is requested to authorize the proposed building architecture and landscaping and to ensure consistency with City of Concord Community Design Guidelines.

6. Tree Removal Permit
A Tree Removal Permit is requested to authorize the removal of the 27 heritage trees (out of the 108 trees) on the project site that would need to be removed to accommodate the proposed project.

7. Subsequent Discretionary Actions
The other (non-Lowe’s) retail anchor tenant and retail pad tenants would require subsequent Use Permit and Design Review approvals from the City. When these applications are received, the City would determine whether any additional environmental review is necessary for these actions.

E. USE OF THIS EIR
A number of permits and approvals, including the discretionary actions listed above, would be required before the development of this project can proceed. As lead agency for the proposed project, the City of Concord would be responsible for the majority of approvals required for development. Other agencies also may have some authority related to the project and its approvals. A list of the required permits and approvals that may be required by the City and other agencies is provided in Table III-2. Many of these agencies would use this EIR when deliberating over required permits and approvals.

This EIR is a project EIR for the Lowe’s project and a program EIR for the retail anchor tenant and outparcel developments. Pursuant to CEQA Guidelines Section 15168, any further discretionary action required for the development of the retail anchor tenant or outparcels will be reviewed to determine if the activity would have effects that were not examined in the program EIR. For subsequent activities found to be within the scope of the project described in the program EIR, no further environmental review would be required.
### Table III-2: Required Permits and Approvals

<table>
<thead>
<tr>
<th>Lead Agency</th>
<th>Permit/Approval</th>
</tr>
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<tbody>
<tr>
<td>City of Concord</td>
<td>• Environmental Review</td>
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<tr>
<td></td>
<td>• Preliminary Development Plan</td>
</tr>
<tr>
<td></td>
<td>• Use Permit</td>
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<td>• Tentative Parcel Map</td>
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<td>• Design Review</td>
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<tr>
<td></td>
<td>• Tree Removal Permit</td>
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<td></td>
<td>• Grading and Building Permits</td>
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<tr>
<td>Other Agencies</td>
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<td>Central Contra Costa Sanitary District</td>
<td>• Approval of wastewater hook-ups</td>
</tr>
<tr>
<td>Contra Costa Water District</td>
<td>• Approval of water service, water hookups, and review of water needs</td>
</tr>
<tr>
<td>Contra Costa County Flood Control and Water</td>
<td>• Approval of storm drain system</td>
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<td>Conservation District</td>
<td>• Administration of storm water discharge permits</td>
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<tr>
<td>Contra Costa County Airport Land Use Commission</td>
<td>• Consistency review of development within Airport Influence Area and Buchanan Field Safety Zone 4</td>
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<tr>
<td>California Regional Water Quality Control Board (RWQCB)</td>
<td>• National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharge</td>
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<td></td>
<td>• Lead agency for on-site contamination and hazardous materials clean-up oversight</td>
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<tr>
<td>Contra Costa County Health Services Department-</td>
<td>• Implementation and enforcement of hazardous materials regulations in Contra Costa County under the Certified Unified Program Agency (CUPA) Program (California Health and Safety Code Chapter 6.11)</td>
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<td>Contra Costa County Fire Protection District</td>
<td>• Safety inspections and emergency response</td>
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<td>Bay Area Air Quality Management District</td>
<td>• Review of air quality emissions</td>
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<td>Pacific Gas &amp; Electric Company</td>
<td>• Approval of electrical and natural gas improvements, hook-ups, and service</td>
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<td>Astound Broadband</td>
<td>• Provision of cable, internet, and telephone services</td>
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<td>Comcast</td>
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<tr>
<td>State Department of Toxic Substances Control</td>
<td>• Consultation with RWQCB regarding hazardous materials clean-up</td>
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A. LAND USE AND PLANNING POLICY

This section describes existing land uses at the project site and in the surrounding area, identifies potential land use impacts, and recommends mitigation measures where appropriate. 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. 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. Potential impacts related to urban decay are also discussed in a separate section (Chapter IV.K) of this EIR.

1. Setting

This subsection describes the existing land uses and regulatory context of the project site and its vicinity. The project site and surrounding area, known as North Concord, were annexed into the City in 2002. This annexation, referred to as the “PICNC” annexation, included a 94.53-acre area north of SR 4.

a. Existing Land Use. Land uses on the project site and adjacent area are shown in Figure IV.A-1. Photographs of the site and surrounding area, as seen from Arnold Industrial Way, are provided in Chapter III, Project Description, Photos III-1 through III-6.

   (1) Project Site. Until recently, most of the 28± acre project site was occupied by industrial uses consisting of outdoor storage and materials stockpiling (e.g., construction materials and equipment, new and used vehicles), machine shops, and vehicular repair. The 5.02-acre parcel located at the eastern end of the site, immediately west of the adjacent cemetery, is undeveloped. As described in Chapter III, Project Description, structures and land uses on the site are as follows:

   - Northwestern portion of site – Formerly occupied by new and used car storage.
   - Northeastern portion of site – Jones single-family residential compound surrounded by lush ornamental landscaping and enclosed by cyclone fencing.
   - Farthest east parcel – Undeveloped, vacant parcel extending the north-south length of the project site, and covered with non-native grasses, and native and non-native trees.
   - Southeastern portion of site (south of residence) – Formerly used for unstructured storage of construction equipment, tree service equipment (e.g., chippers, trucks), and storage containers.
   - Central portion of site – A grouping of two to three large industrial buildings that formerly housed machine shops, auto and boat repair, and towing businesses.
   - Southwestern portion of site – Currently occupied by used auto storage and sales.
   - Centralwestern portion of site – Formerly used for construction company equipment including piles of materials, oversized machinery, and small office buildings.

   (2) Surrounding Area. The project site is located in a predominantly industrial area. To the north, light industrial, research and development and office uses operate in two-story buildings. To the east, the project site is bounded by the Memory Gardens Memorial Park cemetery. To the west,
heavier industrial uses characterized by extensive outdoor storage areas, machine shops and manufacturing, and material stockpiling bound the project site. Further west and north, the area is surrounded by the Tesoro ball fields. To the south, SR 4 separates the industrial project area from similar industrial uses south of SR 4. To the southeast, across SR 4, is a neighborhood of single-family attached homes. To the southwest, also across SR 4, is the Solano Drive-In, which operates as a drive-in theater on weekday evenings and hosts a weekend flea market. Further southwest is Buchanan Field Airport, which is owned and operated by Contra Costa County.

b. Regulatory Context. Planning and regulatory documents guiding land use and development on the project site include the Concord General Plan, Concord Zoning Ordinance, Central Concord Redevelopment Plan, 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 General Plan. The Concord General Plan, adopted in 2007, provides the community’s long-range policy direction intended to guide future growth, development, and conservation of resources. The General Plan provides this policy direction through seven elements: Economic Vitality, Land Use; Growth Management; Transportation and Circulation; Public Services; Parks, Open Space and Conservation; Safety and Noise; and Public Facilities and Utilities. (An additional element, Housing, is a stand-alone document.) 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 planning area. General Plan land use designations in the vicinity of the project site are depicted in Figure IV.A-2. The project site is designated as Regional Commercial, which supports a range of retail uses including regional shopping centers, big box retail, home improvement sales and service, and warehouse membership clubs as well as new auto sales and services, and travel-related services such hotels, gas stations, and restaurants. The Regional Commercial designation “is intended for large-scale commercial developments (greater than 80,000 square feet) that serve both residents and the surrounding region.” The maximum floor area ratio (FAR) is 0.50.

The cemetery north and east of the project site is designated Open Space and the remaining parcels north of the project site are designated Business Park. Parcels immediately to the west are designated Regional Commercial. Parcels south of SR 4 are designated either Industrial Mixed Use and developed with industrial uses or Medium Density Residential and developed with attached single-family units, as depicted in Figures IV.A-1 and IV.A-2.

Table IV.A-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 these EIR topic areas.

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2 Ibid.
Legend:
- **PROJECT SITE**
- **CONCORD CITY LIMIT**
- **SPHERE OF INFLUENCE**
- **LOW DENSITY RESIDENTIAL**
- **MEDIUM DENSITY RESIDENTIAL**
- **BUSINESS PARK**
- **HEAVY INDUSTRIAL**
- **REGIONAL COMMERCIAL**
- **WETLANDS/RESOURCE CONSERV.**
- **PUBLIC/QUASI-PUBLIC**
- **PARKS**
- **PROPOSED URBAN LAND LIMIT LINE**
- **RURAL CONSERVATION**
- **OPEN SPACE**
- **FREeway**

**FIGURE IV.A-2**

Source: CITY OF CONCORD, LSA ASSOCIATES, INC., 2008.
(2) **Concord Zoning Ordinance.** The purpose of the Concord Zoning Ordinance 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. The Zoning Ordinance 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 IV.A-3 depicts the zoning applied to the subject site and surrounding parcels. The project site is zoned Planned District, which is applied to parcels intended to provide mixed land uses, such as the General Plan Regional Commercial designation applied to the project site. The Planned District allows for flexibility in project design and land use controls by allowing varied setbacks, building heights, and lot sizes to ensure for successful and compatible projects that enhance public health, safety and general welfare. Development projects proposed on parcels zoned Planned District are required to also receive approval of a Preliminary Development Plan (PDP) and Use Permit.

The PDP requested by the project applicant would authorize the following aspects of the project: proposed site plan, including land uses, density, and development standards (e.g., setbacks, structure heights); relationship of the project to existing and proposed circulation patterns; scale and mass of the buildings to surrounding uses and land forms; harmony of the project’s design with adjacent structures; views to and from the project site; historical context and preservation, if appropriate; public and private use areas; project phasing; compliance with General Plan policy; and any additional information determined necessary by the Planning Commission or City Council.

(3) **Central Concord Redevelopment Plan.** The Central Concord Redevelopment Plan, as amended in 2006, includes the project site in its “North Concord Subarea.” The Central Concord Redevelopment Plan was originally approved in 1974 and is the Concord Redevelopment Agency’s only redevelopment project area. The original 1974 plan encompassed a large area that focused on downtown and the area between downtown and State Highway 242. Subsequently, the plan was amended to add two other large areas: “the West Concord Area” (added in 1976) and the “Commerce Avenue Area” (added in 1979). The 2006 amendment added three additional subareas: the North Concord, Willow Pass Corridor, and Monument Corridor subareas. The project site is located in the North Concord Subarea. Goals and objectives of the Central Concord Redevelopment Plan for the 2006 amendment area, including the North Concord Subarea, include:

- Elimination of blighting conditions that have prevented the proper utilization of buildings or land, including, deficient or deteriorated buildings, inadequate or unsafe pedestrian and vehicular circulation and access, lots or buildings of inadequate size or substandard design, incompatible uses, properties containing hazardous wastes, and inadequate public improvements or utilities.
- Strengthening of commercial and light industrial functions.
- Expansion, improvement and preservation of the community’s supply of low and moderate-income and market-rate housing.

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• Provision of adequate land for parking and open spaces.
• Re-planning, redesign and development of undeveloped areas that are stagnant or improperly utilized.
• Assembly of land into parcels suitable for modern, integrated development with improved pedestrian and vehicular circulation.
• Provision of opportunities for participation by owners and tenants in the revitalization of their properties.
• Installation of needed public improvements to stimulate new residential, commercial and light industrial expansion, employment and economic growth.
• Avoidance of any undesirable impact of project activities upon adjacent areas outside the project area.
• Provision of public improvements needed to support other objectives of the Redevelopment Plan, in any part of the project area or beyond project boundaries where essential to the success of the project.
• Maximizing of opportunities wherever possible for the retention of existing property interests, for local investors as well as for the continuation, revitalization and expansion of existing commercial enterprises within the area.

(4) 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 a projects 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 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.

• 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 setback 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 development project’s design.

• Utilities—Requires coordination with utility providers early in development review process to ensure that utility apparatus are concealed within buildings or in underground vaults.

(5) Contra Costa County Airport Land Use Compatibility Plan. 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 and Buchanan Field, with adjacent land use development proposals, in accordance with the County’s Airport Land Use Compatibility Plan (ALUCP). Buchanan Field is located on unincorporated Contra Costa County lands that are completely surrounded by the City of Concord, and 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 ALUC’s policies are designed to ensure that future land uses in the areas surrounding these airports would be compatible with potential aircraft activity and airport operations.

A small portion of the project site is located within the Buchanan Field airport influence area, and the southwest corner 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. The small 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 grade level, as well as prohibited from having more than 2,000 gallons of fuel or other hazardous materials stored in aboveground storage tanks.

6 Ibid.
7 Ibid.
8 Contra Costa County Airport Land Use Commission, 2000. Contra Costa County Airport Land Use Compatibility Plan, Policy 5.3.5, December 13; and letter from Lashun C. Cross, ALUC Planner, Contra Costa County Airport Land Use Commission, to Frank Abejo, City of Concord, re: “Lowe’s Shopping Center,” June 27, 2008.
2. Land Use Impacts and Mitigation Measures

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

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. The related topic of urban decay is discussed and analyzed in Section IV.K, Urban Decay.

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

- Physically divide an established community;
- Introduce new land uses that would conflict with established uses; or
- 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.

b. Less-than-Significant Land Use 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 result in the development of a new commercial shopping center comprised of two big-box retail stores (i.e., Lowe’s and another retail anchor tenant), and smaller support retail and restaurant uses. The proposed project would be located on an existing industrial site that would be redeveloped with the new shopping center. The proposed project would reconfigure the eight existing parcels on the project site with four new parcels and would not extend beyond the boundaries of these parcels. The proposed project would be located off of an existing collector street (Arnold Industrial Way) and adjacent to existing industrial, office, and public-use development. The proposed project would include the construction of new sidewalks along the northern edge of Arnold
Industrial Way to facilitate pedestrian access to the site, and the installation of a new traffic signal at the site’s primary entrance to provide controlled access to the site, as well as the addition of one (i.e., third) traffic lane to Arnold Industrial Way to facilitate eastbound traffic entering the project site.

The proposed project would redevelop an existing site; it would not result in the physical division or disruption of an established community. Improvements provided by the proposed project (e.g., sidewalks and roadway upgrades) would help connect the site to other nearby uses.

(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 proposed project would be located on Arnold Industrial Way, a collector street located in a predominantly industrial area in North Concord that is generally underserved by commercial uses. The proposed project would add an approximately 334,112-square-foot shopping center within this predominantly industrial area, thereby providing commercial services to North Concord that are presently lacking. While the proposed shopping center would be a more intensive use than the existing, predominantly outdoor storage industrial uses on the site, implementation of the proposed project would revitalize this area with economically beneficial uses; new retail buildings of high quality architectural, landscape, and hardscape design; improved vehicular and pedestrian circulation in the area; and the removal of blight from the project site as seen by the traveling public from the SR 4 corridor.

When occupied, the shopping center’s hours of operation would overlap with those of the surrounding industrial/office businesses on weekdays, with its busiest operation days occurring on the weekends when the majority of businesses in the area are closed. The addition of the eastbound center turn lane would ensure that delivery trucks entering and leaving the site would not impede vehicular circulation on Arnold Industrial Way. Further, the designated truck route to the east and rear of the site would ensure that delivery trucks and customer vehicular circulation would use different portions of the site, thereby removing the potential for vehicular conflict.

The project site would be located adjacent to the Memory Gardens Memorial Park cemetery to the east. Concord Municipal Code Section 106-201 establishes that “no operator of any vehicle shall drive between the vehicles comprising a funeral procession or a parade, provided that such vehicles are conspicuously so designated” thereby ensuring that delivery trucks would yield to funeral processions en route to the cemetery.

As a result, implementation of the proposed project would result in a less-than-significant land use compatibility impact.

(3) Conflict with Applicable Land Use Plans and Policies. Potential conflicts with policy documents are discussed below.

City of Concord General Plan. The proposed project is consistent with the land use provisions of the Concord General Plan. The General Plan Regional Commercial land use designation permits regional shopping centers, big box retail, home improvement sales and service, and restaurants, as proposed by the project. The floor area ratio of 0.27 proposed by the project would also be consistent with the Regional Commercial designation, which sets a maximum floor area ratio of 0.50.
Table IV.A-1 at the end of this section evaluates the consistency of the proposed project with relevant General Plan policies. As indicated in the table, the project, with mitigation measures recommended in this EIR, would be consistent with all relevant General Plan policies.

**City of Concord Zoning Ordinance.** The proposed project is consistent with the Planned District (PD) zoning for the site, which allows mixed land uses, varied building heights and setbacks, diverse lot sizes, and diverse land use and site design controls. Because the PD District does not provide specific development standards, it is implemented through the requested Preliminary Development Plan (PDP), which proposes a high-quality commercial project of an appropriate scale, mass and design to ensure compatibility with surrounding land uses that is well-integrated with the existing transportation and circulation system and consistent with the Concord General Plan Regional Commercial designation and policies. Additionally, the proposed project would provide the required number of parking spaces, in conformance with Zoning Ordinance Article VII, Off-street Parking Facilities.

**Central Concord Redevelopment Plan.** The proposed project is consistent with the Central Concord Redevelopment Plan, which includes the project site in its “North Concord Subarea.” The project would assist in achieving the following redevelopment plan goals and objectives for this subarea:

- Elimination of blighting conditions—The project would eliminate deficient or deteriorated buildings and inadequate or unsafe pedestrian and vehicular circulation and access, and would address hazardous waste conditions on the site.
- Strengthening of commercial and light industrial functions—The project would provide commercial uses on the site.
- Re-planning, redesign and development of undeveloped areas that are stagnant or improperly utilized—The project would redesign the project site, which currently contains vacant industrial buildings.
- Assembly of land into parcels suitable for modern, integrated development with improved pedestrian and vehicular circulation—The project would assemble parcels on the project site for an integrated regional commercial development.
- Provision of opportunities for participation by owners and tenants in the revitalization of their properties—The project would provide an opportunity for the property owner to revitalize the property.
- Avoidance of any undesirable impact of project activities upon adjacent areas outside the project area—As noted above, 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.

**Concord Community Design Guidelines.** The proposed project is consistent with the Concord Community Design Guidelines in the following ways:

- Area Context—It has appropriately considered the context of the North Concord industrial area it would be located within;
- Site Plan—It has provided 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 industrial area;
• Amenities—It would provide employee break-rooms, lockers, and outdoor spaces for employee and patron use;

• Building Design—The architectural design of the Lowe’s building would use varying colors, materials, and details providing visual relief, rhythm, and variety to break up the mass and bulk of their elongated façades, thereby ensuring the building remains in scale with humans;

• Landscape Design—The proposed landscape design is well-integrated into the site’s overall design, 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 site’s climatic conditions;

• Parking—The site has been designed to provide an appropriate amount of parking, located between all buildings on the site for joint use and access for all patrons and employees of the future shopping center, with walkways integrated to allow for pedestrian movement among the various buildings on the site;

• Signage—A master sign program would be developed for the entire shopping center that would complement the site’s design characteristics, including landscaping, and building colors, and materials, to ensure that signs would be fully integrated into the design theme of the center;

• Utilities—Development of the site would relocate all existing overhead utilities along the project’s Arnold Industrial Way frontage into an underground conduit, as well as ensure that mechanical equipment and other utilities located above grade or on the building would be concealed.

**Contra Costa County Airport Land Use Compatibility Plan.** The proposed project would be consistent with Contra Costa County Airport Land Use Compatibility Plan provisions for Buchanan Field in the following ways:

• Noise—The project would be located outside the 55-60 dB CNEL noise contour for the airport, considered Normally Acceptable for commercial developments.

• Safety—There would be no uses at the project site that 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 part of the southwestern portion of the site. Under the Airport Land Use Compatibility Plan, 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 parking areas and a maximum of 5,000 square feet of restaurant or retail uses within the Safety Zone 4 area. This is consistent with the Airport Land Use Compatibility Plan standards.

• Airspace Protection—The proposed building height (49 feet at the tallest point of the Lowe’s building, on a site with an average elevation of 35 feet above mean sea level) would be less than the Airspace Protection maximum for Buchanan Field of 123 feet above mean sea level under the Airport Land Use Compatibility Plan.

• 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

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9 The project site varies from about 40 feet above mean sea level (AMSL) at the northeastern corner to about 25 feet AMSL at the western edge.
an airport is located in the area. At the time of any land transaction, the seller would have to comply with this State law.

Additionally, the Contra Costa County Airport Land Use Commission (ALUC) reviewed the proposed project in 2008. This review confirmed the safety zone and overflight information noted above. The ALUC review requested that the following conditions be incorporated into the project approval: (1) a condition requiring a deed Notice to be recorded as a result of commonly overflown aircraft approaching and departing within the area, (2) a condition prohibiting the aboveground storage of more than 2,000 gallons of fuel or other hazardous materials in the portion of the site within Safety Zone 4, and (3) a condition that buildings shall have no more than four habitable floors above ground in the portion of the site within Safety Zone 4.10 These conditions would be included in conditions of approval for the proposed project.

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

10 Letter from Lashun C. Cross, ALUC Planner, Contra Costa County Airport Land Use Commission, to Frank Abejo, City of Concord, re: “Lowe’s Shopping Center,” June 27, 2008.
### Table IV.A-1: Relationship of Project to Relevant Concord General Plan Policies

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<thead>
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<th>General Plan Provision</th>
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<th>Project’s Relationship to Policy</th>
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<tbody>
<tr>
<td><strong>A. LAND USE-RELATED POLICIES</strong></td>
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<tr>
<td>Policy LU-1.1.5</td>
<td>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.</td>
<td>The proposed commercial shopping center project is separated from the nearest residential area (the attached single-family neighborhood southeast of the project site) by SR 4. Development of the proposed project would not adversely affect this residential area.</td>
</tr>
<tr>
<td>Policy LU-3.1.1</td>
<td>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.</td>
<td>The two big-box stores and the two retail pads would provide a mix of tenants.</td>
</tr>
<tr>
<td>Policy LU-3.1.4</td>
<td>Plan for new commercial development to expand the variety of goods and services to meet region-serving as well as local needs.</td>
<td>The project would provide new commercial development consistent with this policy. The project would serve regional as well as local needs.</td>
</tr>
<tr>
<td>Policy LU-3.1.5</td>
<td>Identify new areas for region-serving commercial uses at locations that take advantage of major transportation routes.</td>
<td>The General Plan already identifies the project site for Regional Commercial uses. The project would provide region-serving commercial uses.</td>
</tr>
<tr>
<td>Policy LU-7.1.2</td>
<td>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.</td>
<td>A portion of the project site is located within the Buchanan Field airport influence area, and the southwest corner of the project site is overlain by the airport’s Safety Zone 4. Under the Airport Land Use Compatibility Plan, 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 parking areas and a maximum of 5,000 square feet of restaurant or retail uses within the Safety Zone 4 area. This is consistent with the Airport Land Use Compatibility Plan standards.</td>
</tr>
<tr>
<td>Policy LU-7.1.3</td>
<td>Enforce safety compatibility criteria consistent with the County Airport Land Use Commission (ALUC) Plan for new and redevelopment projects within airport safety zones.</td>
<td>See discussion of Policy LU-7.1.2 above.</td>
</tr>
<tr>
<td>Policy LU-8.2.1</td>
<td>Encourage land assembly to achieve building sites large enough for safe, efficient, on-site vehicular circulation, and ample landscaping.</td>
<td>The project would assemble land to provide for a shopping center development with an interconnected vehicle circulation system.</td>
</tr>
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</table>
### B. TRANSPORTATION AND CIRCULATION-RELATED POLICIES

**Policy GM-1.3.1:** Apply the following standards to signalized intersections on Basic Routes (all roads not indicated as Routes of Regional Significance):

- **Rural:** LOS low-C (up to 74 v/c)
- **Semi-Rural:** LOS high-C (75 to 79 v/c)
- **Suburban:** LOS low-D (80 to 84 v/c)
- **Urban:** LOS high-D (85 to 89 v/c)
- **Central Business District:** LOS low-E (90 to 94 v/c)

Since the above classifications refer to areas of the community rather than streets passing through such areas, the City of Concord has established the following LOS standards for intersections dependent upon the largest street at each intersection:

- **Collector:** LOS high-C (75 to 79 v/c) (Generally collects traffic from residential and commercial areas and channels it to arterial streets.)
- **Minor Arterial:** LOS low-D (80 to 84 v/c) (Generally provides circulation between major activity centers and/or residential areas.)
- **Major Arterial:** LOS high-D (85 to 89 v/c) (Generally provides circulation between major activity centers and/or residential areas for both local and regional traffic.)
- **Central Business District Streets:** LOS low-E (90 to 94 v/c)

**Policy GM-1.3.2:** Allow specific street improvements and required right-of-way widths to be determined by the City as part of plan implementation. These shall be kept current by reviewing right-of-way requirements as part of the annual Transportation Improvement Program review and through ongoing review of development projects for conformance with the Growth Management Element.

**Policy GM-1.3.3:** In the event that any signalized intersection on a Basic Route does not meet adopted standards, take steps to attain the standards, including but not limited to changes to the Capital Improvement Program and/or land use policies or other relevant plans and policies. If such amendments are not possible or feasible, the City may prepare a request for findings of special circumstances as specified in the Contra Costa Transportation Improvement and Growth Management Program.

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**Table IV.A-1 Continued**

<table>
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<tbody>
<tr>
<td><strong>Policy GM-1.3.1:</strong></td>
<td>Apply the following standards to signalized intersections on Basic Routes (all roads not indicated as Routes of Regional Significance):</td>
<td>Refer to Section IV.B, Transportation and Circulation, which evaluates the proposed project in accordance with these standards. The proposed project would be consistent with this policy with the implementation of recommended mitigation measures.</td>
</tr>
<tr>
<td><strong>Policy GM-1.3.2:</strong></td>
<td>Allow specific street improvements and required right-of-way widths to be determined by the City as part of plan implementation. These shall be kept current by reviewing right-of-way requirements as part of the annual Transportation Improvement Program review and through ongoing review of development projects for conformance with the Growth Management Element.</td>
<td>The proposed project would implement street specific improvements and comply with right-of-way widths, which are discussed in Section IV.B, Transportation and Circulation.</td>
</tr>
<tr>
<td><strong>Policy GM-1.3.3:</strong></td>
<td>In the event that any signalized intersection on a Basic Route does not meet adopted standards, take steps to attain the standards, including but not limited to changes to the Capital Improvement Program and/or land use policies or other relevant plans and policies. If such amendments are not possible or feasible, the City may prepare a request for findings of special circumstances as specified in the Contra Costa Transportation Improvement and Growth Management Program.</td>
<td>Refer to Section IV.B, Transportation and Circulation, which evaluates the impacts of the proposed project on signalized intersections. The proposed project would be consistent with this policy with the implementation of recommended mitigation measures.</td>
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### General Plan Provision

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<tr>
<td>Policy GM-1.3.9</td>
<td>For each development project estimated to generate 50 or more vehicle trips during one hour, require a traffic impact study prepared consistent with the Technical Guidelines published by the Contra Costa Transportation Authority. A trip generation study may be required for projects estimated to generate less than 50 trips during one hour, based on local conditions.</td>
<td>The proposed project would result in over 50 peak hour vehicle trips. A traffic impact study has been prepared for the project. The proposed project is therefore consistent with this General Plan policy.</td>
</tr>
<tr>
<td>Policy GM-1.3.10</td>
<td>Do not approve any development project expected to generate over 50 peak-hour vehicle trips unless the City has made Findings of Consistency with the Level of Service Standards in Policy GM-1.3.1. Findings of Consistency may be made only if a traffic impact study shows project approval is consistent with adopted Action Plans with respect to Routes of Regional Significance and will not result in violation of adopted standards at any Basic Route signalized intersection unless: 1) projects included in the City’s Capital Improvement Program will result in attainment of the standards, or 2) Findings of Special Circumstances including imposition of appropriate mitigation measures have been adopted by the City and the Contra Costa Transportation Authority.</td>
<td>Refer to Section IV.B, Transportation and Circulation, which evaluates the impacts of the proposed project in relation to level of service standards. The analysis shows that project traffic impacts with mitigation would not exceed level of service standards. The Findings of Consistency would be made at the time that the City considers the requested project approvals.</td>
</tr>
<tr>
<td>Policy GM-1.4.1</td>
<td>Establish a transportation management program to mitigate impacts of development projects on the transportation system.</td>
<td>Mitigation measures recommended in Section IV.C, Air Quality, include a requirement to implement Transportation Demand Management (TDM) measures, including a ride-matching program, coordination with regional ridesharing organizations and provision of transit information. Through implementation of these measures, the proposed project would be consistent with this policy.</td>
</tr>
<tr>
<td>Policy GM-2.1.3</td>
<td>Approve a development project only after making findings that one ore more of the following conditions are met: a. Participation in adopted mitigation programs assures performance standards will be achieved at the time of project occupancy;….</td>
<td>Refer to Section IV.B, Transportation and Circulation, which evaluates the impacts of the proposed project in relation to transportation performance standards. The analysis shows that project traffic impacts with mitigation would not exceed level of service standards. The findings recommended by this policy would be made at the time that the City considers the requested project approvals.</td>
</tr>
<tr>
<td>Policy T-1.1.4</td>
<td>Provide that the level of service at intersections may be exceeded for new development within one-half mile of a BART station, or within one-quarter mile of a transit corridor, where appropriate.</td>
<td>The City will take this policy into consideration when evaluating the proposed project. The analysis shows that project traffic impacts with mitigation would not exceed level of service standards. Therefore, the project would be consistent with this policy.</td>
</tr>
<tr>
<td>Policy T-1.1.5</td>
<td>Require all new development to locate structures to accommodate ultimate street widths and required setbacks.</td>
<td>The project would accommodate ultimate street widths and required setbacks.</td>
</tr>
<tr>
<td>Policy T-1.1.6</td>
<td>Require all new development to provide adequate right-of-way and to construct ultimate on and off-site improvements.</td>
<td>The proposed project would comply with right-of-way requirements and would implement on- and off-site improvements, as discussed in Section IV.B, Transportation and Circulation.</td>
</tr>
<tr>
<td>Policy T-1.3.1</td>
<td>Ensure adequate parking facilities are provided for public convenience and to promote economic development</td>
<td>As discussed in Section IV.B, Transportation and Circulation, the project would provide adequate parking facilities.</td>
</tr>
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</table>
### A. Land Use and Planning Policy

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<tbody>
<tr>
<td>Policy T-1.3.3</td>
<td>Promote shared parking solutions.</td>
<td>The proposed project would provide a supply of on-site, at-grade surface level parking that would meet or exceed the requirements of the City’s Zoning Ordinance. While parking would not be “shared,” it would be dispersed throughout the proposed shopping center.</td>
</tr>
<tr>
<td>Policy T-1.5.2</td>
<td>Use innovative and effective walkway features to enhance the pedestrian environment.</td>
<td>The proposed project would provide a new sidewalk along the north side of Arnold Industrial Way as well as on-site walkways.</td>
</tr>
<tr>
<td>Policy T-1.6.1</td>
<td>Implement strategies and actions for enhanced bicycle circulation throughout the City.</td>
<td>The project would provide a Class III bike lane along the project site frontage, consistent with this policy.</td>
</tr>
<tr>
<td>Policy T-1.6.2</td>
<td>Require provision of bicycle facilities in new developments, where appropriate. Examples include weather protected bicycle parking and direct and safe access for pedestrians and bicyclists to adjacent routes.</td>
<td>See discussion of Policy T-1.6.1 above. Mitigation Measure AIR-2 requires provision of on-site bicycle storage.</td>
</tr>
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### C. Air Quality-Related Policies

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<tbody>
<tr>
<td>Policy S-1.1.2</td>
<td>Site projects in locations and/or in a manner that will reduce air pollution exposure of sensitive receptors.</td>
<td>As discussed in Section IV.C, Air Quality, the project is located in an area that does not contain sensitive receptors for air pollution.</td>
</tr>
<tr>
<td>Policy S-1.1.3</td>
<td>Require project applicants to implement all feasible control measures to reduce combustion emissions from construction equipment.</td>
<td>Refer to Section IV.C, Air Quality, which 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.</td>
</tr>
<tr>
<td>Policy S-1.1.7</td>
<td>Require new development to comply with all applicable dust control measures promulgated by the BAAQMD for new construction.</td>
<td>Refer to Section IV.C, Air Quality, which 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.</td>
</tr>
<tr>
<td>Policy S-1.2.1</td>
<td>Promote pedestrian, bicycle, and transit modes of travel to reduce air pollutant emissions from automobiles.</td>
<td>Consistent with this policy, the proposed project would provide a new sidewalk along the north side of Arnold Industrial Way as well as on-site walkways; a Class III bike lane along the project site frontage; and a new westbound bus stop on Arnold Industrial Way.</td>
</tr>
<tr>
<td>Policy S-1.2.2</td>
<td>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.</td>
<td>Mitigation measures recommended in Section IV.C, Air Quality, include a requirement to implement TDM measures, including a ride-matching program, coordination with regional ridesharing organizations and provision of transit information. Through implementation of these measures, the proposed project would be consistent with this policy.</td>
</tr>
<tr>
<td>Policy S-1.3.2</td>
<td>Promote infill development to reduce automobile travel.</td>
<td>The project is proposed for a property that is located in a predominantly industrial area on a site that is currently underused. The site would provide services to the underserved north Concord area. While the proposed project would not reduce automobile traffic, it would constitute a form on infill development.</td>
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## D. NOISE-RELATED POLICIES

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<tr>
<td>Policy S-2.1.1</td>
<td>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.</td>
<td>Refer to Section IV.D, 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.</td>
</tr>
<tr>
<td>Policy S-2.1.2</td>
<td>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.</td>
<td>The proposed project would not result in noise exposure greater than “normally acceptable” levels, and would not require a noise study and mitigation measures.</td>
</tr>
<tr>
<td>Policy S-2.1.3</td>
<td>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 discretionary. 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.</td>
<td>The proposed project would not result in noise exposure greater than “normally acceptable” levels, and would not require any mitigation measures.</td>
</tr>
<tr>
<td>Policy S-2.2.1</td>
<td>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 (see Figure 7-8).</td>
<td>The proposed project would not result in noise exposure greater than “normally acceptable” levels, and would not any mitigation measures.</td>
</tr>
<tr>
<td>Policy S-2.2.2</td>
<td>Reduce noise intrusion generated by miscellaneous noise sources through conditions of approval to control noise-generating activities.</td>
<td>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.</td>
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### Table IV.A-1 Continued

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<tr>
<td>Policy S-2.2.4</td>
<td>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.</td>
<td>The proposed project would have limited hours of operation, which would lessen any less-than-significant noise impacts.</td>
</tr>
<tr>
<td>Policy S-2.2.5</td>
<td>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.</td>
<td>After accounting for the distance to the nearest residences, the resulting noise from constructional and operational activities would be lower than traffic noise on roadways in the project area. Therefore the proposed project would not affect adjacent properties and would comply with the intention of this policy.</td>
</tr>
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</table>

### E. 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. | Refer to Section IV.E, Cultural and Paleontological Resources, which evaluates the proposed project in accordance with this policy. The proposed project would be consistent with this policy with the implementation of Mitigation Measures CULT-1a through CULT-1c. |
| Policy POS-4.1.3 | Preserve important historic and archaeological sites during new development, reuse, and intensification. | Refer to Section IV.E, which evaluates the proposed project in accordance with this policy. The proposed project would be consistent with this policy with the implementation of Mitigation Measures CULT-1a through CULT-1c. |
| Policy POS-4.1.4 | In identified sensitive areas, require archaeological studies as part of the development review process. | Refer to Section IV.E, which evaluates the proposed project in accordance with this policy. The proposed project would be consistent with this policy with the implementation of Mitigation Measures CULT-1a through CULT-1c. |

### F. 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. | Section IV.F, Geology, Soils and Seismicity, of this EIR provides a thorough evaluation of geologic, seismic, and soils conditions and risks. Implementation of Mitigation Measures GEO-1 through GEO-3 would reduce identified risks to less-than-significant levels. The project 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. | Through the development review process, the City would ensure that the proposed project complies with all applicable State and local standards and codes. |
### Table IV.A-1 Continued

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<tr>
<td>Policy S-3.2.4</td>
<td>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.</td>
<td>Section IV.F evaluates geology-related safety hazards on the site and recommends mitigation. Implementation of Mitigation Measures GEO-1 through GEO-3 would reduce the identified risks to less-than-significant levels. The project would be consistent with this policy.</td>
</tr>
<tr>
<td>Policy S-3.2.5</td>
<td>Control erosion of graded areas with revegetation or other acceptable methods.</td>
<td>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. Mitigation Measures recommended in Section IV.H, Hydrology and Storm Drainage, would require that the project applicant prepare 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. Specifically, particular BMPs would focus on erosion control. With implementation of this mitigation measure, the proposed project would be consistent with this policy.</td>
</tr>
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</table>

#### G. BIOLOGICAL RESOURCES-RELATED POLICIES

| Policy POS-3.4.1        | Conserve wildlife habitat and wildlife corridors, including seasonal migration routes. | 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 site is bordered on all sides by land uses that are not conducive to terrestrial wildlife movement (i.e., streets and freeways to the south, industrial developments to the north and west, and a cemetery to the east). As such, wildlife movement through the site is not substantial, and the proposed project would be consistent with this 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. | As discussed in Section IV.G, Biological Resources, an analysis of the potential for rare, threatened, or endangered species on the project site found that the proposed project could affect special-status species. However, implementation of recommended mitigation measures would ensure that any species listed as potentially affected, and its habitat, 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. | The proposed project would remove existing vegetation on the site, which is composed of non-native ruderal grasses, thistle, ornamental trees, and 27 heritage trees. However, as discussed in Section IV.G, Biological Resources, the project applicant would comply with City of Concord tree preservation requirements by replacing heritage trees. The proposed project would therefore be consistent with this policy. |
| Policy POS-3.4.4        | Plant vegetation to increase benefits to wildlife. | See discussion of Policy POS-3.4.3 above. |
| Policy POS-3.4.5        | Coordinate with appropriate regulatory and trustee agencies to enhance protection of special status species and sensitive natural communities. | See discussion of Policy POS-3.4.2 above. Section IV.G discusses coordination with appropriate regulatory and trustee agencies. |
### General Plan Provision

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>POS-3.4.6</td>
<td>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</td>
<td>As discussed in Section IV.G, Biological Resources, implementation of recommended mitigation measures would ensure that construction-related activities avoid breeding and nesting seasons for special-status species.</td>
</tr>
<tr>
<td>POS-3.4.7</td>
<td>Promote habitat restoration in areas of special status species.</td>
<td>See discussion of Policy POS-3.4.2 above.</td>
</tr>
<tr>
<td>LU-8.2.3</td>
<td>Apply site planning techniques that minimize the amount of impervious paving, promote pedestrian safety, and reduce urban runoff in commercial centers.</td>
<td>As discussed in Section IV.H, Hydrology and Storm Drainage, the approach proposed by the applicant to address potential hydromodification impacts is appropriate, based consultation with City staff and the City’s review of the proposed Storm Water Quality Control Plans and Reports (SWQCBs) for the project. Mitigation measures recommended in Section IV.H provide for review of the final design SWQCBs for compliance with all applicable regulations prior to approval of the project grading plan. Compliance with these measures would ensure that the proposed project would be consistent with this policy.</td>
</tr>
<tr>
<td>GM-2.1.1</td>
<td>Establish performance standards, to be maintained through capital projects, for the following facilities and service: f. Flood Control. Flood control/drainage system capacity sufficient for the 50 year flood event (as determined by FEMA).</td>
<td>Refer to Section IV.H, Hydrology and Storm Drainage, which analyzes the project in accordance with these performance standards. The project site is not located within a FEMA floodplain and would include design and construction of only “minor” conveyance facilities on-site. Under the City’s existing plan review process, the project’s conveyance facilities would be reviewed and would be approved only if they comply with established City design requirements. Therefore, the project would be consistent with this policy.</td>
</tr>
<tr>
<td>GM-2.1.2</td>
<td>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 facilities for…flood control.</td>
<td>The proposed project is not expected to increase the demand on flood control systems because the project site is not located within a FEMA floodplain. As such, the project applicant would not have to pay the costs associated with the provision of flood control facilities.</td>
</tr>
<tr>
<td>S-4.1.1</td>
<td>Manage development to ensure compliance with the City’s Flood Management Ordinance and the City’s Stormwater Management and Discharge Control Ordinance.</td>
<td>Refer to Section IV.H, Hydrology and Storm Drainage, which analyzes the project in accordance with these flood and stormwater ordinances. The project would be required to comply with these ordinances, as applicable, and therefore would be consistent with this policy.</td>
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<tr>
<td><strong>Policy S-4.1.2</strong></td>
<td>Establish engineering design standards for constructing a storm drainage system to protect against loss of life and property and minimize risks of flooding. All drainage facilities must have adequate capacity to contain, with sufficient freeboard, projected runoff from the “design flood”, a 50-year flood for major facilities, a 25-year flood for secondary facilities, and a 10-year flood for minor facilities.</td>
<td>The project site is not located within a FEMA floodplain and would include design and construction of only “minor” conveyance facilities on-site. Under the City’s existing plan review process, the project’s conveyance facilities would be reviewed and would be approved only if they comply with established City design requirements. Therefore, the project would be consistent with this impact.</td>
</tr>
<tr>
<td><strong>Policy S-4.1.3</strong></td>
<td>Coordinate storm drainage management with appropriate agencies, including the County Flood Control and Water Conservation District, Regional Water Quality Control Board, Army Corps of Engineers, Department of Fish &amp; Game and with the Contra Costa Water District, in the vicinity of the Contra Costa Canal. With mitigation measures recommended in Section IV.H, Hydrology and Storm Drainage, the proposed project would meet the requirements of appropriate agencies. Refer to Section IV.H for a detailed analysis of the proposed project’s compliance with storm drainage management requirements.</td>
<td></td>
</tr>
<tr>
<td><strong>Policy S-4.1.4</strong></td>
<td>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. As discussed in Section IV.H, the City has reviewed the project plans and found that the approach proposed by the applicant to address potential hydromodification impacts is appropriate. Under the City’s existing plan review process, the project’s final conveyance facilities design would be reviewed and would be approved only if it complies with established City and other applicable agency design requirements.</td>
<td></td>
</tr>
<tr>
<td><strong>Policy PF-1.3.1</strong></td>
<td>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. See discussion of Policy S-4.1.4 above.</td>
<td></td>
</tr>
<tr>
<td><strong>Policy PF-1.3.5</strong></td>
<td>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. See discussion of Policy S-4.1.4 above.</td>
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<tr>
<td><strong>I. PUBLIC SERVICES AND UTILITIES-RELATED POLICIES</strong></td>
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</table>
| Policy GM-2.1.1 | Establish performance standards, to be maintained through capital projects, for the following facilities and service:  
  b. Fire. The Central Contra County Fire Protection District, which is governed by the County Board of Supervisors, provides fire protection for all residents and nonresidential developments in the Concord Planning area. The City supports the County’s goals to provide fire safety to the community.  
c. Police. 200 square feet of station per 1,000 residents.  
d. Sanitary Facilities. The Central Contra Costa Sanitary District provides treatment for average daily effluent for all residents and nonresidential developments in Concord. The City supports the goals the District has established to meet and State Standards.  
e. Water. The Contra Costa Water District provides water to Concord. The City supports the goals the District has adopted to meet Federal and State standards. | As discussed in Section IV.I, Public Services and Utilities, while the proposed project would incrementally increase the demand for fire, police, sanitary facilities, and water, it would not affect established performance standards. The proposed project would therefore be consistent with this policy. |
| Policy GM-2.1.2 | 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 facilities for parks, fire, police, sanitary facilities, water, and flood control. | See discussion of Policies GM-2.1.1 and S-4.1.4 above. |
| Policy GM-2.1.3 | Approve a development project only after making findings that one or more of the following conditions are met:  
a. Participation in adopted mitigation programs assures performance standards will be achieved at the time of project occupancy;  
b. Because of the characteristics of the development project, project-specific mitigation measures are needed in order to ensure maintenance of 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 standards. | As discussed in Section IV.I, Public Services and Utilities, while the proposed project would incrementally increase the demand for fire, police, sanitary facilities, and water, it would not affect established performance standards. 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. | Section IV.I, 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. The proposed project would therefore be consistent with this policy. |
| Policy S-7.2.1 | Coordinate plans and activities with the Contra Costa County Fire Protection District (CCCFPD), including siting of fire stations. | As discussed in Section IV.I, Public Services and Utilities, the proposed project would not affect the performance standards of the CCCFPD. The project therefore would not involve coordinating or siting new fire stations. |
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<tr>
<td>Policy S-7.2.3</td>
<td>Ensure that sufficient access for fire protection services is available in all new development.</td>
<td>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. Compliance with these requirements would be assessed as a part of the standard building permit plan-check processes for the various authorities with jurisdiction over the project. Specific requirements pertaining to site design and available resources (i.e. hydrant fire flow) would also be required as conditions of approval, and would be assessed through the permit review processes. The proposed project would therefore be consistent with this policy.</td>
</tr>
<tr>
<td>Policy S-7.2.2</td>
<td>Require new development to incorporate water systems that meet CCCFPD fire flow requirements or to provide adequate on-site water storage.</td>
<td>Specific requirements pertaining to site design and available resources (i.e. hydrant 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.</td>
</tr>
<tr>
<td>Policy LU-3.1.6</td>
<td>Ensure the timely implementation of necessary infrastructure to support existing and new region-serving development.</td>
<td>Refer to Section IV.I, Public Services and Utilities for a discussion of the on- and off-site infrastructure improvements that would be made as part of the project.</td>
</tr>
<tr>
<td>Policy PF-1.2.2</td>
<td>Reduce the need for sewer system improvements by requiring new development to incorporate water conservation measures.</td>
<td>Water conservation measures would be included in the proposed Lowe’s store and could be required as conditions of project approval. Refer to Section IV.I, Public Services and Utilities, for a discussion of the on- and off-site sewer system improvements that would be made as part of the project.</td>
</tr>
<tr>
<td>Policy PF-1.4.1</td>
<td>Require new development to coordinate with all utility providers to assure quality services to all residents and businesses throughout the community.</td>
<td>Section IV.I, Public Services and Utilities, evaluates the effects of the proposed project on services and utilities and determines that the project would not result in significant impacts. The project applicant would coordinate with all utility providers to ensure services to the project site.</td>
</tr>
<tr>
<td>Policy PF-1.5.1</td>
<td>Continue reduction and recycling efforts within the City to divert increasingly larger portions of the waste stream from local landfills.</td>
<td>Since the project is over 10,000 square feet, the City of Concord Construction and Demolition Recycling Ordinance 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&amp;D) waste debris and 75 percent of all concrete, soil, asphalt, and masonry products (inert debris) be recycled or reused. The C&amp;D and inert debris can be recycled on-site, or can be taken to specific recycling facilities. The project would also 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.</td>
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<tbody>
<tr>
<td>Policy PF-1.5.2</td>
<td>Promote the importance of recycling industrial and construction wastes.</td>
<td>See discussion of Policy PF-1.5.1 above.</td>
</tr>
<tr>
<td>Policy PF-1.5.4</td>
<td>Require builders to incorporate adequate storage areas appropriately screened from the street for recyclables into new multifamily, commercial, and industrial structures.</td>
<td>The 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 be consistent with this policy.</td>
</tr>
</tbody>
</table>

#### J. Public Health-Related Policies

<table>
<thead>
<tr>
<th>Policy S-5.1.1</th>
<th>Coordinate with the Contra Costa County Department of Environmental Health, and other appropriate regulatory agencies, review of proposals at sites which may have toxic contamination or include hazardous materials use.</th>
<th>Refer to Section IV.J, Public Health and Safety/Hazardous Materials, which discusses evaluations of toxic contamination on the project site and the role of applicable regulatory agencies.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy S-5.1.3</td>
<td>Control the transport of hazardous materials to minimize potential hazards to the local population.</td>
<td>Project-related hazardous materials transportation, use, and disposal would be subject to State and federal hazardous materials laws and regulations. Mitigation measures recommended in Section IV.J would ensure that hazards associated with hazardous materials transport would be minimized.</td>
</tr>
<tr>
<td>Policy S-5.1.4</td>
<td>Require appropriate clean up of all former commercial and industrial sites prior to reuse according to relevant State and federal regulatory agencies.</td>
<td>Mitigation measures recommended in Section IV.J would ensure that all hazardous materials are properly cleaned up.</td>
</tr>
</tbody>
</table>

#### K. Urban Decay-Related Policies

<table>
<thead>
<tr>
<th>Policy E-4.1.1</th>
<th>Attract catalyst retail businesses that stimulate economic development and raise the standard of retail enterprise.</th>
<th>The project would provide for a Lowe’s store and three other businesses in the North Concord area. The project would be consistent with this policy.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy E-4.1.5</td>
<td>Encourage a mix of retail that draws local customers as well as patrons from the greater Bay Area.</td>
<td>The project proposes a shopping center that would serve regional as well as local needs. The project would be consistent with this policy.</td>
</tr>
</tbody>
</table>

#### L. Global Climate Change-Related Policies (Note: See also Land Use-, Transportation-, Air Quality-, and Utilities-Related Policies above)

| Policy POS-3.6.1 | Encourage sustainable building practices for new development and the remodeling of existing buildings. Sustainable building practices employ a wide variety of construction techniques and methods that allow new development and building remodels to last longer, cost less to operate, and protect the health of workers and residents. Examples of sustainable building practices include the use of advanced framing techniques that reduce lumber requirements, incorporating recycled building materials, designing with solar heating and cooling systems, and using energy efficient appliances, water heaters, and insulation. | As discussed in Section IV.L, Global Climate Change, greenhouse gas-reducing design features, energy-efficient systems and water-conserving features would be incorporated into project plans and implemented by the project applicant. Therefore, the proposed project would be consistent with this policy. |

B. TRANSPORTATION AND CIRCULATION

This section describes the existing transportation and circulation conditions around the project site based on a traffic study prepared by Abrams Associates Traffic Engineering, Inc. This section also addresses the potential impacts of the proposed project in terms of intersection level of service as well as trip generation, traffic distribution, traffic assignment, and potential intersection and roadway improvements needed to mitigate expected future deficiencies. The project’s potential effects on transit services, pedestrian and bicycle facilities in the project area, and adequacy of parking are also evaluated. Measures that would mitigate these impacts to less-than-significant levels are recommended, where appropriate.

1. Setting

The setting for the transportation and circulation issues and the scope of the analysis documented in this section are 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. This study was conducted according to the requirements of the City of Concord. The basis of analysis is peak hour level of service calculations for key intersections in the vicinity of the proposed project. The hours identified as the “peak” hour are between 8:00 a.m. and 9:00 a.m. and 5:00 p.m. and 6:00 p.m. weekdays for each of the transportation facilities described. Throughout this section, these peak hours will be identified as the AM and PM peak hours, respectively. The weekday peak hours are the periods when the maximum traffic impacts are measured and defined. While Saturday may be the peak traffic day for the proposed Lowe’s development, the overall highest impact would occur during the commute periods on weekdays.

Figure IV.B-1 shows the location of the project site and adjacent street network. To assess changes in traffic conditions associated with the project, intersections were selected for analysis based on anticipated project traffic distribution, public scoping comments, and direction from City staff. Eight intersections and four freeway ramps evaluated in this study are listed below and illustrated in Figure IV.B-1. Numbers in the list below correspond to intersection numbers shown in Figure IV.B-1.

Study Intersections
1) Solano Way and Arnold Industrial Way (Imhoff Drive)
3) Arnold Industrial Way and Laura Alice Way (Peralta)
4) Arnold Industrial Way and Main Project Access
5) Arnold Industrial Way and Port Chicago Highway
7) Solano Way and Olivera Road (Marsh Drive)
9) Arnold Industrial Place and Peralta Road
10) Peralta Road and Olivera Road
11) Olivera Road and Grant Street

Study Freeway Ramps
2) Arnold Industrial Way and SR 4 Westbound Ramps (north side)
6) Port Chicago Highway and SR 4 Westbound Ramps (north side)
8) Arnold Industrial Place and SR 4 Eastbound Ramps (south side)
12) Olivera Road and SR 242 northbound ramps (east side)
The following scenarios were evaluated for this study:

- **Existing Condition.** Existing Condition traffic counts for each of the study area intersections were collected in April and May 2008. At that time, schools were in session and traffic conditions were representative of those that typically occur on weekdays and weekends.

- **Existing Plus Proposed Project Condition.** The Existing Plus Proposed Project Condition traffic forecasts were developed by adding project-related traffic to the Existing Condition volumes.

- **Cumulative (Year 2030) Without the Proposed Project Condition.** The Cumulative (Year 2030) Without the Proposed Project Condition traffic forecasts were developed based on Contra Costa Transportation Authority (CCTA) areawide traffic 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 2030) Plus Proposed Project Condition.** The Cumulative (Year 2030) Plus Proposed Project Condition traffic forecasts were developed by adding project-related traffic volumes to the CCTA 2030 Without the Proposed Project condition volumes.

b. **Study Methods.** 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. **Data Requirements.** Several types of data were collected prior to the initiation of the traffic analysis, including intersection and roadway lane configurations, intersection turning movement counts, and freeway ramp intersection counts.

2. **Analysis Methodologies.** Consistent with the requirements of the City of Concord’s Policy and Procedure 144 for Traffic Impact Analysis and Mitigation Requirements, the existing level of service analysis for signalized intersections was conducted based on the requirements of the Contra Costa Transportation Authority (CCTA) Critical Movement Analysis Methodology, described in Transportation Research Board Circular 212. The “critical” movement of traffic in this methodology refers to most congested traffic flow from each signal phase. This methodology defines level of service (LOS) for signalized intersections in terms of the ratio of critical movement traffic volumes to an estimate of the maximum capacity for critical volume at an intersection. Critical movements at an intersection are calculated determining the maximum traffic volumes for conflicting traffic movements (i.e., left-turns plus opposing through traffic) per single stream of traffic (by lane). For the Critical Movement Methodology, the LOS for intersections is determined by the ratio of critical movement volume to critical movement capacity (i.e., volume-to-capacity or “v/c” ratio) for the entire intersection.

Levels of service for signalized intersections were calculated using the CCTA LOS Program (Version 2.35) computer software required by the Critical Movement Analysis Methodology. The relationship of volume-to-capacity (v/c) and level of service at signalized intersections used by the CCTA methodology and City of Concord is summarized in Table IV.B-1. Traffic conditions in the study area are assessed through the evaluation of peak hour levels of service at critical intersections.
### Table IV.B-1: Level of Service Definitions – Signalized and Unsignalized Intersections

<table>
<thead>
<tr>
<th>Level of Service (LOS)</th>
<th>Description of Level of Service</th>
<th>Signalized Intersection</th>
<th>Unsignalized Intersection</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Relatively free flow. If signalized, conditions are such that no vehicle phase is fully utilized by traffic and no vehicle waits through more than one red indication (signal). No delay is experienced at unsignalized intersections.</td>
<td>&lt; 0.59</td>
<td>≤10</td>
</tr>
<tr>
<td>B</td>
<td>Stable flow. If signalized, an occasional approach phase is fully utilized; groups of vehicles, or “platoons,” are formed. Short delays are experienced at unsignalized intersections.</td>
<td>0.60 to 0.69</td>
<td>&gt;10 and ≤15</td>
</tr>
<tr>
<td>C</td>
<td>Stable flow or operation. If signalized, drivers occasionally may have to wait through more than one red indication. Moderate, acceptable delay at unsignalized intersections.</td>
<td>0.70 to 0.79</td>
<td>&gt;15 and ≤25</td>
</tr>
<tr>
<td>D</td>
<td>Approaching unstable flow or operation. If signalized, queues develop but quickly clear. Tolerable delay. At unsignalized intersections, long delays are experienced.</td>
<td>0.80 to 0.89</td>
<td>&gt;25 and ≤35</td>
</tr>
<tr>
<td>E</td>
<td>Unstable flow with operating conditions at or near the capacity level at signalized intersections. Very long delays and vehicle queuing at unsignalized intersections.</td>
<td>0.90 to 1.00</td>
<td>&gt;35 and ≤50</td>
</tr>
<tr>
<td>F</td>
<td>Forced flow or operation. If signalized, intersection operations below its vehicular capacity resulting in stop and go traffic, jammed traffic conditions. Excessive long delays and vehicle queuing at both signalized and unsignalized intersections.</td>
<td>≥1.00</td>
<td>&gt;50</td>
</tr>
</tbody>
</table>

Note: Forecasted demands for signalized intersections can exceed the actual capacity of the roadway, as indicated in v/c ratios greater than 1.0. Actual measured traffic volumes cannot, theoretically, exceed the capacity of the roadway because once at full capacity (that is, v/c at 1.0), traffic conditions are jammed and the roadway cannot accommodate any additional traffic. Further, because traffic inefficiencies arise at capacity demand conditions, the calculated v/c ratios for LOS F conditions can be reached below the v/c ratio of 1.0.


Unsignalized intersections were analyzed using the 2000 Highway Capacity Manual methodology that is based on the average delay, in seconds, of vehicles waiting to cross through the intersection (i.e., seconds per vehicle). The capacity of each unsignalized intersection approach (i.e., the direction from which the vehicular traffic is arriving at the intersection) is estimated as a function of the proportion of traffic on each approach, the number of lanes on each approach, and the proportion of turning movements on the opposing and conflicting approaches. Once the average total for each approach is collected, the levels of service for each approach as well as the entire intersection can be determined. UNSignalized intersection levels of service were analyzed for the peak hours using TRAFFIX software, Version 7.7. Table IV.B-1 also provides operational characteristics associated with each level of service for unsignalized intersections, as assessed through evaluation of peak hour traffic delay conditions.

(3) **Level of Service Standards.** Level of service is an expression, in the form of a scale, of the relationship between the capacity of an intersection or roadway segment to accommodate the volume of traffic moving through it at any given time. The level of service scale describes traffic flow with six ratings ranging from A to F, with “A” indicating relatively free flow of traffic and “F” indicating stop-and-go traffic characterized by traffic jams. As the amount of traffic moving through a given intersection or roadway segment increases, the traffic flow conditions that motorists experience
rapidly deteriorate as the absolute capacity of the intersection or roadway segment is reached. Under such conditions, there is general instability in the traffic flow, which means that relatively small incidents (e.g., momentary engine stall) can cause considerable fluctuations in speeds and delays that lead to traffic congestion. This near-capacity situation is labeled level of service (LOS) E. Beyond LOS E, the intersection or roadway segment capacity has been exceeded, and arriving traffic will exceed the ability of the intersection to accommodate it.

(4) **Traffic Signal Warrants.** Traffic signals may be justified when traffic operations fall below acceptable levels of service and when one or more signal “warrants” are satisfied. Caltrans specifies 11 warrants, or conditions that are used to determine where the installation of a traffic signal is justified. Consistent with City of Concord and Caltrans standards, traffic volumes at unsignalized intersections were compared to the peak hour warrants in the *Manual of Uniform Traffic Control Devices* published by the U.S. Department of Transportation. Traffic Signal Warrant 3 (i.e., peak hour volume warrant) is satisfied when traffic volumes on major and minor roadway approaches exceed level of service thresholds for one hour of the day. This is generally the first warrant to be satisfied. The warrant applies to traffic conditions during a 1-hour peak that are high enough that minor street traffic experiences excessive delay in entering and crossing the street. Other warrants, such as minimum vehicle volumes, interruption of continuous traffic, and traffic progression generally are satisfied at any intersection meeting peak hour warrants.

c. **Existing Transportation Setting.** As indicated, the project site location and study area network are shown in Figure IV.B-1. The following section generally describes the transportation system in the project study area, including key facilities of the roadway, transit, pedestrian, and bicycle networks.

(1) **Roadway System.** 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:

- **State Route 4.** State Route 4 (SR 4) extends from Interstate 80 (I-80) in Hercules (west of the project site) east to SR 89 in the Sierra. In the vicinity of the proposed project, SR 4 is a freeway with full interchanges at Solano Way, Port Chicago Highway, I-680, and SR 242. It should be noted that there are other sections of Highway 4 to the east and west that have not been constructed to full freeway standards.

- **State Route 242.** State Route 242 (SR 242) is a freeway that runs in a northeast-southwest direction, extending from Pleasant Hill (south of the City of Concord) north to its terminus at SR 4, approximately $\frac{1}{4}$-mile east of the project site. SR 242 is accessible from the project site from SR 4 via the Solano Way interchange ramps.

- **Interstate 680.** Interstate 680 (I-680) is a freeway that runs in a north-south direction, extending north from its transition at I-280 in southern San Jose to Fairfield, located approximately 25 miles north of Concord, where it becomes I-80. I-680 is located approximately one mile west of the project site and is accessible from SR 4 via its Solano Way interchange ramps.

Local roadway access in the vicinity of the project site is provided by the following roadways.
• **Arnold Industrial Way.** Arnold Industrial Way is a two-lane frontage road that runs in an east-west direction on the north side of SR 4. This road extends from Solano Way (west of the project site) east to Port Chicago Highway. The project site is located on Arnold Industrial Way.

• **Solano Way.** Solano Way is a two-lane roadway that runs in a northwest-southeast direction. Solano Way extends from SR 242 approximately 3½ miles to its terminus at Waterfront Road, located approximately one mile north of the project site.

• **Port Chicago Highway.** Port Chicago Highway is a north-south roadway that extends from Clayton Road in downtown Concord north to its terminus at the recently closed US Naval Weapons Station, located approximately 4 miles east of the project site. For most of its length, Port Chicago Highway is a two-lane roadway, but it temporarily widens to a six-lane road near Bates Avenue north of SR 4.

• **Olivera Road.** Olivera Road is a two-lane roadway that runs in an east-west direction from Willow Pass Road (east of SR 242) to Solano Way near the project site.

(2) **Public Transportation.** The project site is served by the Central Contra Costa Transportation Authority (CCCTA) *County Connection* public bus system. County Connection Routes 108 and 127 provide bus service on Arnold Industrial Way. The nearest Route 108 stop is located approximately ⅛-mile west of the project site at the intersection of Arnold Industrial Way and Laura Alice Way. The nearest Route 127 stop is located approximately ¼-mile southwest of the project site at the intersection of Arnold Industrial Place and Peralta Road (south of SR 4). Each route generally operates on one-hour headways with the first bus of the day passing through the project area at 7:00 a.m. and the last bus of the day at 10:00 p.m. Access to regional transit facilities, such as BART and Amtrak, is also provided by County Connection.

(3) **Pedestrian and Bicycle Facilities.** There are limited bicycle and pedestrian facilities in the vicinity of the project site. There are sidewalks on some of the nearby streets that have been recently improved with new development. On-road, striped (Class II) bike lanes are provided on Port Chicago Highway between SR 4 and Bates Avenue approximately one mile northeast of the project site. Otherwise there are no bicycle lanes on roadways in the project study area.

The project site’s street frontage abuts Arnold Industrial Way, which is not a designated bike route/lane in the City’s Trails Master Plan (described in more detail in subsection 1.e(2) below). Arnold Industrial Way was, however, identified as a Class III bike route (i.e., shared use between pedestrians, bicyclist, and motor vehicle traffic) by the County, referred to as the SR 4 Bikeway, when the City annexed the North Concord area a few years ago. Segments of the bike route are delineated and/or designated with signage along Arnold Industrial Way. Adjacent to the project site, however, the bike route is not currently delineated.

(4) **Other Traffic and Transportation Features.** The Solano Drive-In, located south of SR 4 on Arnold Industrial Place and Solano Way, operates as a drive-in theater on weekend evenings. Movies are usually shown Monday through Thursday after 8:00 p.m. Solano Drive-In also hosts a weekend flea market that is very well attended. The flea market attracts considerable pedestrian and vehicular traffic to the area on Saturday and Sunday mornings, particularly in the area of the freeway ramps on Arnold Industrial Place. Typically, the flea market operates Saturdays from 9:00 a.m. to 2:00 p.m. and Sundays from 8:00 a.m. to 2:00 p.m. These activities do not occur during the weekday peak commute periods.
Other traffic generators in the area include the light industrial/office uses located on Nelson Avenue north of the project site, the residential neighborhoods south of SR 4, and Buchanan Field Airport, located approximately ¼-mile west of the Solano Drive-In south of SR 4.

(5) *Existing Lane Configurations.* 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 illustrated in Figure IV.B-2.

(6) *Existing Traffic Volumes.* 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 Saturday and Sunday traffic counts taken in April and May 2008 at Arnold Industrial Way at both Laura Alice Way and at Port Chicago Highway.

As indicated, peak weekday conditions occur from 8:00 a.m. to 9:00 a.m. and from 5:00 p.m. to 6:00 p.m. Intersection operations were evaluated for the single hour during each of these periods for which the highest traffic volumes were measured. The existing peak hour traffic volumes and turning movements at study area intersections are shown on Figure IV.B-3.

(7) *Existing Conditions Intersection Analysis.* AM and PM peak hour intersection service levels were calculated using existing turning movement counts and lane configurations, thereby establishing the Existing Condition scenario. Results of the existing conditions analysis are provided in Table IV.B-2. Figure IV.B-4 provides existing AM and PM level of service for the study area intersections.

<table>
<thead>
<tr>
<th>No.</th>
<th>Intersection</th>
<th>Traffic Control Device</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>AM V/C Ratio or Seconds of Delay</td>
<td>PM V/C Ratio or Seconds of Delay</td>
</tr>
<tr>
<td>1</td>
<td>Solano Way and Arnold Industrial Way (Imhoff Drive)</td>
<td>Signal</td>
<td>A 0.25 v/c</td>
<td>A 0.32 v/c</td>
</tr>
<tr>
<td>2</td>
<td>Arnold Industrial Way and SR 4 Westbound Ramps (north side)</td>
<td>Stop Sign</td>
<td>B 12.5 delay</td>
<td>C 17.8 delay</td>
</tr>
<tr>
<td>3</td>
<td>Arnold Industrial Way and Laura Alice Way (Peralta Road)</td>
<td>Stop Sign</td>
<td>B 11.9 delay</td>
<td>C 15.9 delay</td>
</tr>
<tr>
<td>4</td>
<td>Arnold Industrial Way and Main Project Access</td>
<td>Future</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>5</td>
<td>Arnold Industrial Way and Port Chicago Highway</td>
<td>Signal</td>
<td>A 0.32 v/c</td>
<td>A 0.47 v/c</td>
</tr>
<tr>
<td>6</td>
<td>Port Chicago Highway and SR 4 Westbound Ramps (north side)</td>
<td>Signal</td>
<td>A 0.45 v/c</td>
<td>A 0.45 v/c</td>
</tr>
<tr>
<td>7</td>
<td>Solano Way and Olivera Road (Marsh Drive)</td>
<td>Signal</td>
<td>A 0.23 v/c</td>
<td>A 0.22 v/c</td>
</tr>
<tr>
<td>8</td>
<td>Arnold Industrial Place and SR 4 Eastbound Ramps (south side)</td>
<td>Stop Sign</td>
<td>F 53.0 delay</td>
<td>E 37.0 delay</td>
</tr>
<tr>
<td>9</td>
<td>Arnold Industrial Place and Peralta Road</td>
<td>Stop Sign</td>
<td>B 14.6 delay</td>
<td>B 11.6 delay</td>
</tr>
<tr>
<td>10</td>
<td>Peralta Road and Olivera Road</td>
<td>Stop Sign</td>
<td>B 11.1 delay</td>
<td>B 10.7 delay</td>
</tr>
<tr>
<td>11</td>
<td>Olivera Road and Grant Street (SR 242) Southbound Ramps (west side)</td>
<td>Signal</td>
<td>A 0.23 v/c</td>
<td>A 0.33 v/c</td>
</tr>
<tr>
<td>12</td>
<td>Olivera Road and SR 242 Northbound Ramps (east side)</td>
<td>Signal</td>
<td>A 0.29 v/c</td>
<td>A 0.35 v/c</td>
</tr>
</tbody>
</table>

Note: **Bold shading** represents the intersection that does not meet the established operational standard of LOS D, as established by the City of Concord.

PROJECT LOCATION

LEGEND

TRAFFIC SIGNAL
4-WAY STOP
STOP SIGN

MEMORY GARDENS CEMETERY

FIGURE IV.B-2
Lowe’s Shopping Center Project EIR
Existing Lane Configuration
in Study Area

E:\CCD0801 Lowes\Figures\Fig_IVB2.ai (5/13/08)
Not to Scale

**Legend**

**AM (PM)**

**VOLUMES**

**Project Location**

**Memory Gardens Cemetery**

**FIGURE IV.B-3**

Lowe’s Shopping Center Project EIR

Existing AM(PM) Peak Hour Weekday Traffic Volumes
FIGURE IV.B-4

Lowe's Shopping Center Project EIR
Existing (2008) AM/PM Levels of Service

E:CCD0801/Lowes/Figures/Fig_IVB4.ai (7/22/08)
The analysis indicates that one existing study area intersection, Intersection 8 (Arnold Industrial Place and SR 4 Eastbound Ramps), currently operates at unacceptable LOS F in the AM peak hour and at LOS E in the PM peak hour. These findings are based on significance criteria established by the City of Concord, as indicated in bold and shaded text in Table IV.B-2. This intersection is stop sign-controlled and does not have sufficient capacity to accommodate the current AM and PM peak hour traffic volume.

d. Cumulative Traffic Conditions. Cumulative traffic conditions in the study area were analyzed for Year 2030 using CCTA traffic model forecasts, which are based on the adopted General Plans of Contra Costa County jurisdictions, including the City of Concord. The future roadway network assumed for 2030 does not contain any new links in the study area. There are, however, several locations where new traffic controls and lanes are assumed to be in place, such as on Arnold Industrial Way. Cumulative conditions, without and with the proposed project, are described in Figures IV.B-9 through IV.B-12. Additional discussion addressing Cumulative Without and Plus the Proposed Project conditions is provided in subsection 2.d.

Two projects being considered near Intersection 8 (Arnold Industrial Place and SR 4 Eastbound Ramps) are Concord Station, an approximately 109,000-square-foot shopping center proposed at the Solano Drive-In; and a gas station with a 2,900-square-foot convenience store proposed at Arnold Industrial Place, immediately west of the SR 4 off-ramp. Each of these projects, when implemented, would also exacerbate the unacceptable LOS F operations at Intersection 8 in the AM peak hour and the unacceptable LOS E operations in the PM peak hour (installation of a traffic signal at this intersection will mitigate the impact of these projects under cumulative conditions with the proposed project to a less-than-significant level [see Impact and Mitigation Measure Trans-3 below]).

e. Regulatory Considerations. The City of Concord General Plan, Municipal Code, Trails Master Plan, Policy and Procedure 144, and Off-site Street Improvement Program (OSIP) include goals, objectives, policies and other regulatory guidance applicable to the proposed project. Each of these regulatory documents is described below. CCTA technical procedures are also described.

(1) Concord General Plan. Concord General Plan policies related to transportation and circulation are listed and discussed in Table IV.A-1 in Section IV.A, Land Use and Planning Policy.

(2) Trails Master Plan. 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. This 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 bicyclists 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.

The project site’s frontage, Arnold Industrial Way, is not a designated future bicycle lane/route in this plan and is currently not improved with any bike trails. However, Contra Costa County developed
segments of a Class III bike trail known as the “SR 4 Bikeway” along portions of Arnold Industrial Way and the study area prior to North Concord’s annexation into the City.

(3) **Municipal Code Section 106-75.** Concord Municipal Code Section 106-75, 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 the State Department of Public Works Division of Highways traffic engineering and safety standards and warrants. The State traffic signal warrant procedure is described above in subsection 1.b(4).

(4) **City of Concord Policy and Procedure 144.** Municipal Code Article VI, Off-Site Street Improvement Program, and Article VII, Relationship Between 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 the process for which proposed development projects are to be evaluated 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.

(5) **Off-Site Street Improvement Program (OSIP).** The City adopted CMC Section 78-151, Off-site Street Improvement Program (OSIP), which established an equitable fee and administration program for funding the needed improvements to accommodate future growth. OSIP fees are updated periodically to assure that appropriate fees are being collected to pay for base level General Plan transportation improvements.

In 2005, the City updated the City’s OSIP fees and Policy and Procedure 144. The OSIP Fee Study derived cost estimates for transportation improvements contemplated in the General Plan Transportation and Circulation Element. The improvements were determined by updating the land uses and traffic model forecasts based on the 2005 update of the General Plan. The study evaluated the transportation system needs for the next ten years, providing the nexus required under AB 1600\(^1\) for the transportation projects identified in the City’s Capital Improvement Program/Transportation Improvement Program (CIP/TIP) 10-Year Plan. The City Council approved the new OSIP fees and changes to Policy and Procedure 144 on July 5, 2005. The fee adjustments went into effect in September 2005.

The OSIP program establishes an equitable fee system that distributes the cost of citywide improvements evenly among all developments based on adopted fee guidelines and trip generation. The fee collected from developers is 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. Project-specific traffic impacts and mitigations are

\[^1\] AB 1600 refers to Government Code Section 66000 et. seq., which sets forth requirements related to exaction of fees from developers to defray the cost of public improvements related to development projects.
determined separately from the OSIP fee determination process through the preparation of a CEQA-type traffic impact study.

(6) CCTA Technical Procedures. The CCTA Regional Committees established Traffic Service Objectives (TSOs) for Action Plans on Routes of Regional Significance. The Authority specified that these TSOs be reviewed for all General Plan Amendments (GPAs) that generate more than 500 vehicle trips. Since the proposed Lowe’s project does not include a GPA, the TSOs have not been specifically reviewed for this project.

2. Impacts and Mitigation Measures

This subsection identifies project impacts and appropriate mitigation measures. Significant impacts are identified according to the significance criteria set forth for this study. The significance criteria are presented below, followed by a discussion of the project’s less-than-significant and significant traffic and circulation impacts.

a. Criteria of Significance. Based on the CEQA Guidelines and City policies, the proposed project would create a significant traffic impact if it would:

- Exceed, either individually or cumulatively, a level of service standard established by a county congestion management agency (i.e., CCTA) for designated roads or highways, or exceed the minimum level of service standards for the roadway network as established by the City of Concord General Plan Policy GM-1.3.1 and Policy and Procedure 144 for Traffic Impact Analysis and Mitigation Requirements.
- Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Result in inadequate emergency access;
- Result in inadequate parking capacity under City parking standards;
- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks) or generate pedestrian, bicycle, or transit travel demand that would not be accommodated by current pedestrian facilities, bicycle development plans, or long-range transit plans; or
- Result in a projected future over-capacity freeway condition where current long-range planning studies show an under-capacity condition.

b. Trip Generation, Distribution, and Assignment: Proposed Project. Project trips were generated using trip rates from the Institute of Transportation Engineers, *Trip Generation Manual*, 7th Edition. The proposed project’s trip generation is provided in Table IV.B-3.

(1) Trip Generation. The proposed project would have three components that would generate trips: 1) a Lowe’s home improvement store with 137,933 square feet of interior commercial space and 31,179 square feet of garden center space; 2) another retail anchor tenant store with 155,000 square feet of space that could include some outdoor sales or storage areas; 3) a 3,220-square-foot fast food restaurant with a drive-through (a land use and square footage assumption that is based on potential restaurant use for outparcels that would result in worst-case traffic impacts); and 4) 5,000
square feet of support retail pad space. Since the site is currently vacant except for one auto storage/sales business, there has been no deduction taken for any prior uses on the site.

Trip generation for development projects, such as the proposed project, is typically calculated based on rates contained in the Institute of Transportation Engineer’s (ITE) publication, *Trip Generation 7th Edition*. *Trip Generation* is a standard reference used by jurisdictions throughout the country for the estimation of 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. Consistently, 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 from a proposed project, the trips generated by a proposed development are typically estimated between the hours of 8:00 to 9:00 a.m. and 5:00 to 6:00 p.m. While the project itself may generate more traffic during some other time of the day, such as around noon, the peak of “adjacent street traffic” represents the time period when the uses generally contribute to the greatest amount of congestion with the PM peak when commute traffic is prevalent commonly being the greatest congestion period.

The proposed Lowe’s store is most appropriately classified as a Home Improvement Superstore (ITE and Use Code 862), based on trip generation surveys taken at other Bay Area Lowe’s stores.

For the purpose of estimating trip generation, the proposed retail anchor tenant store has been classified as a Free-Standing Discount Superstore (ITE Land Use Code 815). This use is characterized by ITE as providing “a variety of customer services, centralized cashiering, and a wide range of products that typically maintain long store hours seven days a week.” It should be noted that ITE Land Use Code 815 does not include, or account for, a full-service grocery department, consistent with the proposed project (i.e., no grocery store proposed). Trip generation rates for ITE Land Use Code 815 are considerably higher than rates for other ITE commercial land use categories (e.g., shopping center) and are generally considered to be a conservative (i.e., worst-case) estimate of the trip generation and, as such, are most appropriate for the environmental review of the project.

Trip generation calculations are based on the square footage of the enclosed building consistent with ITE recommendations. ITE specifies that “unroofed areas and unenclosed roofed-over spaces, except those contained within the principle out-side faces of exterior walls, should be excluded from the area calculations.” However, to be conservative, the exterior garden center square footages for the Lowe’s store were included in the trip generation calculations.

The remaining two retail pads abutting Arnold Industrial Way were analyzed with the Fast Food with Drive Through rates (ITE Land Use Code 934) and the general category of Shopping Center (ITE Land Use Code 820).

Table IV.B-3 provides a summary of trip generation rates applied to the proposed project. Table IV.B-4 provides a summary of the vehicular trips that would result from the proposed project. Figure
IV. SETTING, IMPACTS AND MITIGATION MEASURES

B. TRANSPORTATION AND CIRCULATION

Table IV.B-3: Trip Generation Rates Used for Proposed Project

<table>
<thead>
<tr>
<th>Proposed Use – Land Use Category Used for Trip Rate Calculations</th>
<th>Daily Trip Rate Per 1,000 Square Feet</th>
<th>Trip Rates per 1,000 Square Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>AM Peak Hour (8:00 – 9:00 AM)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>In</td>
</tr>
<tr>
<td>Lowe’s – Home Improvement Superstore (ITE Land Use Code 862)</td>
<td>29.80</td>
<td>0.65</td>
</tr>
<tr>
<td>Retail Anchor Tenant – Free-Standing Discount Superstore (ITE Land Use Code 815)</td>
<td>56.02</td>
<td>0.57</td>
</tr>
<tr>
<td>Retail Pads – Shopping Center (ITE Land Use Code 820)</td>
<td>42.94</td>
<td>0.63</td>
</tr>
<tr>
<td>Retail Pads – Fast Food Restaurant with Drive Through (ITE Land Use Code 934)</td>
<td>496.12</td>
<td>27.09</td>
</tr>
</tbody>
</table>


Table IV.B-4: Trip Generation AM/PM Peak Hour: Proposed Project Only

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Building Size (Square Feet)</th>
<th>Trips Generated by Proposed Project</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Daily Trips In</td>
<td>Out</td>
</tr>
<tr>
<td>Lowe’s Home Improvement</td>
<td>169,112</td>
<td>5,040</td>
</tr>
<tr>
<td>Retail Anchor Tenant (Discount Superstore)</td>
<td>155,000</td>
<td>8,683</td>
</tr>
<tr>
<td>Retail Pads – Retail Uses</td>
<td>5,000</td>
<td>215</td>
</tr>
<tr>
<td>Retail Pads – Fast Food Restaurant</td>
<td>3,220b</td>
<td>799</td>
</tr>
<tr>
<td>Total</td>
<td>332,332</td>
<td>14,737</td>
</tr>
</tbody>
</table>

a A 50-percent reduction for pass-by/linked trips was applied to the fast food restaurant trip generation.

b Traffic analysis assumes a 3,220-square-foot fast food restaurant with a drive-through, a land use and square footage assumption that is based on potential restaurant use for outparcels and would result in worst-case traffic impacts.


IV.B-5 shows AM and PM peak hour trips at the project driveways, and Figure IV.B-6 depicts the AM and PM peak hour trips generated by the proposed project at each study area intersection.

2 Trip Distribution and Assignment. Figure IV.B-5 depicts how the proposed project’s vehicular trips are estimated to be distributed on to the project site’s frontage along Arnold Industrial Way. The trip distribution assumptions were based on the project’s proximity to freeway interchanges, existing traffic volumes, and the land use patterns in the area.

3 Weekend Traffic. In the traffic study, 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 in the traffic study for this project assumed that all uses had their peak traffic generation during the exact same hour, which would result in 1,996 vehicle trips. As a result, weekend (Saturday) peak hour of traffic (2:00-3:00 p.m.) would be approximately two-thirds higher then the weekday PM peak hour.
FIGURE IV.B-5

Lowe's Shopping Center Project EIR
AM (PM) Trip Distribution and
Trip Assignment at Project Driveways

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FIGURE IV.B-6
Lowes Shopping Center Project EIR
AM(PM) Peak Hour
Trip Generation
c. **Traffic Volumes and Levels of Service: Existing Condition Plus Project.** The following four-part discussion addresses intersection, road segment, weekend, and freeway Existing Plus Project conditions.

1. **Intersection Traffic Impacts.** The Existing Plus Proposed Project intersection level of service and traffic volume conditions are provided in Table IV.B-5 and shown in Figures IV.B-7 and IV.B-8. As indicated in Table IV.B-5, the addition of traffic from the proposed project at signalized intersections would result in continued acceptable level of service operations (i.e., LOS D or 0.89 v/c or lower). At stop sign-controlled Intersections 2 and 3, however, the addition of proposed project trips to existing background trips would result in a reduction in LOS below the City standard of LOS D. Additionally, Intersection 8 is already at LOS F during the AM peak under existing conditions and at LOS E during the PM peak under existing conditions. Intersections 2 and 3 would degrade to LOS E (from LOS C) in the PM peak hour when the proposed project is added to the existing condition traffic volume, and Intersection 8 would degrade to LOS F (from LOS E) in the PM peak hour. As a result, the installation of traffic signals would be necessary to ensure acceptable level of service operations and conformance with CCTA and Concord Policy and Procedure 144 traffic standards.

2. **Segment Traffic Impacts.** Studies were also conducted of the segment of Arnold Industrial Way between Port Chicago Highway and Peralta Road. There is currently one lane for through traffic in each direction. With the addition of the project, there would be a center turn lane resulting in three lanes of traffic on Arnold Industrial Way. This future cross-section would be adequate to accommodate the future traffic volumes. The current ADT on Arnold Industrial Way is about 4,500 vehicles per day, and the peak hour traffic is about 270 vehicles per hour in each direction. This would grow to about 9,800 ADT (500 vehicles per hour in each direction) with the addition of the Lowe’s project. An ADT of 15,000 vehicles per day and a peak hour volume of 800 vehicles per hour can be accommodated on a two-lane roadway at LOS C or better, as long as any significant turning movements have a separate turn lane. The adequacy of the one through lane in each direction is also borne out by the intersection capacity calculations, which show the through traffic movement to be at LOS A in both directions of travel.

3. **Weekend Traffic Impacts.** Based on the analysis of weekend peak hour traffic, the addition of project trips to existing background trips at Intersection 8 (Arnold Industrial Place and the SR 4 Eastbound Ramps) would warrant the installation of a traffic signal in order to ensure that queues from Sunday morning flea-market traffic do not extend too far back onto the mainline freeway. Intersection 9 (Arnold Industrial Place and Peralta Road) is forecast to continue to have acceptable operations on the weekends, even with the addition of traffic from the proposed project. Weekend traffic counts were reviewed with City staff and it was verified that, beyond the above mentioned intersections, weekend traffic operations would not result in any additional project impacts.

4. **Freeway Traffic Impacts.** Traffic destined for the proposed project would be distributed between SR 4 and SR 242, but would not increase existing condition traffic levels on any segment of either freeway by more than five percent as demonstrated by recent Caltrans analyses for these free
### Table IV.B-5: Level of Service: Existing (2008) Condition Without and Plus Proposed Project

<table>
<thead>
<tr>
<th>No.</th>
<th>Intersection</th>
<th>Traffic Control Device</th>
<th>2008 Without Project</th>
<th>2008 With Project</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>AM Peak</td>
<td>PM Peak</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>V/C or Seconds of Delay</td>
<td>V/C or Seconds of Delay</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>LOS</td>
<td>LOS</td>
</tr>
<tr>
<td>1</td>
<td>Solano Way and Arnold Industrial Way (Imhoff Drive)</td>
<td>Signal</td>
<td>A 0.25 v/c</td>
<td>A 0.32 v/c</td>
</tr>
<tr>
<td>2</td>
<td>Arnold Industrial Way and SR 4 Westbound Ramps (north side)</td>
<td>Stop Sign</td>
<td>B 12.5 delay</td>
<td>C 17.8 delay</td>
</tr>
<tr>
<td>3</td>
<td>Arnold Industrial Way and Laura Alice Way (Peralta Road)</td>
<td>Stop Sign</td>
<td>B 11.9 delay</td>
<td>C 15.9 delay</td>
</tr>
<tr>
<td>4</td>
<td>Arnold Industrial Way and Main Project Access</td>
<td>Future/Signal</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>5</td>
<td>Arnold Industrial Way and Port Chicago Highway</td>
<td>Signal</td>
<td>A 0.32 v/c</td>
<td>A 0.47 v/c</td>
</tr>
<tr>
<td>6</td>
<td>Port Chicago Highway and SR 4 Westbound Ramps (north side)</td>
<td>Signal</td>
<td>A 0.45 v/c</td>
<td>A 0.45 v/c</td>
</tr>
<tr>
<td>7</td>
<td>Solano Way and Olivera Road (Marsh Drive)</td>
<td>Signal</td>
<td>A 0.23 v/c</td>
<td>A 0.22 v/c</td>
</tr>
<tr>
<td>8</td>
<td>Arnold Industrial Place and SR 4 Eastbound Ramps (south side)</td>
<td>Stop Sign</td>
<td>F 53.0 delay</td>
<td>E 37.0 delay</td>
</tr>
<tr>
<td>9</td>
<td>Arnold Industrial Place and Peralta Road</td>
<td>Stop Sign</td>
<td>B 14.6 delay</td>
<td>B 11.6 delay</td>
</tr>
<tr>
<td>10</td>
<td>Peralta Road and Olivera Road</td>
<td>Stop Sign</td>
<td>B 11.1 delay</td>
<td>B 10.7 delay</td>
</tr>
<tr>
<td>11</td>
<td>Olivera Road and Grant Street (SR 242) Southbound Ramps (west side)</td>
<td>Signal</td>
<td>A 0.23 v/c</td>
<td>A 0.33 v/c</td>
</tr>
<tr>
<td>12</td>
<td>Olivera Road and SR 242 Northbound Ramps (east side)</td>
<td>Signal</td>
<td>A 0.29 v/c</td>
<td>A 0.35 v/c</td>
</tr>
</tbody>
</table>

Notes: Signalized intersections are analyzed in v/c ratio LOS; unsignalized intersections are analyzed in seconds of delay based LOS. **Bold shading** represents intersections that do not meet operational level of service standards criteria. For Intersection 4, Main Project Entrance, no traffic control device is currently provided, but a traffic signal would be provided at this location as part of the proposed project. 

FIGURE IV.B-7

Lowes Shopping Center Project EIR
AM/PM Peak Hour Levels of Service - Existing Plus Project

Lowes Shopping Center Project EIR
AM(PM) Peak Hour Traffic Volumes - Existing Plus Project
way segments.\textsuperscript{2} Traffic increases associated with the proposed project have been anticipated by Caltrans based on the land use changes in the Concord General Plan and planned for with the programmed improvements for the I-680/SR 4 interchange, as well as the widening of the SR 4 from four to six lanes adjacent to the project site. These improvements will ensure that all freeway segments would operate at an acceptable level of service with the proposed project and, therefore, impacts to freeways would be less than significant.

d. Traffic Volumes and Levels of Service: 2030 Cumulative Without and Plus Project Conditions. Cumulative traffic conditions for year 2030 in the project study area were analyzed using CCTA’s countywide traffic model forecasts, which are based on land use assumptions in adopted General Plans for all Contra Costa County jurisdictions, including Concord. The resulting cumulative traffic volumes without and with the proposed project for the 12 intersections are shown on Figures IV.B-9 and IV.B-11, respectively. A summary of the level of service results for Cumulative Without and Plus Proposed Project conditions is provided in Table IV.B-6 and shown in Figures IV.B-10 and IV.B-12, respectively.

The 2030 roadway network analyzed in the traffic study would not have any new links in this study area, but several existing links, such as Arnold Industrial Way, will be improved with additional lanes and new traffic controls, as described below. Also by 2030, significant changes to the I-680/SR 4 interchange are anticipated, according to the CCTA.

The only roadway segment that would be significantly degraded by the combination of project and cumulative traffic would be Arnold Industrial Way in the segment adjacent to the proposed project. This segment of Arnold Industrial Way, however, would be improved as part of the proposed project to provide three vehicular traffic lanes and bike lanes on both sides (i.e., north and south sides of the street) for a total roadway width of 48 feet. The primary entrance to the project site on Arnold Industrial Way would be signalized, while the other four entrances would be controlled by stop signs. No other cumulative roadway segment impacts were identified.

The following describes traffic conditions, assumed improvements (based on the City’s General Plan and OSIP program), and land use anticipated to occur by 2030 in the vicinity of the 12 study area intersections.

1) Solano Way and Arnold Industrial Way (Imhoff Drive): No changes to this intersection are anticipated. The north leg of this intersection will continue as a private road serving the oil and refinery businesses on Solano Way. No significant land use changes are anticipated for this area.

2) Arnold Industrial Way and Highway 4 Westbound Ramps (North side): A traffic signal will be installed and left-turn lanes and pedestrian signals will be incorporated into this intersection. The north leg of this intersection will be an access roadway for the industrial areas and existing sports fields north of SR 4.

3) Arnold Industrial Way and Laura Alice Way (Peralta Way): A traffic signal will be installed and pedestrian controls will be put in place at this intersection. As part of the installation of the traffic signal, the storage for the westbound left-turn lane on Arnold Industrial Way will increase.

\textsuperscript{2} The highest possible percentage of project traffic for any freeway segment was determined to be 4.9 percent on SR 4 between Solano Way and I-680. This segment had 331 project trips and 6,500 existing peak hour trips. This is the segment with the lowest available ADT from Caltrans most recent volumes (2008) and represents the worse-case condition.
**AM (PM) Peak Hour Traffic Volumes**

**Cumulative (Year 2030) Without Project**

**LSA**

**NOT TO SCALE**

**SOURCE:** ABRAMS ASSOCIATES TRAFFIC ENGINEERING, INC., 2008.

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FIGURE IV.B-10

Lowe’s Shopping Center Project EIR
AM/PM Levels of Service - Cumulative (Year 2030) Without Project

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FIGURE IV.B-12

Lowe’s Shopping Center Project EIR
AM/PM Levels of Service -
Cumulative (Year 2030) Plus Project
### Table IV.B-6: Cumulative (2030) Without and Plus Proposed Project: Intersection Levels of Service and Delay (with Assumed Improvements)

<table>
<thead>
<tr>
<th>No.</th>
<th>Intersection</th>
<th>Traffic Control Device</th>
<th>Cumulative Without Project</th>
<th>Cumulative Plus Project</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>AM Peak Hour LOS V/C or Delay</td>
<td>PM Peak Hour V/C or Delay</td>
<td>AM Peak Hour V/C or Delay</td>
</tr>
<tr>
<td>1</td>
<td>Solano Way and Arnold Industrial Way (Imhoff Drive)</td>
<td>Signal</td>
<td>A 0.46 v/c</td>
<td>A 0.55 v/c</td>
</tr>
<tr>
<td>2</td>
<td>Arnold Industrial Way and SR 4 Westbound Ramps (north side)</td>
<td>Signal</td>
<td>A 0.55 v/c</td>
<td>A 0.45 v/c</td>
</tr>
<tr>
<td>3</td>
<td>Arnold Industrial Way and Laura Alice Way (Peralta Road)</td>
<td>Signal</td>
<td>A 0.37 v/c</td>
<td>A 0.47 v/c</td>
</tr>
<tr>
<td>4</td>
<td>Arnold Industrial Way and Main Project Access</td>
<td>Signal</td>
<td>--- n/a</td>
<td>--- n/a</td>
</tr>
<tr>
<td>5</td>
<td>Arnold Industrial Way and Port Chicago Highway</td>
<td>Signal</td>
<td>A 0.36 v/c</td>
<td>A 0.52 v/c</td>
</tr>
<tr>
<td>6</td>
<td>Port Chicago Highway and SR 4 Westbound Ramps (north side)</td>
<td>Signal</td>
<td>A 0.45 v/c</td>
<td>A 0.52 v/c</td>
</tr>
<tr>
<td>7</td>
<td>Solano Way and Olivera Road (Marsh Drive)</td>
<td>Signal</td>
<td>A 0.31 v/c</td>
<td>A 0.34 v/c</td>
</tr>
<tr>
<td>8</td>
<td>Arnold Industrial Place and SR 4 Eastbound Ramps (south side)</td>
<td>Signal</td>
<td>A 0.58 v/c</td>
<td>A 0.58 v/c</td>
</tr>
<tr>
<td>9</td>
<td>Arnold Industrial Place and Peralta Road</td>
<td>Stop Sign</td>
<td>C 18.2 delay</td>
<td>C 20.8 delay</td>
</tr>
<tr>
<td>10</td>
<td>Peralta Road and Olivera Road</td>
<td>Stop Sign</td>
<td>B 12.6 delay</td>
<td>C 15.8 delay</td>
</tr>
<tr>
<td>11</td>
<td>Olivera Road and Grant Street (SR 242) Southbound Ramps (west side)</td>
<td>Signal</td>
<td>A 0.28 v/c</td>
<td>A 0.39 v/c</td>
</tr>
<tr>
<td>12</td>
<td>Olivera Road and SR 242 Northbound Ramps (east side)</td>
<td>Signal</td>
<td>A 0.34 v/c</td>
<td>A 0.51 v/c</td>
</tr>
</tbody>
</table>

**Notes:** In the above table, Intersections 2, 3, 4 and 8, shown in *bold shading*, have been upgraded from the existing stop sign-controlled devices to traffic signal controlled-devices in the future (Year 2030). In the Cumulative Without Project condition, Intersection 4 (Main Project Access) would not exist.


4) **Arnold Industrial Way and the Project Entrance:** The proposed project would add a traffic signal to this new intersection. No further changes should be required.

5) **Arnold Industrial Way and Port Chicago Highway:** This intersection will not need to be reconstructed but it should be monitored. Some changes to the pavement markings and operations may eventually be desirable. Currently, there are heavy volumes on the right-turn movement from eastbound Arnold Industrial Way onto southbound Port Chicago Highway during the PM peak hour. Since the separate eastbound left-turn lane is underused during the peak hours it is recommended that the potential for converting this lane to a shared left and right turn lane be examined. This intersection is assumed to remain as a T-intersection.

6) **Port Chicago Highway and Highway 4 Westbound Ramps (North Side):** This intersection will not be changed, and will continue to operate at an acceptable Level of Service.

7) **Solano Way and Olivera Road (Marsh Drive):** This intersection will not be changed and will continue to operate at an acceptable Level of Service.
8) **Arnold Industrial Place and Highway 4 Eastbound Ramps (South Side):** A traffic signal will be installed and pedestrian controls will be put in place, along with additional left-turn lanes on Arnold Industrial Way. It is expected that this intersection could add a fourth leg at some time in the future, if the Solano Drive-in site is redeveloped. At that time further widening would be required to maintain an acceptable level of service.

9) **Arnold Industrial Place and Peralta Road:** This intersection does not need to be changed and will continue to be stop sign-controlled. However, this intersection should be monitored because in the future (i.e., Cumulative Year 2030), the growth in traffic at this intersection is anticipated to approach a level of service in the PM peak hour that would exceed the City’s standard. If land uses change in the area becomes more intense in terms of trip generation, it is possible that a traffic signal would be warranted.

10) **Peralta Road and Olivera Road:** No further changes are anticipated. The intersection will continue to operate with stop sign control.

11) **Olivera Road and Grant Street:** This intersection will continue to operate with a traffic signal. No changes are needed in the future.

12) **Olivera Road and Highway 242 northbound ramps (east side):** This intersection will continue to operate with a traffic signal. Little project traffic is forecast to use this interchange area. No changes are needed in the future.

The cumulative LOS analysis was based on Year 2030 intersection turning movements that were estimated in the traffic study by:

- Establishing 2008 existing traffic volumes via intersection counts;
- Adding traffic volume from approved and proposed projects anticipated by 2008;
- Calculating and adding traffic from proposed project to each study area intersection;
- Using 2030 CCTA peak hour forecasts to add net new growth from proposed project and external sources to each of the through traffic movements on major streets in study area; and
- Individually studying and adjusting side street movements and minor traffic movements to reflect any local changes in traffic generation. This is done at locations which are not covered in specific detail by the traffic model.

As described, Table IV.B-6 provides the 2030 Cumulative Without and Plus Proposed Project conditions with assumed improvements incorporated (i.e., addition of signals at Intersections 2, 3, 4, and 8). As already described, conditions at four intersections (three existing intersections and one new intersection) will require that the existing stop sign control devices be upgraded to new traffic signals. Table IV.B-7 shows the LOS at the four intersections with and without installation of traffic signals. Once these four intersections are upgraded with traffic signals, all study area intersections will operate at acceptable levels of service.

e. **Site Access.** The project site would have access via five driveways as described below and depicted in Figure IV.B-13. Left-turn lanes would be provided on Arnold Industrial Way on the approach to the major driveways. The queue lengths have studied to determine the length required for each of these turn lanes, and have been found to be of adequate length. The specific calculations of left-turn storage are shown on the intersection capacity calculations (see Appendix B of the EIR).
Table IV.B-7: Cumulative (2030) Plus Proposed Project: Without and With Assumed Improvements for Affected Intersections Only

<table>
<thead>
<tr>
<th>No.</th>
<th>Affected Intersection</th>
<th>2030 + Proposed Project Without Mitigation</th>
<th>2030 + Proposed Project With Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>AM Peak Seconds of Delay</td>
<td>PM Peak Seconds of Delay</td>
</tr>
<tr>
<td>2</td>
<td>Arnold Industrial Way and SR 4 Westbound Ramps (north side)</td>
<td>C 16.9 F 62.8</td>
<td>A 0.58 A 0.55</td>
</tr>
<tr>
<td>3</td>
<td>Arnold Industrial Way and Laura Alice Way (Peralta)</td>
<td>C 18.4 F 93.8</td>
<td>Signal A 0.40 B 0.63</td>
</tr>
<tr>
<td>4</td>
<td>Arnold Industrial Way and Main Project Entrance</td>
<td>n/a -- n/a --</td>
<td>Signal A 0.17 A 0.41</td>
</tr>
<tr>
<td>8</td>
<td>Arnold Industrial Place and SR 4 Eastbound Ramps (south side)</td>
<td>F &gt;190.6 F &gt;208.3</td>
<td>Signal B 0.64 C 0.75</td>
</tr>
</tbody>
</table>

Notes: **Bold shading** represents intersections that do not meet operational standards. Stop sign-controlled intersection LOS provided is based on a seconds of delay methodology; traffic signal-controlled intersection LOS is based on a volume-to-capacity (v/c) ratio methodology (see subsection 1.b(2) for additional discussion on LOS methodology applied to this analysis). Because the proposed project includes the installation of a signal at Intersection 4, no LOS and v/c data are analyzed to indicate what these results would be if the intersection was stop sign-controlled. As a result, no data are provided in the above table for this intersection in the without mitigation scenario.


- **Lowe’s West** – The driveway located farthest west along the project site’s frontage, referred to as the Lowe’s West driveway, would provide unsignalized ingress and egress. This driveway would be located directly west of tenant pad Parcel 2 and would provide a two-lane, 40-foot driveway width, with one ingress and one egress lane each. Eastbound left turns would be permitted at this driveway. Ingress for eastbound traffic at this driveway would be uncontrolled, yielding to oncoming westbound traffic prior to turning left into the shopping center from a center turning lane on Arnold Industrial Way. Ingress for westbound traffic would be uncontrolled; traffic would enter the site directly from the westbound Arnold Industrial Way through traffic lane. Ingress from this driveway would take site patrons to the western edge of the parking area, located behind (north of) the two tenant pads fronting Arnold Industrial Way. Egress from this driveway would be stop-signed, and would allow for east or west turning onto Arnold Industrial Way.

- **Lowe’s East** – The Lowe’s East driveway would be located directly east of Parcel 2. This driveway would also provide unsignalized ingress and egress to the site. This driveway would be 30 feet wide and provide two lanes, one for ingress and one for egress. Similar to the Lowe’s West driveway, vehicular ingress for eastbound traffic would be uncontrolled, yielding to oncoming westbound traffic from a center turning lane on Arnold Industrial Way. Ingress for westbound traffic would be uncontrolled, entering the site directly from the through traffic lane on Arnold Industrial Way. Egress from this driveway would be stop sign-controlled, and would only allow for right (westbound) turning movements out of the shopping center.
Main Entrance – The project’s main entrance driveway would be located in the center of the project site’s 1,100-foot Arnold Industrial Way frontage. This driveway would provide three-lane, 43-foot-wide signal-controlled ingress and egress to the site. Similar to the other driveways, ingress for eastbound traffic would use the center lane in Arnold Industrial Way. Ingress for westbound traffic would also be uncontrolled, using the through traffic lane on Arnold Industrial Way for its turning movement queue. Two egress lanes would be provided; one would provide a dedicated right (westbound) turn, and the other would provide a dedicated left (eastbound) turn. A concrete island located between the ingress and egress lanes would physically separate vehicular traffic using this driveway.

Major 2 West – The fourth driveway into the project site would be located east of the main entrance driveway and would provide unsignalized ingress and egress into the site. This driveway would provide a three-lane, 40-foot-wide access to the site. Two lanes would provide egress, and the other would provide ingress. As with the other unsignalized driveways, ingress for eastbound traffic would be uncontrolled, yielding to oncoming westbound traffic from a center turning lane on Arnold Industrial Way. Ingress for eastbound traffic would be uncontrolled from the through traffic lane on Arnold Industrial Way. The two egress lanes would be stop sign-controlled; one lane would be dedicated for right-turn (westbound) traffic only, and the other lane would be dedicated for left-turn (eastbound) traffic only.

Major 2 East – The last driveway, referred to as Major 2 East, would have a design identical to the Major 2 West driveway, described above.

Project Impacts and Mitigation Measures. To determine levels of service, the assigned project trips were added to the predicted traffic volumes. Analysis was completed based on corresponding year assumptions for lane configurations and traffic control.

Level of Service Conditions and Impacts. The following summarizes the level of service conditions for less-than-significant and significant impacts. Mitigation measures are provided, as appropriate.

As shown in Table IV.B-7, four intersections will operate at unsatisfactory levels of service in the Cumulative Plus Proposed Project condition if improvements are not provided. See subsection (d) above and section VI.E, Cumulative Impacts, for additional detail about this impact.

Impact TRANS-1: The addition of project traffic to existing traffic in the Existing Plus Project condition would worsen the operation of Intersection 2 (Arnold Industrial Way and SR 4 Westbound Ramps intersection) below the established standard of LOS D to unacceptable LOS E in the PM peak hour. (S)

Mitigation Measure TRANS-1: To mitigate the proposed project’s impact of worsening the existing LOS at Intersection 2 (Arnold Industrial Way and SR 4 Westbound Ramps intersection) to an unacceptable LOS during the PM peak hour under the Existing Plus Project condition, Intersection 2 shall be modified to replace the existing stop sign-controlled traffic device with a new traffic signal. The project applicant’s payment of the unfunded (non-Off-site Street Improvement Program [OSIP]) portion of the cost for this improvement shall constitute the project’s contribution to the installation of the new traffic signal. Said payment of the unfunded (non-OSIP) portion of the cost for this improvement shall be made on a pro-rata basis.
for each use based on its projected PM peak hour trip generation relative to the overall PM peak hour trip generation for the entire project site at the time of issuance of the building permit for each use. Installing the traffic signal would improve level of service at this intersection to an acceptable level in the Cumulative Plus Project condition (i.e., to LOS A in the PM peak hour from LOS F, as shown in Table IV.B-7). Payment of the unfunded (non-OSIP) portion of the cost for this improvement would reduce the proposed project’s impact to a less-than-significant level. (LTS)

**Impact TRANS-2:** The addition of project traffic to existing traffic in the Existing Plus Project condition would worsen the operation of Intersection 3 (Arnold Industrial Way and Laura Alice Way intersection) to unacceptable LOS E in the PM peak hour. (S)

**Mitigation Measure TRANS-2:** To mitigate the proposed project’s impact of worsening the existing LOS at Intersection 3 (Arnold Industrial Way and Laura Alice Way intersection) to an unacceptable LOS during the PM peak hour under the Existing Plus Project condition, Intersection 3 shall be modified to replace the existing stop sign-controlled traffic device with a new traffic signal. The project applicant’s payment of the unfunded (non-Off-site Street Improvement Program [OSIP]) portion of the cost for this improvement shall constitute the project’s contribution to the installation of the new traffic signal. Said payment of the unfunded (non-OSIP) portion of the cost for this improvement shall be made on a pro-rata basis for each use based on its projected PM peak hour trip generation relative to the overall PM peak hour trip generation for the entire project site at the time of issuance of the building permit for each use. Installing the traffic signal would improve level of service at this intersection to an acceptable level in the Cumulative Plus Project condition (i.e., to LOS B in the PM peak hour from LOS F, as shown in Table IV.B-7). Payment of the unfunded (non-OSIP) portion of the cost for this improvement would reduce the proposed project’s impact to a less-than-significant level. (LTS)

**Impact TRANS-3:** The addition of project traffic to existing traffic in the Existing Plus Project condition would worsen the operation of the Intersection 8 (Arnold Industrial Place and SR 4 Eastbound Ramps intersection) to unacceptable LOS F in the PM peak hour. (S)

**Mitigation Measure TRANS-3:** To mitigate the proposed project’s contribution to the worsening of the existing LOS at Intersection 8 (Arnold Industrial Way and SR 4 Eastbound Ramps intersection) expected to occur in the Existing Plus Project condition, Intersection 8 shall be modified to replace the existing stop sign-controlled traffic device with a new traffic signal. The project applicant’s payment of the City of Concord’s Off-site Street Improvement Program (OSIP) fee shall constitute the project’s contribution to the installation of the new traffic signal. Payment of the OSIP fee shall be made prior to the issuance of any building permit for the project based on the use and building square footage authorized under the permit. Installing the traffic signal would improve level of service at this intersection to an acceptable level in the Cumulative Plus Project condition (i.e., to LOS C in the PM peak hour from LOS F, as shown in Table IV.B-7). Payment of the OSIP fee would reduce the proposed project’s contribution to this impact to a less-than-significant level. (LTS)
Impact TRANS-4: Intersection 4 (Arnold Industrial Way and Main Project Access intersection) would operate below an acceptable level of service in the Cumulative Plus Project condition due to project-related impacts. (S)

Mitigation Measure TRANS-4: To mitigate the proposed project’s impacts expected to occur in the year 2030, a traffic signal shall be installed at the Arnold Industrial Way and Main Project Access intersection prior to issuance of the first Certificate of Occupancy. Because the project would trigger the need for the signal, the project applicant shall be responsible for fully funding the cost of installing the traffic signal. Installation of the traffic signal would improve the level of service of Intersection 4 in the Cumulative Plus Project condition to an acceptable level at LOS A in the AM peak hour and LOS A in the PM peak hour. (LTS)

(2) Alternative Transportation Mode Impacts. Potential impacts related to alternative transportation modes (i.e., transit, bicycle, and pedestrian) are described below.

Transit Impacts. Very few bus transit trips would be generated by the proposed project’s regular clients and customers. Many store employees, however, may take advantage of the existing County Connection bus transit service on Arnold Industrial Way to get to and from their jobs at the shopping center. The proposed project would generate approximately 30 bus passenger trips per hour during the AM and PM peak hours based on a 10-percent factor for employee transit use plus a small number of transit trips from other similar projects. This increase in ridership in the area would not affect the bus transit service standards or capacity of existing service. The project applicant proposes to provide a new westbound bus stop on Arnold Industrial Way. A bus stop and bench would also be provided in the eastbound direction on Arnold Industrial Way, across from the project site. The project would not cause any impacts on the County Connection bus routes that would require mitigation measures.

Bicycle and Pedestrian Impacts. The proposed project would not affect any existing bicycle and pedestrian facilities, including bike lanes, routes, or paths. The proposed project would, however, install 6-foot Class III dedicated bike lanes on both sides of Arnold Industrial Way along the project site frontage as a part of the project’s off-site improvements. These bike lanes would be consistent with Concord Trails Master Plan Strategy 1.2.

(3) Project Circulation, Access and Parking Impacts. Impacts associated with project circulation, access, and parking are evaluated below.

Site Circulation and Access. No site circulation or access issues have been identified that would cause a traffic safety problem or any unusual traffic congestion or delay. Each of the five proposed driveway access points would have adequate sight distances and could readily accommodate the project’s estimated traffic volumes.

For the Lowe’s store, one partially below-grade truck loading dock would be provided with three individual side-by-side loading bays, located in the northwest corner of the building and project site. This would be used for unloading all truck deliveries. A truck turn-around would be located adjacent to the loading dock to facilitate truck maneuvering. In addition, a flat-bed unloading area would be located behind Lowe’s at the northeast corner of the building. Flat-bed trucks would be unloaded by
forklift. Garden center trucks would be staged on the west side of the garden center and would also be unloaded by forklift.

**Truck Access.** The truck access plan for Lowe’s has been described in Chapter III (Project Description). Trucks would approach the project site from the SR 4/Solano Drive freeway ramps in an eastbound direction on Arnold Industrial Way, entering the project site at the farthest east driveway. The truck access would occur through an industrial area that already accommodates trucks on a regular basis, so there will be no significant impacts. The designated truck route traverses the eastern and northern (rear) edges of the project site. Trucks would exit at the farthest west driveway, turning right (westbound) on Arnold Industrial Way and continuing on to the SR 4/Solano Drive freeway on-ramp. A truck turning area would be provided to the rear of the store that would accommodate all deliveries and receiving at the Lowe’s store. All intersections and truck areas have been tested with the appropriate turning radii to confirm that the trucks can maneuver safely.

The retail anchor tenant and the occupants of the two retail/restaurant tenant pads are not known at this time, and therefore the specific time of day and location of vendor deliveries are unknown. The retail anchor tenant and tenant pads would require additional City design review and Use Permit approval. Through this additional review process, the time of day that vendor delivery trucks visit the site and the location where deliveries would occur would be reviewed and coordinated.

Truck trips from all proposed uses have been accounted for in the overall trip generation rates (as the trip rates are based on traffic surveys that included trucks), and the LOS analysis also includes factors for trucks. No safety impacts from project-related truck traffic are anticipated, since the trucks would have relatively direct access to the freeway through an industrial area that already accommodates trucks on a regular basis.

**Parking.** The proposed project would provide an adequate supply of on-site, shared, at-grade surface level parking. The proposed project would provide 1,617 off-street parking spaces in an at-grade parking area between the two big-box tenants (i.e., the Lowe’s and “Major 2” stores). The Lowe’s parcel would provide 752 parking spaces, or 1.0 space per 200 square feet of building area and 1.0 spaces per 500 square feet of garden center outdoor sales and storage area. The second retail anchor tenant parcel would provide 865 parking spaces, or about 1.12 spaces per 200 square feet of building area. These parking provisions meet or exceed the requirements of the City’s Zoning Ordinance which are one parking space per 200 square feet for freestanding stores and one space per 500 square feet of outdoor sales and storage area. The required parking for the two tenant pads would be provided within each pad, and would be reviewed for conformance with the Zoning Ordinance parking standards as part of the development review processing for each pad. Based on the analysis prepared for this project, the amount of parking provide for the Lowe’s store has been demonstrated to be more than adequate based on parking demand studies prepared for Lowe’s stores in other Bay Area locations.

The final design of the reconstructed roadway along the project site’s frontage could require the removal of up to four on-street parking spaces in front of adjacent parcels to allow for transitional pavement markings. This reduction in on-street parking space in the area surrounding the project site would be minimal, however, and would not result in any significant on-street parking shortfall in the area.
(4) **Construction Impacts.** Construction of the project would generate additional traffic from employee vehicles, trucks, and equipment. Principal construction activities that are expected to generate traffic are evaluated 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 at different points in the project. For example, the delivery and removal of heavy equipment to the project site would happen only a few times during the project duration. The construction-related traffic is expected to remain relatively consistent throughout the project. Construction of the two phases of the project would take approximately 8 months each to complete (see Chapter III, Project Description). For the other retail anchor, the truck trip generation would be the same as the Lowe’s project. Additionally, construction of the pads would generate an additional 4 trips per day, occurring mostly during the morning.

**Heavy Equipment.** It is estimated that there would be approximately eight pieces of heavy earth-moving equipment used throughout the demolition and construction of the two big box stores. Heavy equipment transport to and from the site could cause traffic impacts in the vicinity of the project site.

**Employees.** The weekday work is expected to begin around 7:00 a.m. and end around 4:00 p.m. The construction worker arrival peak would occur between 6:30 and 7:30 a.m., and the departure peak would occur between 4:00 and 5:00 p.m. These peak hours are before the citywide commute peaks of 8:00 and 9:00 a.m. and 5:00 and 6:00 p.m.

It is estimated that construction workers would require parking for 225 to 270 vehicles during the peak construction period for both the Lowe’s and retail anchor tenant stores. Additionally, deliveries, visits, and other activities may generate peak non-worker parking demand of 10 to 15 trucks and autos per day. Therefore, up to 283 vehicle parking spaces would be required during the peak construction period for the construction employees. Because the demolition and construction of the project can be phased such that employee parking demand is met by using the existing on-site parking lot at the project site, the impacts of construction-related employee traffic and parking are considered less than significant.
Demolition Material. The approximately 37,000 square feet of buildings that would be demolished would yield approximately 15,000 cubic yards of solid waste, which would be recycled. Because this demolition material would be recycled on-site, no additional truck trips would be generated to dispose of this material. However, the project would require removal of approximately 21,900 cubic yards of asphalt and aggregate base, which would generate truck trips.

Construction Material Import. The project would also require the importation of construction material, including raw materials for the building pads, the buildings, the parking area, and landscaping. Phase 1 would require approximately 650 trucks for concrete, 150 trucks for site import, 700 trucks for paving, and 75 trucks for building raw materials. Phase 2 would require approximately 650 trucks for concrete, 1,500 trucks for site export, 700 trucks for paving, and 75 trucks for building raw materials. For both phases, the total number of trucks would be 4,500. Each truck would result in one inbound and one outbound trip for a total number of 9,000 truck trips. During the peak construction period, the project could generate approximately 32 truck trips per day during Phase 1 (the Lowe’s store, beginning in 2009) and 84 truck trips per day during Phase 2 (the other tenants, beginning in 2010).

Impact TRANS-5: Demolition and construction activities associated with the proposed project would result in an increase in 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-5: 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 and require that construction employee parking be provided on the project site to eliminate conflicts with nearby industrial parking areas. The plan shall indicate how parking for construction workers will be provided during construction. The following recommendations shall be considered in the plan:

- Heavy equipment transport to and from the site shall not occur between the hours of 7:00 a.m. and 9:00 a.m. or 4:30 p.m. and 6:00 p.m. on weekdays.
- Material importation or exportation shall not occur between the hours of 7:00 a.m. and 9:00 a.m. or 4:30 p.m. and 6:00 p.m. on weekdays.
- Site ingress and egress shall occur only at the main driveways to the project site parking lot on Arnold Industrial Way. Large truck and construction equipment ingress and egress to the site shall be limited to no more than 15 trucks per hour and shall not occur between the hours of 7:00 a.m. and 9:00 a.m. or 4:30 p.m. and 6:00 p.m. on weekdays.
- Specified locations for construction worker parking and storage of construction equipment and materials.
• Warning signs indicating frequent truck entry and exit should be posted on Arnold Industrial Way.

• Debris and mud on Arnold Industrial 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 SR 4. The recommended truck route to the project site is via the Arnold Industrial Way and SR 4 Westbound Ramps (north side) and the Arnold Industrial Place and SR 4 Eastbound Ramps (south side). (LTS)
IV. SETTING, IMPACTS AND MITIGATION MEASURES

B. TRANSPORTATION AND CIRCULATION
C. AIR QUALITY

This section has been prepared using methodologies and assumptions recommended in the air quality impact assessment guidelines of the Bay Area Air Quality Management District (BAAQMD).\(^1\) In keeping with these guidelines, this chapter describes existing air quality, impacts of future traffic on local carbon monoxide levels and impacts of land use-related vehicular emissions that have regional effects. This chapter also contains a health risk assessment which analyzes the impact of project-related emissions of toxic air contaminants on human health. Mitigation measures to reduce or eliminate potentially significant air quality impacts are identified, where appropriate.

1. Setting

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

a. Air Quality Standards, Regulatory Framework and Attainment Status. Air quality standards, the regulatory framework, and State and federal attainment status are discussed below.

(1) Air Quality Standards. Both the State and federal governments have established health-based Ambient Air Quality Standards for six air pollutants: carbon monoxide (CO), ozone (O\(_3\)), nitrogen dioxide (NO\(_2\)), sulfur dioxide (SO\(_2\)), lead (Pb), and suspended particulate matter (PM). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride and visibility reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

In addition to primary and secondary Ambient Air Quality Standards, the State of California has established a set of episode criteria for CO, O\(_3\), NO\(_2\), SO\(_2\), and PM. These episode criteria refer to episode levels, ranging from Stage One to Stage Three, representing periods of short-term exposure to air pollutants that actually threaten public health. Health effects are progressively more severe as pollutant levels increase from Stage One to Stage Three.

California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS) for the criteria air pollutants are listed in Table IV.C-1. Health effects of these criteria pollutants are described in Table IV.C-2.

(2) Regulatory Framework. The Bay Area Air Quality Management District (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. BAAQMD’s jurisdiction encompasses seven Bay Area counties—Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara and Napa—and portions of Solano and Sonoma counties. The California Air Resources Board (ARB) and the U.S. Environmental Protection Agency (EPA) regulate direct emissions from motor vehicles.

(3) 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

\(^1\) Bay Area Air Quality Management District, 1999. *BAAQMD CEQA Guidelines.*
## Table IV.C-1: Federal and State Ambient Air Quality Standards

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Averaging Time</th>
<th>California Standards&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Federal Standards&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Concentration&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Primary&lt;sup&gt;b,e&lt;/sup&gt;</td>
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<tr>
<td></td>
<td></td>
<td>Method&lt;sup&gt;d&lt;/sup&gt;</td>
<td>Secondary&lt;sup&gt;c,d&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Method&lt;sup&gt;e&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Ozone (O₃)</strong></td>
<td>1-Hour</td>
<td>0.09 ppm (180 μg/m³)</td>
<td>No federal standard</td>
</tr>
<tr>
<td></td>
<td>8-Hour</td>
<td>0.07 ppm (137 μg/m³)</td>
<td>0.08 ppm (157 μg/m³)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ultraviolet Photometry</td>
<td>Same as Primary Standard</td>
</tr>
<tr>
<td><strong>Respirable Particulate Matter (PM₁₀)</strong></td>
<td>24-Hour</td>
<td>50 μg/m³</td>
<td>150 μg/m³</td>
</tr>
<tr>
<td></td>
<td>Annual Arithmetic Mean</td>
<td>20 μg/m³</td>
<td>Same as Primary Standard</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gravimetric or Beta Attenuation</td>
<td>Inertial Separation and Gravimetric Analysis</td>
</tr>
<tr>
<td><strong>Fine Particulate Matter (PM₂.₅)</strong></td>
<td>24-Hour</td>
<td>No Separate State Standard</td>
<td>35 μg/m³</td>
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<td>Annual Arithmetic Mean</td>
<td>12 μg/m³</td>
<td>Same as Primary Standard</td>
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<td></td>
<td></td>
<td>Gravimetric or Beta Attenuation</td>
<td>Inertial Separation and Gravimetric Analysis</td>
</tr>
<tr>
<td><strong>Carbon Monoxide (CO)</strong></td>
<td>8-Hour</td>
<td>9.0 ppm (10 mg/m³)</td>
<td>9 ppm (10 mg/m³)</td>
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<td></td>
<td>1-Hour</td>
<td>20 ppm (23 mg/m³)</td>
<td>35 ppm (40 mg/m³)</td>
</tr>
<tr>
<td></td>
<td>8-Hour (Lake Tahoe)</td>
<td>6 ppm (7 mg/m³)</td>
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<td></td>
<td>Non-Dispersive Infrared Photometry (NDIR)</td>
<td>Non-Dispersive Infrared Photometry (NDIR)</td>
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<tr>
<td><strong>Nitrogen Dioxide (NO₂)</strong></td>
<td>30-day average</td>
<td>0.03 ppm (56 μg/m³)</td>
<td>0.053 ppm (100 μg/m³)</td>
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<td></td>
<td>Annual Arithmetic Mean</td>
<td>0.18 ppm (338 μg/m³)</td>
<td>Same as Primary Standard</td>
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<tr>
<td></td>
<td>1-Hour</td>
<td>Gas Phase Chemiluminescence</td>
<td>Gas Phase Chemiluminescence</td>
</tr>
<tr>
<td><strong>Lead (Pb)</strong></td>
<td>Calendar Quarter</td>
<td>1.5 μg/m³</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Atomic Absorption</td>
<td>–</td>
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<tr>
<td></td>
<td></td>
<td>1.5 μg/m³</td>
<td>Same as Primary Standard</td>
</tr>
<tr>
<td><strong>Sulfur Dioxide (SO₂)</strong></td>
<td>24-Hour</td>
<td>0.04 ppm (105 μg/m³)</td>
<td>0.14 ppm (365 μg/m³)</td>
</tr>
<tr>
<td></td>
<td>Annual Arithmetic Mean</td>
<td>–</td>
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<tr>
<td></td>
<td>3-Hour</td>
<td>Ultraviolet Fluorescence</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>1-Hour</td>
<td>–</td>
<td>0.5 ppm (1300 μg/m³)</td>
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<tr>
<td></td>
<td>24-Hour</td>
<td>0.25 ppm (655 μg/m³)</td>
<td>–</td>
</tr>
<tr>
<td><strong>Visibility-Reducing Particles</strong></td>
<td>8-Hour</td>
<td>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.</td>
<td>No</td>
</tr>
<tr>
<td><strong>Sulfates</strong></td>
<td>24-Hour</td>
<td>25 μg/m³</td>
<td>Ion Chromatography</td>
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<tr>
<td><strong>Hydrogen Sulfide</strong></td>
<td>1-Hour</td>
<td>0.03 ppm (42 μg/m³)</td>
<td>Ultraviolet Fluorescence</td>
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<td><strong>Vinyl Chloride&lt;sup&gt;h&lt;/sup&gt;</strong></td>
<td>24-Hour</td>
<td>0.01 ppm (26 μg/m³)</td>
<td>Gas Chromatography</td>
</tr>
</tbody>
</table>

Table notes on next page.

<sup>a</sup> California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM₁₀, PM₂.₅, and visibility reducing particles, are values that are not to be exceeded. All
others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

b National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For 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 μg/m$^3$ is equal to or less than one. For PM$_{2.5}$, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.

c Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

d Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

e National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

f National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

g Reference method as described by the EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the EPA.

h The ARB has identified lead and vinyl chloride as ‘toxic air contaminants’ with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Table IV.C-2: Health Effects of Air Pollutants

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Health Effects</th>
<th>Examples of Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suspended Particulate Matter</td>
<td>• Reduced lung function</td>
<td>• Stationary combustion of solid fuels</td>
</tr>
<tr>
<td>(PM$<em>{2.5}$ and PM$</em>{10}$)</td>
<td>• Aggravation of the effects of gaseous pollutants</td>
<td>• Construction activities</td>
</tr>
<tr>
<td></td>
<td>• Aggravation of respiratory and cardio respiratory diseases</td>
<td>• Industrial processes</td>
</tr>
<tr>
<td></td>
<td>• Increased cough and chest discomfort</td>
<td>• Atmospheric chemical reactions</td>
</tr>
<tr>
<td></td>
<td>• Soiling</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Reduced visibility</td>
<td></td>
</tr>
<tr>
<td>Ozone (O$_3$)</td>
<td>• Breathing difficulties</td>
<td>• Formed by chemical reactions of air pollutants in the presence of sunlight; common sources are motor vehicles, industries, and consumer products</td>
</tr>
<tr>
<td></td>
<td>• Lung damage</td>
<td></td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>• Chest pain in heart patients</td>
<td>• Any source that burns fuel such as cars, trucks, construction and farming equipment, and residential heaters and stoves</td>
</tr>
<tr>
<td></td>
<td>• Headaches, nausea</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Reduced mental alertness</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Death at very high levels</td>
<td></td>
</tr>
<tr>
<td>Lead (Pb)</td>
<td>• Organ damage</td>
<td>• Metals processing</td>
</tr>
<tr>
<td></td>
<td>• Neurological and reproductive disorders</td>
<td>• Fuel combustion</td>
</tr>
<tr>
<td></td>
<td>• High blood pressure</td>
<td>• Waste disposal</td>
</tr>
<tr>
<td>Nitrogen Dioxide (NO$_2$)</td>
<td>• Lung damage</td>
<td>• See carbon monoxide sources</td>
</tr>
<tr>
<td>Toxic Air Contaminants</td>
<td>• Cancer</td>
<td>• Cars and trucks, especially diesels</td>
</tr>
<tr>
<td></td>
<td>• Chronic eye, lung, or skin irritation</td>
<td>• Industrial sources such as chrome platers</td>
</tr>
<tr>
<td></td>
<td>• Neurological and reproductive disorders</td>
<td>• Neighborhood businesses such as dry cleaners and service stations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Building materials and products</td>
</tr>
</tbody>
</table>

Source: ARB and EPA, 2005.
Clean Air Act Amendments of 1990 changed deadlines for attaining national standards as well as the remedial actions required of areas of the nation that exceed the standards. Under the Clean Air Act, State and local agencies in areas that exceed the national standards are required to develop State Implementation Plans to demonstrate how they will achieve the national standards for ozone (O₃) by specified 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 also satisfies the Clean Air Act requirements.

**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 carbon monoxide (CO), ozone (O₃), sulfur dioxide (SO₂) and nitrogen dioxide (NO₂) by the earliest practical date. The California Clean Air Act provides districts with new authority to regulate indirect sources and mandates that air quality districts focus particular attention on reducing emissions from transportation and area-wide emission sources. Each district plan is to achieve a 5 percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each nonattainment pollutant or its precursors. Additional physical or economic development within the region would tend to impede the emissions reduction goals of the California Clean Air Act. Generally, the State standards for these pollutants are more stringent than the national standards.

The most recent BAAQMD plan for attaining California Ambient Air Quality Standards, the Bay Area 2005 Ozone Strategy, was adopted by the District’s Board of Directors on January 4, 2006. The Bay Area 2005 Ozone Strategy demonstrates how the San Francisco Bay Area will achieve compliance with the State 1-hour air quality standard for ozone as expeditiously as practicable and how the region will reduce transport of ozone and ozone precursors to neighboring air basins. The Ozone Strategy also includes stationary-source control measures to be implemented through BAAQMD regulations, mobile-source control measures to be implemented through incentive programs and other activities, and transportation control measures to be implemented through transportation programs in cooperation with the Metropolitan Transportation Commission (MTC), local governments, transit agencies and others.

**Attainment Status Designations.** The California Air Resources Board is required to designate areas of the State as attainment, nonattainment or unclassified for all State air quality standards. An “attainment” designation for an area signifies that pollutant concentrations did not violate the standard for that pollutant in that area. Conversely, 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 does not support either an attainment or nonattainment status. The California Clear Air Act divides air districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The U.S. EPA designates areas for O₃, CO, and NO₂ as either “does not meet the primary standards,” “cannot be classified,” or “better than national standards.” For SO₂, areas are designated as “does not meet the primary standards,” “does not meet the secondary standards,” “cannot be classified,” or “better than national standards.” All other areas are designated “unclassified.”
Table IV.C-3 provides a summary of the attainment status for the San Francisco Bay Area with respect to national and State ambient air quality standards.

(4) Concord General Plan Policies. Concord General Plan policies related to air quality are listed and discussed in Table IV-A-1, Land Use and Planning Policy.

b. Existing Climate and Air Quality. Regional air quality designations, local climate and air quality in the Carquinez Strait Region, and air pollution climatology are described next.

(1) Regional Air Quality. The City of Concord is located in the San Francisco Bay Area, a large shallow air basin ringed by hills that taper into a number of sheltered valleys around the perimeter. Two primary atmospheric outlets exist. One is through the 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.

Concord is within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). Air quality conditions in the San Francisco Bay Area have improved significantly since the BAAQMD was created in 1955. Ambient concentrations of air pollutants and the number of days during which the region exceeds air quality standards have fallen dramatically. Exceedances of air quality standards occur primarily during meteorological conditions conducive to high pollution levels, such as cold, windless winter nights or hot, sunny summer afternoons.

Ozone levels, measured by peak concentrations and the number of days over the State 1-hour standard, have declined substantially as a result of aggressive programs by the BAAQMD and other regional, State and federal agencies. The reduction of peak concentrations represents progress in improving public health, however the Bay Area still exceeds the State standard for 1-hour ozone. Levels of PM$_{10}$ in the Bay Area have exceeded State standards at least three times per year the last three years, and 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) Local Climate and Air Quality. Air quality is a function of both local climate and local sources of air pollution. Air quality is the balance of the natural dispersal capacity of the atmosphere and emissions of air pollutants from human uses of the environment. The City of Concord is located in the Diablo Valley region. The long and narrow Diablo Valley is bordered on the north by the Carquinez Strait and on the south by the San Ramon Valley, where it opens onto the Amador Valley.

The mountains on the west side of these valleys block much of the marine air from reaching the valleys. During the daytime, there are two predominant flow patterns; an up-valley flow from the north and a westerly flow (wind from the west) across the lower elevations of the Coast Range. On clear nights, surface inversions separate the flow of air into two layers; the surface flow and the upper layer flow. When this happens there are often drainage surface winds which flow down valley toward the Carquinez Strait.
Table IV.C-3: Bay Area Attainment Status

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Averaging Time</th>
<th>California Standards</th>
<th>National Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Concentration</td>
<td>Attainment Status</td>
<td>Concentration</td>
</tr>
<tr>
<td></td>
<td>ppm (mg/m³)</td>
<td></td>
<td>ppm (µg/m³)</td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>8-Hour</td>
<td>9 ppm (10 mg/m³)</td>
<td>Attainment</td>
</tr>
<tr>
<td></td>
<td>1-Hour</td>
<td>20 ppm (23 mg/m³)</td>
<td>Attainment</td>
</tr>
<tr>
<td>Nitrogen Dioxide (NO₂)</td>
<td>Annual Mean</td>
<td>0.030 ppm (56 µg/m³)</td>
<td>Attainment</td>
</tr>
<tr>
<td></td>
<td>1-Hour</td>
<td>0.18 ppm (338 µg/m³)</td>
<td>Attainment</td>
</tr>
<tr>
<td>Ozone (O₃)</td>
<td>8-Hour</td>
<td>0.07 ppm (137 µg/m³)</td>
<td>Not Established</td>
</tr>
<tr>
<td></td>
<td>1-Hour</td>
<td>0.09 ppm (180 µg/m³)</td>
<td>Nonattainment</td>
</tr>
<tr>
<td>Suspended Particulate Matter (PM₁₀)</td>
<td>Annual Mean</td>
<td>20 µg/m³</td>
<td>Nonattainment</td>
</tr>
<tr>
<td></td>
<td>24-Hour</td>
<td>50 µg/m³</td>
<td>Nonattainment</td>
</tr>
<tr>
<td>Suspended Particulate Matter (PM₂.₅)</td>
<td>Annual Mean</td>
<td>12 µg/m³</td>
<td>Nonattainment</td>
</tr>
<tr>
<td></td>
<td>24-Hour</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Sulfur Dioxide (SO₂)</td>
<td>Annual Mean</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
<tr>
<td></td>
<td>24-Hour</td>
<td>0.04 ppm (105 µg/m³)</td>
<td>Attainment</td>
</tr>
<tr>
<td></td>
<td>1-Hour</td>
<td>0.25 ppm (655 µg/m³)</td>
<td>Attainment</td>
</tr>
</tbody>
</table>

a California standards for O₃, CO (except Lake Tahoe), SO₂ (1-hour and 24-hour), NO₂ and PM₁₀ are values that are not to be exceeded. If the standard is for a 1-hour, 8-hour, or 24-hour average, then some measurements may be excluded. In particular, measurements are excluded that ARB determines would occur less than once per year on average.

b National standards other than for O₃ and those based on annual averages or annual arithmetic means are not to be exceeded more than once a year. For example, the O₃ standard is attained if, during the most recent 3-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than 1.

c In April 1998, the Bay Area was redesignated to Attainment for the national 8-hour CO standard.

d The National 1-hour ozone standard was revoked by U.S. EPA on June 15, 2005.

Notes: Lead (Pb) is not listed in the above table because it has been in attainment since the 1980s.

ppm = parts per million
mg/m³ = milligrams per cubic meter
µg/m³ = micrograms per cubic meter


Wind speeds in these valleys are generally low. Monitoring stations in Concord and Danville report annual average wind speeds of 5 miles per hour (mph). Average maximum wind speeds are 17 mph in Concord. However, winds can increase in the afternoon near San Ramon because it is located at the eastern edge of the Crow Canyon gap. Through this gap, polluted air from cities near the bay travels to the valley in the summer months.

Air temperatures in these valleys are cooler in the winter and warmer in the summer than are temperatures further west, as these valleys are far from the moderating effect of the bay and ocean. Mean
summer maximum temperatures are in the low- to mid-80’s. Mean winter minimum temperatures are in the high 30’s to low 40’s.

Pollution potential is relatively high in these valleys. On winter evenings, light winds combined with surface-based inversions and terrain that restricts air flow can cause pollutant levels to build up. The area can experience high pollution concentrations due to motor vehicle emissions and emissions from fireplaces and wood stoves. In the summer months, ozone and ozone precursors are often transported into the valleys from both the central Bay Area and the Central Valley.

Pollutant monitoring results for the years 2005 to 2007 (see Table IV.C-4) at the Concord ambient air quality monitoring station indicate that air quality in the project area has generally been good. As indicated in the monitoring results, the State’s 1-hour O₃ standards were exceeded once each in 2005 and 2007, and eight times in 2006. The federal 8-hour O₃ standards were exceeded twice in 2005, nine times in 2006, and once in 2007. Three violations of the State’s PM₁₀ standard were recorded in 2006, and two violations occurred in 2007; no violations of the federal PM₁₀ standard were recorded in the three year period. The federal PM₂.₅ standard was not exceeded during the 3-year period. CO, SO₂, and NO₂ standards were not exceeded in this area during the 3-year period.

(3) Air Pollution Climatology. The amount of a given air pollutant in the atmosphere is determined by the amount of pollutant released and the atmosphere’s ability to transport and/or dilute that pollutant. The major determinants of transport and dilution are wind, atmospheric stability, terrain, and for photochemical pollutants, the primary determinant is sunshine.

c. 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 “hot spots.” 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 concentration, 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 would result from vehicle trips associated with increased vehicular travel. As is true throughout much of the U.S., motor vehicle use is projected to increase substantially in the region. The BAAQMD, local jurisdictions, and other parties responsible for protecting public health and welfare are continually seeking ways of minimizing the air quality impacts of growth and development in order to avoid further exceedances of the standards.
### Table IV.C-4: Local Ambient Air Quality Monitoring Station Data

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Standard</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Carbon Monoxide (CO)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum 1 hour concentration (ppm)</td>
<td>2.2</td>
<td>1.7</td>
<td>2.2</td>
<td></td>
</tr>
<tr>
<td>Number of days exceeded:</td>
<td>State: &gt; 20 ppm</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Federal: &gt; 35 ppm</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Maximum 8 hour concentration (ppm)</td>
<td>1.5</td>
<td>1.3</td>
<td>1.4</td>
<td></td>
</tr>
<tr>
<td>Number of days exceeded:</td>
<td>State: &gt; 9 ppm</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Federal: &gt; 9 ppm</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Ozone (O₃)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum 1 hour concentration (ppm)</td>
<td>0.098</td>
<td>0.117</td>
<td>0.105</td>
<td></td>
</tr>
<tr>
<td>Number of days exceeded:</td>
<td>State: &gt; 0.09 ppm</td>
<td>1</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Maximum 8 hour concentration (ppm)</td>
<td>0.080</td>
<td>0.092</td>
<td>0.081</td>
<td></td>
</tr>
<tr>
<td>Number of days exceeded:</td>
<td>State: &gt; 0.07 ppm</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
</tr>
<tr>
<td></td>
<td>Federal: &gt; 0.08 ppm</td>
<td>2</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td><strong>Coarse Particulates (PM₁₀)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum 24 hour concentration (µg/m³)</td>
<td>40</td>
<td>84</td>
<td>52</td>
<td></td>
</tr>
<tr>
<td>Number of days exceeded:</td>
<td>State: &gt; 50 µg/m³</td>
<td>0</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Federal: &gt; 150 µg/m³</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Annual arithmetic average concentration (µg/m³)</td>
<td>16</td>
<td>18</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Exceeded for the year:</td>
<td>State: &gt; 20 µg/m³</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Federal: &gt; 50 µg/m³</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Fine Particulates (PM₂₅)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum 24 hour concentration (µg/m³)</td>
<td>49</td>
<td>62</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>Number of days exceeded:</td>
<td>Federal: &gt; 65 µg/m³</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Annual arithmetic average concentration (µg/m³)</td>
<td>9.1</td>
<td>9.5</td>
<td>8.4</td>
<td></td>
</tr>
<tr>
<td>Exceeded for the year:</td>
<td>State: &gt; 12 µg/m³</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Federal: &gt; 15 µg/m³</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Nitrogen Dioxide (NO₂)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum 1 hour concentration (ppm)</td>
<td>0.055</td>
<td>0.047</td>
<td>0.049</td>
<td></td>
</tr>
<tr>
<td>Number of days exceeded:</td>
<td>State: &gt; 0.25 ppm</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Annual arithmetic average concentration (ppm)</td>
<td>0.012</td>
<td>0.011</td>
<td>0.011</td>
<td></td>
</tr>
<tr>
<td>Exceeded for the year:</td>
<td>Federal: &gt; 0.053 ppm</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Sulfur Dioxide (SO₂)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum 1 hour concentration (ppm)</td>
<td>0.026</td>
<td>0.025</td>
<td>0.021</td>
<td></td>
</tr>
<tr>
<td>Number of days exceeded:</td>
<td>State: &gt; 0.25 ppm</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Maximum 3 hour concentration (ppm)</td>
<td>0.017</td>
<td>0.018</td>
<td>0.015</td>
<td></td>
</tr>
<tr>
<td>Maximum 24 hour concentration (ppm)</td>
<td>0.007</td>
<td>0.007</td>
<td>0.005</td>
<td></td>
</tr>
<tr>
<td>Number of days exceeded:</td>
<td>State: &gt; 0.04 ppm</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Federal: &gt; 0.14 ppm</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Annual arithmetic average concentration (ppm)</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td></td>
</tr>
<tr>
<td>Exceeded for the year:</td>
<td>Federal: &gt; 0.030 ppm</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Notes:  
ppm = parts per million  
µg/m³ = micrograms per cubic meter  
ND = No data. There was insufficient (or no) data to determine the value.

(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 U.S. EPA has developed an approximate emission factor for construction-related emissions of total suspended particulate of 1.2 tons per acre per month of activity. This factor assumes a moderate activity level, moderate silt content in soils being disturbed and a semi-arid climate. The California Air Resources Board estimates that 64 percent of construction-related total suspended particulate emissions occur in the form of PM$_{10}$. The emission factors for uncontrolled construction-related PM$_{10}$ emissions are:

- 0.77 tons per acre per month of PM$_{10}$, or
- 51 pounds per acre per day of PM$_{10}$.

However, construction emissions can vary greatly depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, weather conditions, and other factors. There are a number of feasible control measures that can be reasonably implemented to significantly reduce PM$_{10}$ emissions from construction. Rather than attempting to provide detailed quantification of anticipated construction emissions from projects, the BAAQMD CEQA guidelines recommend the following criteria for determining the significance of impacts from construction emissions of PM$_{10}$:

“The determination of significance with respect to construction emissions should be based on a consideration of the control measures to be implemented. From the District’s [BAAQMD] perspective, quantification of emissions is not necessary, although a lead agency may elect to do so. If all of the control measures indicated as appropriate, depending on the size of the project are implemented, then air pollution from emissions from construction activities would be considered a less-than-significant impact.”

(4) **Odors.** Odors are also an important element of local air quality conditions. Specific activities allowed within each of the major General Plan land use categories can raise concerns on the part of nearby neighbors. Major sources of odors include restaurants, manufacturing plants, and agricultural operations. Other odor producers include the industrial facilities within the Diablo and San Ramon Valley region. While sources that generate objectionable odors must comply with air quality regulations, the public’s sensitivity to locally produced odors often exceeds regulatory thresholds.

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

2. **Impacts and Mitigation Measures**

This section evaluates potential impacts to air quality resulting from implementation of the proposed project. The evaluation of environmental effects presented in this section focuses on potential air

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quality impacts associated with consistency with air quality management plans, construction emissions, odors and development-related traffic emissions. Mitigation measures are proposed as necessary.

a. **Criteria of Significance.** A significant impact would occur if the proposed project would:
   - Conflict with or obstruct implementation of the applicable air quality plan;
   - Violate any air quality standard;
   - Contribute substantially to an existing or projected air quality violation;
   - Result in a cumulatively considerable net increase of any criteria pollutant for which the region is in nonattainment status;
   - Expose sensitive receptors to substantial pollutant concentrations; or
   - Create objectionable odors affecting a substantial number of people.

The BAAQMD provides various quantitative thresholds that can be used to better define the above criteria. For ROG, NOx and PM10, a net increase of 80 pounds per day is considered significant, while for CO, an increase of 550 pounds per day would be considered significant if it leads to or contributes to CO concentrations exceeding the State Ambient Air Quality Standard of 9 ppm averaged over 8 hours and 20 ppm for 1 hour (i.e., if it creates a “hot spot”). Generally, if a project results in an increase in ROG, NOx, or PM10 of more than 80 pounds per day, then it would also be considered to contribute considerably to a significant cumulative effect. For projects that would not lead to a significant increase of ROG, NOx, or PM10 emissions, the cumulative effect is evaluated based on a determination of the consistency of the project with the regional Clean Air Plan. Impacts from PM2.5 emissions have not been analyzed quantitatively as there are no recommended significance thresholds from the BAAQMD.

It should be noted that the emission thresholds were established based on the attainment status of the air basin in regard to air quality standards 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 EPA, these emission thresholds are regarded as conservative and would tend to overstate an individual projects contribution to health risks.

b. **Less-than-Significant Impacts.** A discussion of several less-than-significant impacts of the proposed project follows. Significant impacts are discussed next, beginning on the following page.

(1) **Clean Air Plan (CAP) Consistency.** As described in subsection 1.a(2), the Bay Area 2005 Ozone Strategy provides control measures to demonstrate consistency with the CAP. The proposed project is a commercial shopping center development that comprises 334,112 square feet of retail/restaurant space and associated parking. The proposed project is consistent with the City’s General Plan policies and land use designation applicable to the project site. The City’s General Plan EIR found that the population growth and transportation control measures under the General Plan are consistent with the 2005 Ozone Strategy. Increases in vehicle miles traveled under the General Plan

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3 Reactive Organic Gases (ROG) are classes of organic compounds that transform with heat and sunlight to form smog or ozone. SO2 is a reactive organic gas.
would be addressed and reduced by General Plan policies. Since the proposed project is consistent with the growth anticipated under the General plan, it would not conflict with the Bay Area 2005 Ozone Strategy.

(2) **Odor Emissions.** The project would not be located in an area with existing objectionable odors. The only major source of odor related to the proposed project would be the proposed restaurant component of the project. Any odors from a potential restaurant use on the outparcels would not have a significant impact on sensitive receptors because the nearest sensitive receptors are located over 1,000 feet from the outparcels. 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.

(3) **Toxic Emissions.** Potential toxic emissions from a project like this would be those associated with diesel exhaust from project-related truck deliveries to the project site. In order to predict the impacts on human health resulting from diesel-powered trucks that deliver goods to Lowe’s and other retail stores on site, a Health Risk Assessment was performed for the proposed project. A detailed discussion of the model’s methodologies and assumptions, including the truck fleet mixes and number of trips, is included in Appendix C of this EIR. The first step of the analysis was to characterize the diesel truck delivery emissions. The average number of deliveries was first estimated, and then categorized as either two-axle delivery trucks (light- and medium-sized trucks) or semi-trailer and fuel tanker trucks (heavy-duty trucks). The analysis assumes that each truck idles for 10 minutes per trip to account for stopping at the loading dock, warming up the engine, and miscellaneous tasks.

The nearest residents live at a variety of distances from the proposed delivery area, the closest being a minimum of 1,000 feet from the delivery area. In this screening analysis, on-site meteorological data in which the wind direction and speed varies throughout the day and from day-to-day is not used; rather, the air dispersion model (SCREEN3) assumes a worst-case condition in which the wind always blows directly from delivery area to the residences. The results of this conservative modeling are shown in Table IV.C-5 for carcinogenic and chronic inhalation health risks.

<table>
<thead>
<tr>
<th>Distance from Delivery Area to Closest Residence (Feet)</th>
<th>Carcinogenic Risk (Number in Millions)</th>
<th>Chronic Inhalation Health Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,000</td>
<td>0.069</td>
<td>0.00043</td>
</tr>
<tr>
<td>Threshold</td>
<td>10</td>
<td>1.0</td>
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</table>

Note that the thresholds are 10 in a million for the carcinogenic health risk and 1.0 for the chronic health index. These thresholds are established by the BAAQMD and are based on State and federal regulations for toxic air contaminants. Table IV.C-5 shows that inhalation health risks from the project would be orders of magnitude less than the BAAQMD thresholds and therefore would not constitute in a significant health risk.

(4) **Operational Emissions – CO Analysis.** Vehicular traffic associated with the proposed project would yield carbon monoxide (CO) into the air along roadway segments and near intersections. Because CO does not readily disperse, areas of vehicle congestion can create pockets of high CO concentrations, called “hot spots.” Typically, high CO concentrations are associated with roadways or intersections operating at deficient levels of service (LOS) or with extremely high traffic volumes. The traffic analysis prepared by Abrams Associates (July 2008) provided traffic data associated with the proposed project, which was used in the CALINE4 air quality model.
Table IV.C-7 lists the 1-hour and 8-hour CO concentrations under the existing (2008) and existing plus project conditions at the 12 intersections in the project area that were analyzed in the traffic study by Abrams Associates. Table IV.C-8 lists the CO concentrations under the future (2030) conditions at these intersections.

Based on the methodology suggested by the U.S. EPA and California Department of Transportation, CO concentrations monitored at the nearest air monitoring station from the past 2 years (in this case, 2.0 ppm for the 1-hour period and 1.4 ppm for the 8-hour period) were used as the background CO concentrations.

Tables IV.C-6 demonstrates that all of the existing 1-hour and 8-hour CO concentrations are below the federal and State CO standards. The existing plus project 1-hour CO levels range from 2.0 ppm to 4.3 ppm, much lower than the State standard of 20 ppm and the federal standard of 35 ppm. The 8-hour CO levels range from 1.4 ppm to 3.0 ppm, also much lower than the State and federal standards of 9 ppm. Table IV.C-7 demonstrates that all of the 2030 1-hour and 8-hour CO concentrations are below the federal and State CO standards. The 1-hour CO level ranges from 2.0 ppm to 2.7 ppm, much lower than the State standard of 20 ppm and the federal standard of 35 ppm. The 8-hour CO level ranges from 1.4 ppm to 1.9 ppm, also much lower than the State and federal standards of 9 ppm.

Therefore, the proposed project would not lead to significant CO impacts, nor would it, in combination with other cumulative development, lead to CO concentrations that exceed federal or State standards.

(5) Asbestos. Asbestos and asbestos containing materials (ACM’s) are discussed in Section IV.J, Public Health and Safety/Hazardous Materials.

c. Significant Impacts. The proposed project would result in the following significant impacts related to air quality as described below.

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

The proposed project would require demolition of existing buildings and excavation/removal of substantial amounts of soil from the site. The physical demolition of existing structures, excavation of soil and other existing infrastructure improvements are construction activities with a high potential for creating air pollutants. In addition to the dust created during demolition and excavation, substantial dust emissions could be created as debris and soil are loaded into trucks for disposal.

After removal of existing structures, construction dust would also continue to affect local air quality during construction of the project. Construction activities would generate exhaust emissions from vehicles/equipment and fugitive particulate matter emissions that would also affect local air quality.

Construction activities are also a source of organic gas emissions. Solvents in adhesives, non-water-base paints, thinners, some insulating materials and caulking materials would evaporate into the atmosphere and would participate in the photochemical reaction that creates urban ozone. Asphalt used in paving is also a source of organic gases for a short time after its application.
Table IV.C-6: Existing (2008) With and Without Project CO Concentrations

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Receptor Distance to Road Centerline (Meters)</th>
<th>Project Related Increase 1-hr/8-hr CO Concentration&lt;sup&gt;a&lt;/sup&gt; (ppm)</th>
<th>Without/With Project 1-Hour CO Concentration&lt;sup&gt;b&lt;/sup&gt; (ppm)</th>
<th>Without/With Project 8-Hour CO Concentration&lt;sup&gt;b&lt;/sup&gt; (ppm)</th>
<th>Exceeds State Standards&lt;sup&gt;c&lt;/sup&gt;</th>
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<td>1.8 / 1.8</td>
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<td>No</td>
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<td>1.8 / 1.8</td>
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<td>No</td>
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<tr>
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<td>1.8 / 1.8</td>
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### Table IV.C-7: 2025 CO Concentrations Without and With Project

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<tr>
<th>Intersection</th>
<th>Receptor Distancea to Road Centerline (Meters)</th>
<th>Project Related Increase 1-hr/8-hr Increaseb (ppm)</th>
<th>Without/With Project 1-Hour CO Concentrationb (ppm)</th>
<th>Without/With Project 8-Hour CO Concentrationb (ppm)</th>
<th>Exceeds State Standards²</th>
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<td></td>
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<td>2.2 / 2.2</td>
<td>1.5 / 1.5</td>
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<td>1.5 / 1.5</td>
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<td>No</td>
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</tr>
<tr>
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<td>1.5 / 1.5</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Port Chicago Hwy &amp; Arnold Industrial</td>
<td>17 0.1 / 0.1</td>
<td>2.4 / 2.5</td>
<td>1.7 / 1.8</td>
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<td>No</td>
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<tr>
<td></td>
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<td>1.7 / 1.8</td>
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<td>1.8 / 1.8</td>
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<td>1.7 / 1.7</td>
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<td>1.5 / 1.5</td>
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<td>Hwy 4 EB Ramps &amp; Arnold Industrial</td>
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<td>1.7 / 1.8</td>
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<td>2.3 / 2.4</td>
<td>1.6 / 1.7</td>
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</tr>
<tr>
<td>Peralta Road &amp; Arnold Industrial</td>
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<td>1.6 / 1.7</td>
<td>No</td>
<td>No</td>
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<tr>
<td></td>
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<td>2.2 / 2.3</td>
<td>1.5 / 1.6</td>
<td>No</td>
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<td>1.5 / 1.6</td>
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<td>1.5 / 1.6</td>
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<tr>
<td>Peralta Road &amp; Olivera Road</td>
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<td>2.2 / 2.3</td>
<td>1.5 / 1.6</td>
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</tr>
<tr>
<td>Grant Street &amp; Olivera Road</td>
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<td>1.5 / 1.6</td>
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<td>No</td>
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<tr>
<td></td>
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<td>2.2 / 2.3</td>
<td>1.5 / 1.6</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
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<td>1.5 / 1.6</td>
<td>No</td>
<td>No</td>
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<tr>
<td></td>
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<td>2.2 / 2.3</td>
<td>1.5 / 1.6</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Hwy 242 SB Ramps &amp; Olivera Road</td>
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<td>2.3 / 2.3</td>
<td>1.6 / 1.6</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
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<td>2.3 / 2.3</td>
<td>1.6 / 1.6</td>
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<tr>
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<td>2.3 / 2.3</td>
<td>1.6 / 1.6</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
C. AIR QUALITY

Project related construction emissions were calculated using the URBEMIS 2007 model. Results of the model are shown in Table IV.C-8 and Table IV.C-9. The emissions were calculated assuming a worst case condition of the entire project being constructed within the same one year time period. Actual construction emissions per day may be less depending on the final construction schedule and phasing for the proposed project. The BAAQMD does not have significance thresholds for construction emissions because construction emissions are considered temporary and because construction emissions are already accounted for in the regional Clean Air Plan.

### Table IV.C-8: Project Construction Emissions in Pounds Per Day

<table>
<thead>
<tr>
<th></th>
<th>Reactive Organic Gases</th>
<th>Nitrogen Oxides</th>
<th>CO</th>
<th>Total PM$_{10}$</th>
<th>PM$_{10}$ Exhaust</th>
<th>Total PM$_{2.5}$</th>
<th>PM$_{2.5}$ Exhaust</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Period Emissions</td>
<td>552.86</td>
<td>26.53</td>
<td>48.41</td>
<td>77.74</td>
<td>1.71</td>
<td>17.19</td>
<td>1.57</td>
</tr>
</tbody>
</table>


The effects of construction activities would be increased dustfall and locally elevated levels of PM$_{10}$ downwind of construction activity. Construction dust would be generated at levels that would create an annoyance to nearby properties.

In addition to particulate emissions from earthmoving, air pollutants also would be emitted in the exhaust of construction equipment. To minimize this impact, prolonged idling of construction vehicles should be restricted and all construction equipment should be properly tuned and fitted with manufacturer’s standard level exhaust controls.

According to the BAAQMD, if the construction emission control measures outlined in their CEQA Guidelines are implemented, then air pollutant emissions from construction activities would be considered a less than significant impact. The following mitigation measure includes all of the BAAQMD’s control measures applicable for all construction sites greater than four acres in area.

**Mitigation Measure AIR-1:** Consistent with guidance from the BAAQMD, the following actions shall be required of construction contracts and specifications for the project.

*Demolition.* The following controls shall be implemented during demolition:

- Water during demolition of structures and break-up of pavement to control dust generation;
- Cover all trucks hauling demolition debris from the site; and
- Use dust-proof chutes to load debris into trucks whenever feasible.
Construction. The following controls shall be implemented at all construction sites:

- Water all active construction areas at least twice daily and more often during windy periods; active areas adjacent to existing land uses shall be kept damp at all times, or shall be treated with non-toxic stabilizers to control dust;
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard;
- Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites;
- Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites; water sweepers shall vacuum up excess water to avoid runoff-related impacts to water quality;
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets;
- Apply non-toxic soil stabilizers to inactive construction areas;
- Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.);
- Limit traffic speeds on unpaved roads to 15 mph;
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways;
- Replant vegetation in disturbed areas as quickly as possible;
- Install baserock at entryways for all exiting trucks, and wash off the tires or tracks of all trucks and equipment in designated areas before leaving the site;
- Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 mph;
- On-site idling of construction equipment shall be minimized as much as feasible (no more than 5 minutes maximum); and
- All construction equipment shall be properly tuned and fitted with manufacturer’s standard level exhaust controls.

Implementation of this mitigation measure would reduce construction period air quality impacts to a less-than-significant level. (LTS)

Impact AIR-2: Long-term project-related regional emissions would exceed the BAAQMD thresholds of significance for ozone precursors. (S)

Long-term air emission impacts would be those associated with changes in permanent usage of the project site. Mobile source emissions would result from vehicle trips associated with the proposed project. The Urban Emission Model (URBEMIS 2007) computer program, which is the most current air quality model available in California for estimating emissions associated with land use development projects, was used to calculate long-term mobile source emissions associated with the proposed project. Increases in long-term stationary emissions from natural gas and electricity use within the project site are expected to be negligible when compared with mobile source emissions. However, both stationary and mobile source emissions were included in the calculation.
The daily emission increase associated with project stationary source and operational trip generation is identified in Table IV.C-8 for reactive organic gases (ROG) and nitrogen oxides (NOx) (two precursors of ozone), coarse particle matter (PM10), and fine particulate matter (PM2.5). The BAAQMD has established thresholds of significance for ozone precursors and fugitive dust of 80 pounds per day; a significance threshold for PM2.5 has not been established. Proposed project emissions shown in Table IV.C-9 would exceed these thresholds of significance for ROG, NOx and PM10; therefore, the proposed project would have a significant effect on regional air quality. Even though BAAQMD has not established any threshold of significance for PM2.5 the impact on PM2.5 is considered significant for the purposes of this project. This conclusion is not required and is taken to reflect the most conservative analysis. Therefore, the following mitigation measure shall be incorporated.

**Mitigation Measure AIR-2:** The BAAQMD CEQA Guidelines identifies potential mitigation measures for various types of projects. The following are considered to be feasible and effective in further reducing vehicle trip generation and resulting emissions from the project:

- Provide east- and west-bound bus stops.
- Provide a bicycle route along the project frontage at Arnold Industrial Way.
- Provide sidewalks and/or paths, connected to adjacent land uses, transit stops, and/or a community-wide network.
- Provide secure and conveniently located bicycle storage.
- Implement feasible transportation demand management (TDM) measures including a ride-matching program, coordination with regional ridesharing organizations and provision of transit information.

The implementation of an aggressive trip reduction program with the appropriate incentives for non-auto travel can reduce project impacts by approximately 10 to 15 percent. A reduction of this magnitude would reduce emissions, but emissions of the two ozone precursors (ROG and NOx), and PM10 would still exceed the significance thresholds. As explained above, for the purposes of the analysis for this project, a conservative approach is taken and the impact of PM2.5 is assumed significant after mitigation even though this conclusion is not required. There is no mitigation available with currently feasible technology to reduce the project’s regional air quality impact by an additional 25 percent to a less-than-significant level. Therefore, the project’s regional air quality impact would remain significant and unavoidable. (SU)

Despite great progress in air quality improvement, approximately 146 million people nationwide lived in counties with pollution levels above the national standards in 2002. Out of the 230 nonattainment areas identified during the 1990 Clean Air Act Amendment designation process, 124 areas remain under nonattainment status or designation today. In these nonattainment areas, however, the severity...
of air pollution episodes has decreased. Air quality in the San Francisco Bay Area Air Basin in the past 20 years has improved steadily and dramatically, even with the tremendous increase in population and vehicles and other sources.

As shown in Table IV.C-2, long-term exposure to elevated levels of criteria pollutants could result in potential health effects. However, as stated in the thresholds of significance, emission thresholds established by the air district are used to manage total regional emissions within an air basin, based on the air basin attainment status for criteria pollutants. These emission thresholds were established for individual projects that would contribute to regional emissions and pollutant concentrations that may affect or delay the projected attainment target year for certain criteria pollutants.

Because of the conservative nature of the thresholds and the basin-wide context of individual project emissions, there is no direct correlation of a single project to localized health effects. One individual project having emissions exceeding a threshold does not necessarily result in adverse health effects for residents in the project vicinity. This condition is especially true when the criteria pollutants exceeding thresholds are those with regional effects, such as ozone precursors like NOx and ROC.

Based on the above discussion, the potential for an individual project to significantly deteriorate regional air quality or contribute to significant health risk is small, even if the emission thresholds are exceeded by the project. Because of the overall improvement trend in air quality in the air basin, it is unlikely the regional air quality or health risk would worsen from the current condition due to emissions from an individual project.
D. NOISE

The following discussion describes the general characteristics of sound and the categories of audible noise. The regulatory framework related to noise issues at the City, State and federal levels is then described. Lastly, potential noise impacts associated with the project are evaluated.

1. Setting

This section describes the characteristics of sound, the regulations related to noise, and the existing noise sources in and adjacent to the project area.

a. Characteristics of Sound. To the human ear, sound has two significant characteristics: pitch and loudness. A specific pitch can be an annoyance, while loudness can affect our ability to hear. 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.

Noise is usually 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.

Several noise measurement scales exist which are used to describe noise in a particular location. A decibel (dB) is a unit of measurement which indicates the relative intensity of a sound. The 0 point on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Changes of 3 dB or less are only perceptible in laboratory environments. Audible increases in noise levels generally refer to a change of 3 dB or more, as this level has been found to be barely perceptible to the human ear in outdoor environments. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense, and 30 dB is 1,000 times more intense. Each 10-dB increase in sound level is perceived as approximately a doubling of loudness. Sound intensity is normally measured through the A-weighted sound level (dBA). This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Table IV.D-1 shows representative outdoor and indoor noise levels in units of dBA.

There are many ways to rate noise for various time periods. The community noise equivalency level (CNEL) weights noise events in the late evening through early morning, as well as noise events occurring between 7:00 p.m. and 10:00 p.m. (increasing them by 5 dBA). This scale rates ambient noise affecting humans that also accounts for the annoying effects of sound. \( L_{\text{max}} \) is the highest exponential time averaged sound level that occurs during a stated time period.

As noise spreads from a source, it loses energy so that the farther away the noise receiver is from the noise source, the lower the perceived noise level would be. Geometric spreading causes the sound level to attenuate or be reduced, resulting in a 6-dB reduction in the noise level for each doubling of distance from a single point source of noise to the noise sensitive receptor of concern.
Table IV.D-1: Typical A-Weighted Sound Levels

<table>
<thead>
<tr>
<th>Noise Source</th>
<th>A-Weighted Sound Level in Decibels</th>
<th>Noise Environments</th>
<th>Subjective Evaluations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Near Jet Engine</td>
<td>140</td>
<td>Deafening</td>
<td>128 times as loud</td>
</tr>
<tr>
<td>Civil Defense Siren</td>
<td>130</td>
<td>Threshold of Pain</td>
<td>64 times as loud</td>
</tr>
<tr>
<td>Hard Rock Band</td>
<td>120</td>
<td>Threshold of Feeling</td>
<td>32 times as loud</td>
</tr>
<tr>
<td>Accelerating Motorcycle at a few feet away</td>
<td>110</td>
<td>Very Loud</td>
<td>16 time as loud</td>
</tr>
<tr>
<td>Pile Driver; Noisy Urban Street/Heavy City Traffic</td>
<td>100</td>
<td>Very Loud</td>
<td>8 times as loud</td>
</tr>
<tr>
<td>Ambulance Siren; Food Blender</td>
<td>95</td>
<td>Very Loud</td>
<td></td>
</tr>
<tr>
<td>Garbage Disposal</td>
<td>90</td>
<td>Very Loud</td>
<td>4 times as loud</td>
</tr>
<tr>
<td>Freight Cars; Living Room Music</td>
<td>85</td>
<td>Loud</td>
<td></td>
</tr>
<tr>
<td>Pneumatic Drill; Vacuum Cleaner</td>
<td>80</td>
<td>Loud</td>
<td>2 times as loud</td>
</tr>
<tr>
<td>Busy Restaurant</td>
<td>75</td>
<td>Moderately Loud</td>
<td></td>
</tr>
<tr>
<td>Near Freeway Auto Traffic</td>
<td>70</td>
<td>Moderately Loud</td>
<td>Reference Level</td>
</tr>
<tr>
<td>Average Office</td>
<td>60</td>
<td>Moderate</td>
<td>1/2 as loud</td>
</tr>
<tr>
<td>Suburban Street</td>
<td>55</td>
<td>Moderate</td>
<td></td>
</tr>
<tr>
<td>Light Traffic; Soft Radio Music in Apartment</td>
<td>50</td>
<td>Quiet</td>
<td>1/4 as loud</td>
</tr>
<tr>
<td>Large Transformer</td>
<td>45</td>
<td>Quiet</td>
<td></td>
</tr>
<tr>
<td>Average Residence Without Stereo Playing</td>
<td>40</td>
<td>Faint</td>
<td>1/8 as loud</td>
</tr>
<tr>
<td>Soft Whisper</td>
<td>30</td>
<td>Faint</td>
<td></td>
</tr>
<tr>
<td>Rustling Leaves</td>
<td>20</td>
<td>Very Faint</td>
<td></td>
</tr>
<tr>
<td>Human Breathing</td>
<td>10</td>
<td>Very Faint</td>
<td>Threshold of Hearing</td>
</tr>
</tbody>
</table>


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 cause perceptible vibration 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 67 VdB and sometimes lower. Annoyance due to vibration in residential settings starts at approximately 70 VdB. Groundborne vibration is almost never annoying to people who are outdoors. Although the motion of the ground may be perceived, without the effects associated with the shaking of the building, the motion does not provoke the same adverse human reaction.

In extreme cases, excessive groundborne vibration has the potential to cause structural damage to buildings. The threshold for minor cosmetic damage of buildings considered of particular historical significance or that are particularly fragile structures is approximately 96 VdB; the damage threshold for other structures is 100 VdB. Common sources of groundborne vibration include trains and construction activities such as blasting, pile driving and operating heavy earthmoving equipment.

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1 Harris, C.M. 1998. *Handbook of Acoustical Measurements and Noise Control.*
c. **Noise Regulatory Framework.** Specific Concord General Plan policies related to noise are listed and discussed in Table IV.A-1, Land Use and Planning Policy.

Concord’s General Plan describes sensitive receptors as facilities that house or attract children, the elderly, and people with illnesses. Hospitals, schools, convalescent facilities, and residential areas are examples of sensitive receptors.

The Concord General Plan also outlines the acceptable community noise exposure sound levels according to land use. These standards are shown in Table IV.D-2. Environments with ambient noise levels up to 70 dBA L_{dn} are considered normally acceptable for new office building, business commercial, and professional land use development. Ambient noise environments of up to 75 dBA L_{dn} are considered conditionally acceptable for these land uses, and should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features have been included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice. Ambient noise environments with noise levels greater than 75 dBA L_{dn} are considered clearly unacceptable for these land uses and new development should generally not be undertaken.

Additionally, Concord Municipal Code Section 62-32(1) restricts the hours that construction work can take place, unless otherwise allowed by prior authorization from the City. Construction in Concord is permitted citywide (i.e., applies to all districts) Monday to Friday from 7:30 a.m. to 6:00 p.m., and on weekends from 8:00 a.m. to 5:00 p.m. Sunday construction in residential districts is restricted to work performed by the homeowner, homeowner’s contractor, or tenant.

d. **Overview of the Existing Noise Environment.** The project site is located in a predominately industrial area, and is bounded by a cemetery to the east, fronting Arnold Industrial Way; by light industrial, research and development, and office uses to the north; and by heavier industrial uses to the west, characterized by extensive outdoor storage areas, machine shops and manufacturing. State Route (SR) 4 borders the project site to the south. Single family residential development is located approximately 1,000 feet southeast of the project site, beyond SR 4.

Primary noise sources that affect the baseline noise level of the area include existing industrial operations to the north and west of the project site as well as vehicular traffic from SR 4 and surrounding roadways.

Motor vehicles, with their distinctive noise characteristics, are present in growing numbers in the City of 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 include SR 4, Arnold Industrial Way and other arterial and collector roadways in the project area.

Existing traffic noise levels were calculated using the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model. Traffic data used in the model were obtained from the traffic impact analysis prepared for the proposed project by Abrams Associates (Appendix D). Table IV.D-3 lists the calculated traffic noise levels in the project study area under the existing (2008) weekday baseline conditions. The traffic noise model printouts are included in Appendix D. Results
### Table IV.D-2: Community Noise Exposure, Ldn or CNEL, dBA

<table>
<thead>
<tr>
<th>Land Use</th>
<th>55</th>
<th>60</th>
<th>65</th>
<th>70</th>
<th>75</th>
<th>80</th>
<th>85</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential – Low Density Single Family, Duplex, Mobile Homes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential – Multifamily</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Mixed-Use &amp; High Density Residential</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Transient Lodging – Motels, Hotels</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schools, Libraries, Churches, Hospitals, Nursing Homes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auditoriums, Concerts, Halls, Amphitheaters</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sports Area, Outdoor Spectator Sports</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Playgrounds, Neighborhood Parks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Golf Courses, Riding Stables, Water Recreation, Cemeteries</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office Buildings, Businesses Commercial and Professional</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial, Manufacturing Utilities, Agriculture</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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.

Table IV.D-3: Existing (2008) Weekday Baseline No Project Traffic Noise Levels

<table>
<thead>
<tr>
<th>Roadway Segment</th>
<th>ADT</th>
<th>Center-line to 70 CNEL (feet)</th>
<th>Center-line to 65 CNEL (feet)</th>
<th>Center-line to 60 CNEL (feet)</th>
<th>CNEL (dBA) 50 feet from Centerline of Outermost Lane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arnold Industrial Way - West of Solano Way</td>
<td>4,200</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>62</td>
<td>59.4</td>
</tr>
<tr>
<td>Arnold Industrial Way - Solano Way to Highway 4 Ramps</td>
<td>6,800</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>84</td>
<td>61.4</td>
</tr>
<tr>
<td>Arnold Industrial Way - Highway 4 Ramps to Laura Alice Way</td>
<td>9,400</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>103</td>
<td>62.9</td>
</tr>
<tr>
<td>Arnold Industrial Way - Laura Alice Way to Project Entrance</td>
<td>4,000</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>59</td>
<td>59.6</td>
</tr>
<tr>
<td>Arnold Industrial Way - Project Entrance to Port Chicago Highway</td>
<td>4,000</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>59</td>
<td>59.6</td>
</tr>
<tr>
<td>Arnold Industrial Place - Highway 4 Ramps to Peralta Road</td>
<td>5,600</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>73</td>
<td>61.1</td>
</tr>
<tr>
<td>Arnold Industrial Place - East of Peralta Road</td>
<td>1,100</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>54.0</td>
</tr>
<tr>
<td>Olivera Road - Solano Way to Peralta Road</td>
<td>4,700</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>64</td>
<td>60.9</td>
</tr>
<tr>
<td>Olivera Road - Peralta Road to Terraza del Sol</td>
<td>4,000</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>58</td>
<td>60.2</td>
</tr>
<tr>
<td>Olivera Road - Terraza del Sol to Grant Street</td>
<td>9,800</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>105</td>
<td>64.1</td>
</tr>
<tr>
<td>Olivera Road - Grant Street to Hwy 242 SB Ramps</td>
<td>11,700</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>57</td>
<td>63.8</td>
</tr>
<tr>
<td>Solano Way - North of Arnold Industrial Way</td>
<td>1,300</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>55.3</td>
</tr>
<tr>
<td>Solano Way - Arnold Industrial Way to Olivera Road</td>
<td>5,600</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>74</td>
<td>60.6</td>
</tr>
<tr>
<td>Solano Way - South of Olivera Road</td>
<td>3,400</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>52</td>
<td>59.5</td>
</tr>
<tr>
<td>Laura Alice Way - North of Arnold Industrial Way</td>
<td>9,900</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>108</td>
<td>62.6</td>
</tr>
<tr>
<td>Peralta Road - Arnold Industrial Place to Olivera Road</td>
<td>6,300</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>79</td>
<td>61.6</td>
</tr>
<tr>
<td>Port Chicago Highway - North of Arnold Industrial Way</td>
<td>15,900</td>
<td>&lt; 50</td>
<td>71</td>
<td>146</td>
<td>64.7</td>
</tr>
<tr>
<td>Port Chicago Highway - Arnold Industrial Way to Highway 4 WB Ramps</td>
<td>20,100</td>
<td>&lt; 50</td>
<td>82</td>
<td>170</td>
<td>65.7</td>
</tr>
<tr>
<td>Port Chicago Highway - Highway 4 WB Ramps to Panoramic Drive</td>
<td>15,800</td>
<td>&lt; 50</td>
<td>71</td>
<td>145</td>
<td>64.7</td>
</tr>
<tr>
<td>Grant Street - North of Olivera Road</td>
<td>3,000</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>58.4</td>
</tr>
<tr>
<td>Grant Street - South of Olivera Road</td>
<td>3,300</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>52</td>
<td>58.8</td>
</tr>
</tbody>
</table>

\(^a\) Average Daily Traffic.

The modeling indicates current traffic noise levels in the project area range from 55.3 dBA CNEL to 65.3 dBA CNEL.

2. Impacts and Mitigation Measures

a. Criteria of Significance. 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’s General Plan Public Health and Safety Element, or applicable standards of other agencies for construction or operation of the project;
Increase 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 (shown in Table IV.D-2);

- Cause 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;
- Expose persons to or generate excessive groundborne vibration or noise levels; 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 Noise Impacts. The following noise sources would produce less-than-significant effects on sensitive receptor locations within the project area.

c. (1) Aircraft Noise. The project site is located approximately one mile from the Buchanan Field Airport. Due to the orientation of the airport and the distance between the project site and the airport, the project site is located outside of the 55 dBA Community Noise Equivalent Level (CNEL) noise contour. Therefore, aircraft noise levels on the project site will be less than significant.

(2) Traffic-Related Noise Impacts. The FHWA Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used to evaluate traffic-related noise impacts associated with increased traffic that would result from the buildout of the proposed project. The resulting noise levels were weighted and summed over a 24-hour period in order to determine the CNEL values. CNEL contours are derived through a series of computerized iterations to isolate the 60, 65, and 70 dBA CNEL contour for traffic noise levels in the project area. Table IV.D-4 lists the existing plus project traffic noise levels. Table IV.D-5 lists the cumulative without project conditions. Table IV.D-6 lists the traffic noise levels for the cumulative with project conditions.

Table IV.D-4 shows that there would be minor changes 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 on the two segments of Arnold Industrial Way west and east of the main Project Entrance, with up to a 3.8 dBA increase under cumulative plus project conditions over the cumulative no project traffic noise levels. However, there are no noise-sensitive land uses along these roadway segments. Noise increases in residential areas south of the project site range from 0.0 to 0.9 dBA under cumulative plus project conditions. This range of noise level is less than the 3 dBA increase considered to be perceptible by the human ear in an outdoor environment and less than the City’s established significance criteria of a 4 dBA permanent increase in ambient noise levels. 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.

Exposure on the project site to traffic noise would range up to 63.9 dBA CNEL at the rear of the tenant pad buildings closest to Arnold Industrial Way. This 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.

Including 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
### Table IV.D-4: Existing (2008) With Project Traffic Noise Levels

<table>
<thead>
<tr>
<th>Roadway Segment</th>
<th>ADT</th>
<th>Center-line to 70 CNEL (feet)</th>
<th>Center-line to 65 CNEL (feet)</th>
<th>Center-line to 60 CNEL (feet)</th>
<th>CNEL (dBA) 50 feet from Centerline of Outermost Lane</th>
<th>Increase from Baseline Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arnold Industrial Way - West of Solano Way</td>
<td>4,300</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>63</td>
<td>59.5</td>
<td>0.1</td>
</tr>
<tr>
<td>Arnold Industrial Way - Solano Way to Highway 4 Ramps</td>
<td>7,200</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>87</td>
<td>61.7</td>
<td>0.3</td>
</tr>
<tr>
<td>Arnold Industrial Way - Highway 4 Ramps to Laura Alice Way</td>
<td>12,600</td>
<td>&lt; 50</td>
<td>60</td>
<td>125</td>
<td>64.1</td>
<td>1.2</td>
</tr>
<tr>
<td>Arnold Industrial Way - Laura Alice Way to Project Entrance</td>
<td>6,500</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>80</td>
<td>61.7</td>
<td>2.1</td>
</tr>
<tr>
<td>Arnold Industrial Way - Project Entrance to Port Chicago Highway</td>
<td>4,200</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>61</td>
<td>59.8</td>
<td>0.2</td>
</tr>
<tr>
<td>Arnold Industrial Place - Highway 4 Ramps to Peralta Road</td>
<td>9,100</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>100</td>
<td>63.2</td>
<td>2.1</td>
</tr>
<tr>
<td>Arnold Industrial Place - East of Peralta Road</td>
<td>1,100</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>54.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Olivera Road - Solano Way to Peralta Road</td>
<td>8,600</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>96</td>
<td>63.5</td>
<td>2.6</td>
</tr>
<tr>
<td>Olivera Road - Peralta Road to Terraza del Sol</td>
<td>6,700</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>81</td>
<td>62.5</td>
<td>2.3</td>
</tr>
<tr>
<td>Olivera Road - Terraza del Sol to Grant Street</td>
<td>11,300</td>
<td>&lt; 50</td>
<td>54</td>
<td>115</td>
<td>64.7</td>
<td>0.6</td>
</tr>
<tr>
<td>Olivera Road - Grant Street to Hwy 242 SB Ramps</td>
<td>13,200</td>
<td>&lt; 50</td>
<td>62</td>
<td>129</td>
<td>64.3</td>
<td>0.5</td>
</tr>
<tr>
<td>Solano Way - North of Arnold Industrial Way</td>
<td>1,300</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>55.3</td>
<td>0.0</td>
</tr>
<tr>
<td>Solano Way - Arnold Industrial Way to Olivera Road</td>
<td>5,800</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>76</td>
<td>60.8</td>
<td>0.2</td>
</tr>
<tr>
<td>Solano Way - South of Olivera Road</td>
<td>4,300</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>61</td>
<td>60.5</td>
<td>1.0</td>
</tr>
<tr>
<td>Laura Alice Way - North of Arnold Industrial Way</td>
<td>10,200</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>110</td>
<td>62.8</td>
<td>0.2</td>
</tr>
<tr>
<td>Peralta Road - Arnold Industrial Place to Olivera Road</td>
<td>7,800</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>91</td>
<td>62.5</td>
<td>0.9</td>
</tr>
<tr>
<td>Port Chicago Highway - North of Arnold Industrial Way</td>
<td>16,300</td>
<td>&lt; 50</td>
<td>72</td>
<td>148</td>
<td>64.8</td>
<td>0.1</td>
</tr>
<tr>
<td>Port Chicago Highway - Arnold Industrial Way to Highway 4 WB Ramps</td>
<td>23,600</td>
<td>&lt; 50</td>
<td>90</td>
<td>189</td>
<td>66.4</td>
<td>0.7</td>
</tr>
<tr>
<td>Port Chicago Highway - Highway 4 WB Ramps to Panoramic Drive</td>
<td>17,900</td>
<td>&lt; 50</td>
<td>76</td>
<td>158</td>
<td>65.2</td>
<td>0.5</td>
</tr>
<tr>
<td>Grant Street - North of Olivera Road</td>
<td>3,000</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>58.4</td>
<td>0.0</td>
</tr>
<tr>
<td>Grant Street - South of Olivera Road</td>
<td>3,300</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>52</td>
<td>58.8</td>
<td>0.0</td>
</tr>
</tbody>
</table>

*Average Daily Traffic.

Table IV.D-5: 2025 Without Project Traffic Noise Levels

<table>
<thead>
<tr>
<th>Roadway Segment</th>
<th>ADT</th>
<th>Center-line to 70 CNEL (feet)</th>
<th>Center-line to 65 CNEL (feet)</th>
<th>Center-line to 60 CNEL (feet)</th>
<th>CNEL (dBA) 50 feet from Centerline of Outermost Lane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arnold Industrial Way - West of Solano Way</td>
<td>7,100</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>86</td>
<td>61.6</td>
</tr>
<tr>
<td>Arnold Industrial Way - Solano Way to Highway 4 Ramps</td>
<td>7,000</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>85</td>
<td>61.6</td>
</tr>
<tr>
<td>Arnold Industrial Way - Highway 4 Ramps to Laura Alice Way</td>
<td>11,400</td>
<td>&lt; 50</td>
<td>57</td>
<td>117</td>
<td>63.7</td>
</tr>
<tr>
<td>Arnold Industrial Way - Laura Alice Way to Project Entrance</td>
<td>4,500</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>63</td>
<td>60.1</td>
</tr>
<tr>
<td>Arnold Industrial Way - Project Entrance to Port Chicago Highway</td>
<td>4,500</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>63</td>
<td>60.1</td>
</tr>
<tr>
<td>Arnold Industrial Place - Highway 4 Ramps to Peralta Road</td>
<td>7,300</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>87</td>
<td>62.2</td>
</tr>
<tr>
<td>Arnold Industrial Place - East of Peralta Road</td>
<td>4,100</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>60</td>
<td>59.7</td>
</tr>
<tr>
<td>Olivera Road - Solano Way to Peralta Road</td>
<td>6,900</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>83</td>
<td>62.6</td>
</tr>
<tr>
<td>Olivera Road - Peralta Road to Terraza del Sol</td>
<td>6,700</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>81</td>
<td>62.5</td>
</tr>
<tr>
<td>Olivera Road - Terraza del Sol to Grant Street</td>
<td>10,200</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>108</td>
<td>64.3</td>
</tr>
<tr>
<td>Olivera Road - Grant Street to Hwy 242 SB Ramps</td>
<td>12,600</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>125</td>
<td>64.1</td>
</tr>
<tr>
<td>Solano Way - North of Arnold Industrial Way</td>
<td>4,700</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>64</td>
<td>60.9</td>
</tr>
<tr>
<td>Solano Way - Arnold Industrial Way to Olivera Road</td>
<td>9,200</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>102</td>
<td>62.8</td>
</tr>
<tr>
<td>Solano Way - South of Olivera Road</td>
<td>5,100</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>68</td>
<td>61.3</td>
</tr>
<tr>
<td>Laura Alice Way - North of Arnold Industrial Way</td>
<td>10,000</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>108</td>
<td>62.7</td>
</tr>
<tr>
<td>Peralta Road - Arnold Industrial Place to Olivera Road</td>
<td>5,200</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>70</td>
<td>60.8</td>
</tr>
<tr>
<td>Port Chicago Highway - North of Arnold Industrial Way</td>
<td>18,800</td>
<td>&lt; 50</td>
<td>79</td>
<td>163</td>
<td>65.4</td>
</tr>
<tr>
<td>Port Chicago Highway - Arnold Industrial Way to Highway 4 WB Ramps</td>
<td>22,500</td>
<td>&lt; 50</td>
<td>88</td>
<td>183</td>
<td>66.2</td>
</tr>
<tr>
<td>Port Chicago Highway - Highway 4 WB Ramps to Panoramic Drive</td>
<td>18,000</td>
<td>&lt; 50</td>
<td>76</td>
<td>158</td>
<td>65.2</td>
</tr>
<tr>
<td>Grant Street - North of Olivera Road</td>
<td>3,600</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>55</td>
<td>59.2</td>
</tr>
<tr>
<td>Grant Street - South of Olivera Road</td>
<td>3,900</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>58</td>
<td>59.5</td>
</tr>
</tbody>
</table>


retail/restaurant uses in the tenant pad buildings. Exterior areas in front of the tenant pad buildings and parking lot areas will be below the 60 dBA CNEL traffic noise levels. Therefore, traffic-related on-site noise impacts are less than significant and no mitigation measures are required.

(3) **Vibration Impacts.** Based on the criteria of significance, a significant impact would occur if the project would expose persons to or generate excessive groundborne vibration or noise levels. Common sources of ground-borne vibration include construction activities such as blasting, pile driving and operating heavy earthmoving equipment. In extreme cases, excessive groundborne vibration has the potential to cause structural damage to buildings. The threshold for minor cosmetic damage of buildings considered of particular historical significance or that are particularly fragile
structures is approximately 96 VdB; the damage threshold for other structures is 100 VdB. Accordingly to the proposed project plans, however, construction of this project it is not expected to employ pile driving as a construction method. Typical groundborne vibration levels measured at a distance of 50 feet from heavy construction equipment in full operation, such as bulldozers or other heavy tracked equipment, range up to approximately 94 VdB. This is below the damage threshold for

\[2\] Harris, C.M. 1998. *Handbook of Acoustical Measurements and Noise Control*. 

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Table IV.D-6: 2025 With Project Traffic Noise Levels

<table>
<thead>
<tr>
<th>Roadway Segment</th>
<th>ADT</th>
<th>Center-line to 70 CNEL (feet)</th>
<th>Center-line to 65 CNEL (feet)</th>
<th>Center-line to 60 CNEL (feet)</th>
<th>CNEL (dBA) 50 feet from Centerline of Outermost Lane</th>
<th>Increase from Baseline Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arnold Industrial Way - West of Solano Way</td>
<td>7,200</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>87</td>
<td>61.7</td>
<td>0.1</td>
</tr>
<tr>
<td>Arnold Industrial Way - Solano Way to Highway 4 Ramps</td>
<td>7,400</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>88</td>
<td>61.8</td>
<td>0.2</td>
</tr>
<tr>
<td>Arnold Industrial Way - Highway 4 Ramps to Laura Alice Way</td>
<td>14,500</td>
<td>&lt; 50</td>
<td>65</td>
<td>137</td>
<td>64.7</td>
<td>1.0</td>
</tr>
<tr>
<td>Arnold Industrial Way - Laura Alice Way to Project Entrance</td>
<td>10,800</td>
<td>&lt; 50</td>
<td>53</td>
<td>112</td>
<td>63.9</td>
<td>3.8</td>
</tr>
<tr>
<td>Arnold Industrial Way - Project Entrance to Port Chicago Highway</td>
<td>8,600</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>97</td>
<td>63.0</td>
<td>2.9</td>
</tr>
<tr>
<td>Arnold Industrial Place - Highway 4 Ramps to Peralta Road</td>
<td>10,800</td>
<td>&lt; 50</td>
<td>53</td>
<td>112</td>
<td>63.9</td>
<td>1.7</td>
</tr>
<tr>
<td>Arnold Industrial Place - East of Peralta Road</td>
<td>4,200</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>61</td>
<td>59.8</td>
<td>0.1</td>
</tr>
<tr>
<td>Olivera Road - Solano Way to Peralta Road</td>
<td>7,800</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>90</td>
<td>63.1</td>
<td>0.5</td>
</tr>
<tr>
<td>Olivera Road - Peralta Road to Terraza del Sol</td>
<td>8,300</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>94</td>
<td>63.4</td>
<td>0.9</td>
</tr>
<tr>
<td>Olivera Road - Terraza del Sol to Grant Street</td>
<td>11,800</td>
<td>&lt; 50</td>
<td>55</td>
<td>118</td>
<td>64.9</td>
<td>0.6</td>
</tr>
<tr>
<td>Olivera Road - Grant Street to Hwy 242 SB Ramps</td>
<td>14,100</td>
<td>&lt; 50</td>
<td>64</td>
<td>134</td>
<td>64.6</td>
<td>0.5</td>
</tr>
<tr>
<td>Solano Way - North of Arnold Industrial Way</td>
<td>5,800</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>74</td>
<td>61.8</td>
<td>0.9</td>
</tr>
<tr>
<td>Solano Way - Arnold Industrial Way to Olivera Road</td>
<td>9,500</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>104</td>
<td>62.9</td>
<td>0.1</td>
</tr>
<tr>
<td>Solano Way - South of Olivera Road</td>
<td>6,000</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>76</td>
<td>62.0</td>
<td>0.7</td>
</tr>
<tr>
<td>Laura Alice Way - North of Arnold Industrial Way</td>
<td>10,200</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>110</td>
<td>62.8</td>
<td>0.1</td>
</tr>
<tr>
<td>Peralta Road - Arnold Industrial Place to Olivera Road</td>
<td>6,800</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>83</td>
<td>61.9</td>
<td>1.1</td>
</tr>
<tr>
<td>Port Chicago Highway - North of Arnold Industrial Way</td>
<td>19,100</td>
<td>&lt; 50</td>
<td>79</td>
<td>165</td>
<td>65.5</td>
<td>0.1</td>
</tr>
<tr>
<td>Port Chicago Highway - Arnold Industrial Way to Highway 4 WB Ramps</td>
<td>26,000</td>
<td>&lt; 50</td>
<td>96</td>
<td>201</td>
<td>66.8</td>
<td>0.6</td>
</tr>
<tr>
<td>Port Chicago Highway - Highway 4 WB Ramps to Panoramic Drive</td>
<td>20,100</td>
<td>&lt; 50</td>
<td>82</td>
<td>170</td>
<td>65.7</td>
<td>0.5</td>
</tr>
<tr>
<td>Grant Street - North of Olivera Road</td>
<td>3,600</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>55</td>
<td>59.2</td>
<td>0.0</td>
</tr>
<tr>
<td>Grant Street - South of Olivera Road</td>
<td>3,900</td>
<td>&lt; 50</td>
<td>&lt; 50</td>
<td>58</td>
<td>59.5</td>
<td>0.0</td>
</tr>
</tbody>
</table>

historic or fragile buildings. Furthermore, the proposed project would not contain any permanent sources of groundborne vibration. 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.

(4) Operational Impacts. During the long-term, operational phase of the commercial project, potential noise impacts 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, garden center activities, and other noise-generating activities. These are considered isolated peak noises and are not an averaged calculation, such as CNEL measurements, rather, these types of noise impacts are measured in dBA L\text{max}. L\text{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 from loading and unloading activities for other similar major retail outlets, this project would result in a noise level of 75 dBA L\text{max} at 50 feet from this source. The closest sensitive land uses to the proposed project are residential uses located south of Industrial Place at Northwood Drive, approximately 1,000 feet from the project site. Attenuation provided by the distance of 1,000 feet from the loading dock would be 26 dBA when compared to the noise level measured at 50 feet. Therefore, the truck noise and loading and unloading would be reduced to 49 dBA L\text{max} at the nearest residences to the south of the project site. This noise level would be lower than the existing traffic noise levels in the project vicinity 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 dBA L\text{max} at 50 feet. The majority of the parking areas proposed on the site are more than 1,000 feet from the nearest single family residences to the south, which would provide approximately 26 dBA in noise reduction when compared to the noise level measured at 50 feet from the source. 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 outlets, 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 area and the loading/unloading and truck movement noise. Impacts from other noise generating activities would be less than significant.
(5) **Construction Noise.** Noise levels from grading and other construction activities associated with implementation of the proposed project may range up to 91 dBA $L_{max}$ at 50 feet from an active construction area. Construction related short-term noise levels would be higher than existing ambient noise levels in the project vicinity but would not longer occur once construction is complete.

Two types of short-term noise impacts would occur during demolition and project construction. The first is the increase in traffic flow on local streets, associated with the transport of workers, equipment, and materials to and from the project site. The pieces of heavy equipment for grading and construction would be moved to the site and remain for the duration of each construction phase. The increase in traffic flow on the surrounding roads due to construction traffic is expected to be small relative to background traffic volumes. The associated increase in long-term traffic noise would not be perceptible. However, there would be short-term intermittent high noise levels associated with trucks arriving at and departing from the project site.

The second type of short-term noise impact is related to the noise generated by heavy equipment operating on the project site. Construction (including demolition of existing structures) is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the site and, therefore, the noise levels surrounding the site as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction related noise ranges to be categorized by work phase. Table IV.D-7 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.

The site preparation phase, which includes excavation and grading of the site, tends to generate the highest noise levels, because the noisiest construction equipment is earthmoving 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 one or two minutes of full-power operation followed by three or four minutes at lower power settings. Construction of the proposed project is expected to require the use of earthmovers, dozers, and water and pickup trucks. The maximum noise level generated by bulldozers is approximately 85 dBA $L_{max}$ at 50 feet. The maximum noise level generated by water and other trucks is approximately

<table>
<thead>
<tr>
<th>Type of Equipment</th>
<th>Range of Maximum Sound Levels (dBA at 50 feet)</th>
<th>Suggested Maximum Sound Levels for Analysis (dBA at 50 feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pile Drivers</td>
<td>81 to 96</td>
<td>93</td>
</tr>
<tr>
<td>Rock Drills</td>
<td>83 to 99</td>
<td>96</td>
</tr>
<tr>
<td>Jackhammers</td>
<td>75 to 85</td>
<td>82</td>
</tr>
<tr>
<td>Pneumatic Tools</td>
<td>78 to 88</td>
<td>85</td>
</tr>
<tr>
<td>Pumps</td>
<td>74 to 84</td>
<td>80</td>
</tr>
<tr>
<td>Scrapers</td>
<td>83 to 91</td>
<td>87</td>
</tr>
<tr>
<td>Haul Trucks</td>
<td>83 to 94</td>
<td>88</td>
</tr>
<tr>
<td>Cranes</td>
<td>79 to 86</td>
<td>82</td>
</tr>
<tr>
<td>Portable Generators</td>
<td>71 to 87</td>
<td>80</td>
</tr>
<tr>
<td>Rollers</td>
<td>75 to 82</td>
<td>80</td>
</tr>
<tr>
<td>Dozers</td>
<td>77 to 90</td>
<td>85</td>
</tr>
<tr>
<td>Tractors</td>
<td>77 to 82</td>
<td>80</td>
</tr>
<tr>
<td>Front-End Loaders</td>
<td>77 to 90</td>
<td>86</td>
</tr>
<tr>
<td>Hydraulic Backhoe</td>
<td>81 to 90</td>
<td>86</td>
</tr>
<tr>
<td>Hydraulic Excavators</td>
<td>81 to 90</td>
<td>86</td>
</tr>
<tr>
<td>Graders</td>
<td>79 to 89</td>
<td>86</td>
</tr>
<tr>
<td>Air Compressors</td>
<td>76 to 89</td>
<td>86</td>
</tr>
<tr>
<td>Trucks</td>
<td>81 to 87</td>
<td>86</td>
</tr>
</tbody>
</table>

86 dBA L_{max} at 50 feet from these vehicles. Front-end loaders would generate a maximum of 86 dBA L_{max} at 50 feet from the operating piece of equipment. Each doubling of the sound sources with equal strength would increase the noise level by 3 dBA. 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.

At 1,000 feet away, the nearest single family residences may be subject to short-term, intermittent, maximum noise reaching 65 dBA L_{max} generated by construction activities on the project site. This range of noise levels is below the ambient noise from vehicular traffic in the project vicinity. In addition, the construction noise levels would not exceed the City’s 70 dBA L_{max} conditionally acceptable noise standard for new commercial land use development. However, the proposed project shall be required to comply with the construction hours specified in the City Municipal Code to ensure that the noise from haul trucks would not impact the neighboring residential uses.

d. **Significant Impacts.** Implementation of the project would not result in any significant noise impacts.
E. CULTURAL AND PALEONTOLOGICAL RESOURCES

This section describes the cultural and paleontological resources within and immediately adjacent to the project site, analyzes the project’s potential impacts on them, and recommends mitigation measures where appropriate. The information presented herein is derived from a background report on cultural and paleontological resources prepared for the previously proposed Jones Ranch project in 2005. No changes in conditions at the project site have occurred since 2005 that would alter the background report conclusions regarding potential cultural or paleontological resources. The background report is included as Appendix E in this EIR.

Background research for this section included a records search at the Northwest Information Center (NWIC) of the California Historical Resources Information System, Sonoma State University, Rohnert Park, California. The NWIC is an affiliate of the California Office of Historic Preservation and is the official state repository of cultural resources reports and records for a 16-county area, including Contra Costa County. Other cultural resources inventories reviewed include (1) California Inventory of Historic Resources,1 (2) Five Views: An Ethnic Historic Site Survey for California,2 (3) California Historical Landmarks,3 (4) California Points of Historical Interest,4 and (5) Directory of Properties in the Historic Property Data File for Contra Costa County.5

The California Native American Heritage Commission (NAHC) was also consulted regarding information about cultural resources in, or concerns about, the project area.

1. Setting

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

a. Paleontological Resources. Paleontological resources consist of fossils and their immediate surroundings. Paleontological background research to identify paleontological resources within and adjacent to the project area consisted of a review of paleontological and geological literature and maps, and a fossil locality search (conducted on October 10, 2005, by the University of California Museum of Paleontology (UCMP), Berkeley). The search did not identify any fossil localities on or within the immediate vicinity of the project site.

The project site lies on Late Pleistocene alluvium that is underlain by older Tertiary formations, all of which are paleontologically sensitive. This Late Pleistocene aged alluvium (i.e., 10,000 to 40,000 years old) is composed of poorly sorted, irregular interbedded clay, silt, sand, and gravel that can be

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1 California Department of Parks and Recreation, 1976. California Inventory of Historic Resources.
up to 150 feet thick.\(^6\) The soils on the project site, in particular, are of Capay clay that formed in alluvium from sedimentary rock that extend approximately six feet deep.\(^5\) Late Pleistocene alluvium in the San Francisco Bay Area is highly sensitive for paleontological resources and locally contains freshwater gastropods, pelecypods, and continental vertebrate fauna including camel, bison, horse, sloth, and mammoth of the Rancholabrean land mammal age.\(^8\) Within 10 miles of the project site, 160 vertebrate fossil specimens from 39 fossil localities have been recorded.

b. Cultural Resources. No cultural or historical resources were identified on the project site or within the adjacent vicinity by the background research and field survey (see Appendix E). None of the existing buildings on the site, including the existing house, were identified as historical resources. Further, on October 26, 2005, the Native American Heritage Commission (NAHC) confirmed that no known Native American resources are within the vicinity of the project site.\(^9\)

c. Regulatory Context. This subsection briefly discusses laws, codes, and regulations applicable to cultural resources within the City of Concord.

(1) California Environmental Quality Act (CEQA). CEQA states that a substantial adverse change in the significance of a historical resource is a significant effect on the environment (Section 15064.5(b)). CEQA defines an “historical resource” as one which is listed in or determined eligible for listing on the California Register, a local register of historical resources, identified as significant in a historical resource survey meeting the requirements of Public Resources Code Section 5024.1(g), or determined to be a historical resource by a project’s lead agency (CEQA Guidelines Section 15064.5(a)). Under CEQA, an 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)).

CEQA also applies to effects on archaeological sites. The Lead Agency must determine if an archaeological site meets the definition of a historical resource by using a two-step screening process, in accordance with CEQA. The first process is to determine whether a cultural resource meets the definition of an historical resource under CEQA. If the cultural resource is found to meet the definition of a historical resource, then it is treated as an historical resource under CEQA. If the cultural resource does not meet the definition of a historical resource, then the Lead Agency applies the second screen to determine if the resource meets the definition of a unique archaeological resource as defined by CEQA Guidelines Section 21083.2(g). Should the archaeological site meet the definition of a unique archaeological resource, then it must be treated in accordance with CEQA Guidelines Section 21083.2. If the archaeological site does not meet the definition of a historical resource or a unique archaeological resource, then effects to the site are not considered significant under CEQA (CEQA Guidelines Section 15064.5(c)(4)).

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\(^7\) Welch, Lawrence E., 1977. Soil Survey of Contra Costa County, California.

\(^8\) Savage, 1951; Stirton, 1951; Helley, et al, 1979; Bell, et al., 2004.

(2) **Concord General Plan Policies.** Concord General Plan policies related to cultural and paleontological resources are listed and discussed in Table IV.A-1 in Section IV.A, Land Use and Planning Policy.

2. **Impacts and Mitigation Measures**

Implementation of the proposed project has the potential to disturb cultural resources. Significance criteria, the potential impacts of several components of the proposed project, and recommended mitigation measures are described below.

a. **Criteria of Significance.** 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. Specifically, substantial adverse changes include physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired;
   - 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
   - Disturb any human remains, including those interred outside of formal cemeteries.

b. **Less-than-Significant Cultural and Paleontological Resource Impacts.** As described in subsections 1.a and 1.b, above, neither the site survey nor research conducted on the proposed project site indicate that cultural, historical, archaeological, or paleontological resources are known to be present on the site and none were observed during the archaeological site reconnaissance. Potential impacts on known cultural, historical, archaeological, and paleontological resources are therefore considered less than significant. However, because the project area is highly sensitive to paleontological resources, such as camel, bison, horse, sloth, and mammoth of the Rancholabrean land mammal age, the potential to uncover these resources during ground-disturbing activities is significant, as described in subsection 2.c, below.

c. **Significant Cultural and Paleontological Impacts.** One potentially significant impact has been identified, as described below. With the recommended mitigation, this impact would be reduced to a less-than-significant level.

**Impact CULT-1: Project construction could disturb as-yet unknown deposits of prehistoric or historical archaeological resources, human remains, or paleontological resources. (S)**

The project area is sensitive for buried prehistoric and historical archaeological and paleontological resources, including human remains. These deposits may be found below fill soils throughout the project site. Ground-disturbing activities throughout the project site could uncover prehistoric or historic deposits and, inappropriate removal or destruction of such deposits, if not properly mitigated, would result in significant impacts. The following three-pronged mitigation measure shall be monitored by a qualified archaeologist as described.
Mitigation Measure CULT-1a: If deposits of prehistoric or historic archeological materials are encountered during project activities, all work within 25 feet of the discovery shall be redirected and the project applicant shall retain a qualified archaeologist (i.e., a Registered Professional Archaeologist included in the Northwest Information Center’s Consultants List) to assess the deposit finds and make recommendations.10

While deposits of prehistoric or historic archeological materials should be avoided by project activities, if the deposits cannot be avoided, they should be evaluated for their California Register eligibility. If the deposits are not eligible for the California Register, avoidance is not necessary. If the deposits are eligible for the California Register, they shall be avoided. If avoidance is not feasible, project impacts should be mitigated in accordance with the recommendations of the evaluating archaeologist and CEQA Guidelines Section 15126.4 (b)(3)(C), which requires implementation of a data recovery plan and avoidance of human remains. Upon completion of the archaeologist’s assessment, the archaeologist shall prepare a report documenting the methods and results, and provide recommendations for the treatment of the archeological materials discovered. The report shall be submitted to the project applicant, appropriate City departments, and the Northwest Information Center (NWIC) of the California Historical Resources Information System, at Sonoma State University.

Mitigation Measure CULT-1b: If human remains are encountered, all applicable requirements under state law shall be followed, including but not limited to Public Resources Code Sections 5097-5097.6, Health & Safety Code Section 7050.5, and CEQA Guidelines Sections 15064.5 and 15126.4. The requirements include the following. Work within 25 feet of the discovery shall be redirected and the County Coroner notified immediately. At the same time, the project applicant shall retain a qualified archaeologist to assess the human remains discovery. If the human remains are of Native American origin, the Coroner shall notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

Upon completion of the archaeologist’s assessment, the archaeologist shall prepare a report documenting the methods and results, and provide recommendations for the treatment of the human remains and any associated cultural materials, as appropriate, in coordination with the recommendations of the MLD. The report shall be submitted to the project applicant, appropriate City departments, and the NWIC (as applicable).

Mitigation Measure CULT-1c: The Late Pleistocene alluvium that underlies the project site is highly sensitive for fossil resources and there is a possibility that significant paleontological resources could be encountered during demolition, site preparation, and grading. The bedrock formations that underlie the Late Pleistocene alluvium on the project site also contain fossil resources. Though unlikely to be encountered during project ground-disturbing construction, such bedrock formations shall also be monitored.

10 Prehistoric materials can include flaked-stone tools (e.g., projectile points, knives, choppers) or obsidian, chert, or quartzite toolmaking debris; culturally darkened soil (i.e., midden soil often containing heat affected rock, ash and charcoal, shellfish remains, and cultural materials); and stone milling equipment (e.g., mortars, pestles, handstones). Historical materials can include wood, stone, concrete, or adobe footings, walls and other structural remains; debris-filled wells or privies; and deposits of wood, glass, ceramics, and other refuse.
If paleontological resources are encountered during demolition, site preparation, or grading, all work within 25 feet of the discovery should be redirected until a qualified paleontologist has assessed the discoveries and made recommendations. If the paleontological resources are found to be significant, adverse effects to such resources shall be avoided by project activities where feasible. If project activities cannot avoid the resources, the adverse effects shall be mitigated in accordance with CEQA requirements. At a minimum, mitigation should include data recovery and analysis, preparation of a final report, and the formal transmission or delivery of any fossil material recovered to a paleontological repository, such as the University of California Museum of Paleontology (UCMP), Berkeley. Upon completion of project activities, a final report documenting methods and findings of the mitigation shall be prepared and submitted to the project applicant, appropriate City departments, and a suitable paleontological repository.

(LTS)
IV. SETTING, IMPACTS AND MITIGATION MEASURES

X. CULTURAL AND PALEONTOLOGICAL RESOURCES
F. GEOLOGY, SOILS AND SEISMICITY

This section describes the project site’s geologic environment based on a site reconnaissance, published and unpublished geologic reports, and maps. This section also assesses potential impacts from seismically induced fault rupture, strong ground shaking, liquefaction, slope failure, lateral slope deformation, differential settlement, and unstable or expansive soils. Mitigation measures for the identified significant impacts are provided, as appropriate.

1. Setting

This subsection describes the project site’s existing geologic, soil, and seismic conditions.

a. Geologic Conditions. The geology, topography and soils of the project site and vicinity are described below.

   (1) Geology. The project site is located at the eastern edge of the Coast Ranges Geomorphic Province near the boundary with the Great Valley Geomorphic Province of California, a relatively geologically young and seismically active region. The regional structure of the Coast Ranges consists of northwest-trending folds and faults created by the tectonic setting of colliding plate boundaries and subsequent transitional shear along the San Andreas Fault Zone (SAFZ). As a result, northwest-southeast-trending ranges of low mountains and intervening valleys dominate this region. In general, the Coast Ranges are composed of sedimentary bedrock. Overlying the bedrock, recent alluvium fills the intervening valleys. Specifically, the project site is underlain by surficial deposits of Quaternary alluvium. The project site is located about three miles south of Suisun Bay in the lower elevations of the Clayton Valley, which climbs to the southeast towards Mount Diablo.

   (2) Topography. The project site’s topography is nearly flat, with an overall slope of approximately 1.3 percent. The elevation of the project site varies from about 40 feet above mean sea level (AMSL) at the northeastern corner to about 25 feet AMSL at the western edge.

   (3) Soils. Soil is generally defined as the unconsolidated mixture of mineral grains and organic material that mantles the land surface. Soils can develop on unconsolidated sediments and weathered bedrock. The characteristics of soil reflect the five major influences on their development: topography, climate, biological activity, parent (source) material, and time. The project site is mantled by surface soils that reflect the characteristics of the underlying materials on which the soil is developed. The soil types at the project site, as described below, have been mapped by the Natural Resource Conservation Service (formerly the Soil Conservation Service).

Surface soils at the project site are mapped as Capay Clay. Pockets of Kimball Gravelly Loam and Zamora soils are mapped under the cemetery to the east.

Capay soil with slopes of less than 2 percent is characterized as being moderately well-drained with slow permeability, low strength, slow runoff with little erosion but with high shrink-swell potential and corrosivity. Kimball series soil with a slope of less than two percent is characterized as being well-drained with slow permeability, slow runoff with little erosion, low strength with high shrink-swell potential, and corrosivity.

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1 California Geographic Survey (CGS), 2002. *California Geomorphic Provinces, Note 36*.
3 USGS, 1959, revised 1980. *Vine Hill Quadrangle (formally Port Chicago)*.
swell potential and moderate or high corrosivity. Zamora series soil with a slope of less than two percent is characterized as being well-drained with moderate permeability, medium strength, slow runoff with little erosion but with moderate shrink-swell potential and high corrosivity.

b. Seismic Conditions. This subsection describes the regional and site-specific seismic conditions of the project site.

(1) Regional Seismicity. The entire San Francisco Bay Area is located in a region of active seismicity. The seismicity of the region is primarily related to the San Andreas Fault Zone (SAFZ), which is a complex of active faults forming the boundary between the North American and the Pacific lithospheric plates. Movement of the plates relative to one another results in the accumulation of strain along the faults that is released during earthquakes. Historically, numerous moderate to strong earthquakes have been generated in northern California by several major faults in the SAFZ system. The level of active seismicity results in classification of the San Francisco Bay Area as seismic risk Zone 4, the highest risk category, in the California Building Code.

SAFZ includes numerous faults found by the California Division of Mines and Geology under the Alquist-Priolo Earthquake Fault Zoning Act (A-PEFZA) to be “active” (i.e., to have evidence of surface rupture in the last 11,000 years). The A-PEFZA active faults in the region include the Concord-Green Valley (CGV), West Napa, Mayacama, Rodgers Creek, Hayward, Calaveras, Greenville, and San Andreas faults.

Faults mapped by the A-PEFZA are those that manifest surface rupture. There are, however, other seismic sources in the region in addition to the A-PEFZA. One such seismic source is the Coast Range-Sierran Block Boundary (CRSBB) that forms the western geomorphic boundary of the Central Valley with the Coast Ranges to the west. A seismically active fold and thrust belt underlies this actively deforming boundary. The CRSBB is currently recognized as a potential seismic source capable of generating moderate earthquakes that could affect the project site. Eleven earthquakes (magnitude 5.8 to 6.8) have been documented along the CRSBB zone during the last 150 years. Specifically, the Great Valley thrust fault system is located about 14 miles to the north-northeast of the project site. Representative earthquakes of the Great Valley thrust fault include the Winters (1892, 1906).

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8 Developed in 1935 by Charles Richter in collaboration with Beno Gutenberg, the standard for measurement of magnitude (Ml) by geologists and seismologists was the Richter Scale, a mathematical formula for assigning a numeric value to a seismic event based on the motion recording generated by a standard Wood-Anderson seismometer. However, due to limitations of the instrumentation used to measure Richter magnitude, moment magnitude (Mw) is now commonly used to characterize seismic events. Moment magnitude is determined from the physical size (area) of the rupture of the fault plane, the amount of horizontal and/or vertical displacement along the fault plane, and the resistance of the rock type along the fault to rupture. The moment magnitude can be calculated following an earthquake or estimated for an expected earthquake if the fault rupture area, displacement, and rock properties can be estimated accurately. Therefore, the magnitudes of expected earthquakes in the San Francisco Bay Area are reported as moment magnitudes.

Mw6.25\textsuperscript{10}, Vacaville (1892, Mw6.5), Antioch (1889, Mw6.25) and the more recent 1983 Coalinga (Mw6.7) event.\textsuperscript{11} Regional faults are shown on Figure IV.F-1.

The U.S. Geological Survey’s Working Group on California Earthquake Probabilities estimated that there is a 62-percent probability that one or more Mw6.7 or greater magnitude earthquakes will occur in the San Francisco Bay Area between 2002 and 2031.\textsuperscript{12} The probability of a Mw6.7 magnitude or greater earthquake occurring along individual faults was estimated to be 21 percent along the San Andreas Fault, 27 percent along the Hayward-Rodgers Creek Fault, eleven percent along the Calaveras Fault, four percent along the Concord-Green Valley (CGV) Fault, and three percent on the Greenville Fault. When predictions are expanded to 100 years, it is estimated that about three Mw6.7 or greater events could occur during that time. Thus, the probability of at least one Mw6.7 or greater magnitude earthquake rises to the near certainty of about 96 percent when calculated for a 100-year span.\textsuperscript{13}

(2) Site-Specific Seismicity. The project site is about three-quarters of a mile east of the Avon section of the CGV Fault.\textsuperscript{14} The CGV is a right lateral strike slip fault with an approximately north-south axis.\textsuperscript{15} The CGV is characterized by a zone of discontinuous faulting approximately four-fifths of a mile wide where it bypasses the project site. The CGV fault off-set, as measured at Red Top Road located approximately 15 miles north of the project site, has averaged 4.9 millimeters (mm) of slip per year over the last 18 years, and the anticipated on-going slip rate is 5.0 mm +/- 3.0 mm per year.\textsuperscript{16}

c. Seismic and Geologic Hazards. This subsection describes hazards related to the seismic and geologic conditions of the project site. Portions of this analysis are based on a technical study prepared by Aqua Science Engineers, Inc., which is on-file with the City of Concord Planning Division.

(1) Surface Rupture. Surface rupture occurs when the ground surface is broken due to fault movement during an earthquake. The location of surface rupture generally can be assumed to be along an active or potentially active major fault trace.

No active faults have been mapped across the project site. Therefore, the potential for fault rupture at the site is negligible, and no portion of the site is located within an Alquist-Priolo Earthquake Fault Zone. The closest known active fault to the project site is the Avon section of the CGV Fault, located approximately three-quarters of a mile to the west.\textsuperscript{17}

\textsuperscript{10} Magnitudes prior to 1898 given as ‘adjusted intensity magnitude,’ a subjective rating based on historical description.
\textsuperscript{13} Ibid.
\textsuperscript{14} California Division of Mines and Geology (CDMG), 1993. Special Studies Zone Map of the Vine Hill Quadrangle.
\textsuperscript{15} Right-lateral: if the trace of the fault were viewed while standing on one side during an event, it would appear that the ground on the other side of the fault moved to the right. Strike-slip: the sides are moving laterally relative to each other with little or no vertical movement.
\textsuperscript{16} USGS, 2003, op cit.
\textsuperscript{17} CDMG, 1993, op cit.
FIGURE IV.F-1

Regional Faults

Legend:

- Active fault - fault has evidence of surface displacement within the past 11,000 years (dashed where inferred)
- Potentially active fault - fault has evidence of surface displacement in the past 1.6 million years, but not within the past 11,000 years
- Seismic source without surface rupture

I:\CCD0801\Lowes\figures\Fig_IVF1.cdr (5/5/08)
(2) **Ground Shaking.** Ground shaking is a general term referring to all aspects of motion of the earth’s surface resulting from an earthquake, and is normally the major cause of damage in seismic events. The extent of ground shaking is controlled by the magnitude and intensity of the earthquake, distance from the epicenter, and local geologic conditions. Magnitude is a measure of the energy released by an earthquake; seismographs that measure the amplitude of seismic waves assess it. Intensity is a 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 (Table IV.F-1). 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).

(3) **Peak Acceleration.** Estimates of the peak ground acceleration have been made for the Bay Area based on probabilistic models that account for multiple seismic sources. Under these models, consideration of the probability of expected seismic events is incorporated into the determination of the level of ground shaking at a particular location. The expected peak horizontal acceleration (with a ten-percent chance of being exceeded in the next 50 years) generated by any of the seismic sources potentially affecting the project area, including the project site, is estimated by the California Geological Survey as 0.609. This level of ground acceleration at the project site is a potentially significant hazard.

(4) **Liquefaction.** Liquefaction is the temporary transformation of loose, saturated granular sediments from a solid state to a liquefied state as a result of seismic ground shaking. In the process, the soil undergoes transient loss of strength, which commonly causes ground displacement or ground failure to occur. Since saturated soils are a necessary condition for liquefaction, soil layers in areas where the groundwater table is near the surface have higher liquefaction potential than those in which the water table is located at greater depths. The groundwater level at the site has been found at depths of 20 to 38 feet below ground surface.

The project site would have low susceptibility to liquefaction based on the geologic conditions and would face a very low seismic liquefaction hazard.

(5) **Lateral Spreading.** Lateral spreading is a form of horizontal displacement of soil toward an open channel or other “free” face, such as an excavation boundary. Lateral spreading can result from either the slump of low cohesion, unconsolidated material or more commonly by liquefaction of either the soil layer or a subsurface layer underlying soil material on a slope, resulting in gravity-driven movement. Earthquake shaking leading to liquefaction of saturated soil can result in lateral spreading where the soil undergoes a temporary loss of strength.

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### Table IV.F-1: Modified Mercalli Scale

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Not felt except by a very few under especially favorable circumstances.</td>
</tr>
<tr>
<td>II</td>
<td>Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing.</td>
</tr>
<tr>
<td>III</td>
<td>Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibration like passing of truck. Duration estimated.</td>
</tr>
<tr>
<td>IV</td>
<td>During the day felt indoors by many, outdoors by few. At night some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.</td>
</tr>
<tr>
<td>V</td>
<td>Felt by nearly everyone, many awakened. Some dishes, windows, etc., broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop.</td>
</tr>
<tr>
<td>VI</td>
<td>Felt by all, many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight.</td>
</tr>
<tr>
<td>VII</td>
<td>Everybody runs outdoors. Damage negligible in building of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving motor cars.</td>
</tr>
<tr>
<td>VIII</td>
<td>Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motor cars disturbed.</td>
</tr>
<tr>
<td>X</td>
<td>Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from river banks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.</td>
</tr>
<tr>
<td>XII</td>
<td>Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted.</td>
</tr>
</tbody>
</table>


The lateral spreading hazard will tend to mirror the liquefaction hazard for a project site, and by definition needs an open channel or “free” face to expand into. Based on the low susceptibility to liquefaction at the project site, lateral spreading is unlikely except during the construction phase when unreinforced open trenches related to utility or foundation construction could present a transitory opportunity for a lateral spreading event to occur. Utilization of normal construction safety standards and precautions during site construction would reduce lateral spreading hazards to a low level.21

(6) **Expansive Soils.** Expansion and contraction of volume can occur when expansive soils undergo alternating cycles of wetting (swelling) and drying (shrinking). During these cycles, the volume of the soil changes markedly. As a consequence of such volume changes, structural damage to building and infrastructure may occur if the potentially expansive soils were not considered in project design and during construction.

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The project site is located on alluvial soils consisting primarily of silty clay, clayey silts, and sandy clay. Clays are typically expansive. The soils underlying the project site have been identified as having moderate to high shrink-swell potential and as being expansive.

(7) Slope Stability. Slope failure can occur as either rapid movement of large masses of soil (“landslide”) or slow, continuous movement (“creep”). The primary factors influencing the stability of a slope are: 1) the nature of the underlying soil or bedrock, 2) the geometry of the slope (height and steepness), 3) rainfall, and 4) the presence of previous landslide deposits.

Based on a study by the USGS, the entire project site is classified as Category 1 - Stable; This category is defined as areas with zero to five percent slope that are not underlain by landslide deposits.

(8) Settlement and Differential Settlement. Differential settlement or subsidence could occur if buildings or other improvements were built on low-strength foundation materials (including imported fill) or if improvements straddle the boundary between different types of subsurface materials (e.g., a boundary between native material and fill). Although differential settlement generally occurs slowly enough that its effects are not dangerous to inhabitants, it can cause significant building damage over time.

The boring logs developed as part of the soil and groundwater assessment at the site did not identify specific fill areas on the investigated portion of the project site (western 23 acres). Part of the site investigation included six, four-foot deep test pit excavations. It is unknown whether the test pits were restored with compacted fill. If other portions of the project site contain loose or uncontrolled (non-engineered) fill, those areas may be susceptible to differential settlement, once buildings and improvements have been constructed.

d. Concord General Plan Policies. Concord General Plan policies related to geology, soils and seismicity are listed and discussed in Table IV.A-1 in Section IV.A, Land Use and Planning Policy.

2. Impacts and Mitigation Measures

This subsection identifies potential impacts related to geology, soils and seismicity and recommends mitigation measures. The criteria of significance are listed below, followed by discussion of less-than-significant impacts and then significant impacts and associated mitigation measures.

a. Criteria of Significance. The proposed project would result in a significant geologic, soils or seismic impact if it would have any of the following effects:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  a) Rupture of a known 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;
  b) Strong seismic ground shaking;

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23 USDA, 1977, op cit.
c) Seismic-related ground failure (including liquefaction); and/or
d) Landslides.

- Result in substantial soil erosion or the 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 on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

b. Less-than-Significant Geology, Soils and Seismicity Impacts. The proposed project is not located on an unstable geologic unit, the development of which would be subject to, or contribute to, on- or off-site fault rupture, landslide, lateral spreading, or subsidence. Implementation of the proposed project would not result in the loss of a known mineral resource; the site is classified MRZ-1, “Areas where available geologic information indicates that little likelihood exists for the presence of significant mineral resources.” Potential impacts associated with erosion and loss of topsoil are discussed in the Hydrology and Water Quality section of this EIR.

c. Significant Geology, Soils and Seismicity Impacts. The following three significant impacts associated with the project have been identified.

Impact GEO-1: Seismically-induced ground shaking at the project site could result in injuries, fatalities, and property damage. (S)

All structures and improvements in the Bay Area could potentially be affected by ground shaking in the event of an earthquake on regional active faults. The amount of ground shaking depends on the magnitude of the earthquake, the distance from the epicenter, the type of earth materials between the site and the fault rupture, and the structural design of the site. Ground shaking potential is estimated on a worst-case basis by assessing the maximum expected earthquakes and designing for peak accelerations that may be generated. The project site is about 0.75-mile from the CGV Fault, and very violent (MMI X) ground shaking is predicted at the project site during a large earthquake on the CGV Fault. This level of seismic shaking could cause injuries and/or fatalities and extensive structural and non-structural damage to buildings at the site.

The project is required to meet the California Building Code (CBC), incorporating the latest edition of the Uniform Building Code (UBC), and City design requirements and guidelines for buildings constructed in areas of high seismic risk. The adverse effects of seismically induced ground shaking on the potential development and users can be reduced to generally accepted levels by completing the project design and construction in conformance with current best standards for earthquake resistant construction in accordance with the CBC and City Code.

While the site has been identified as having a low liquefaction potential, and the groundwater has been identified as occurring at depths of greater than 20 feet, site-specific investigation of the liquefaction potential has not been conducted.

\[\text{\footnotesize 26 California Department of Conservation, 1987. Mineral Land Classification Special Report 146 part 2, Map plate 2.34, Port Chicago Quadrangle.}\]
Mitigation Measure GEO-1: The project applicant shall submit a site-specific geotechnical report prepared by a licensed professional to the City Engineer for review and approval prior to the issuance of building permits. The report shall provide seismic design criteria for proposed structures. The report shall also provide information on the liquefaction potential of the site and provide design recommendations, if necessary, to reduce damage to site improvements from liquefaction. (LTS)

It is acknowledged that seismic hazards cannot be completely eliminated, even with site-specific geotechnical investigation and advanced building practices (as provided in the mitigation measure above). However, exposure to seismic hazards is a generally accepted part of living in the seismically active areas of California, and therefore the mitigation measure described above reduces the potential hazards associated with seismic activity to a less-than-significant level.

Impact GEO-2: Differential settlement at the project site could result in damage to project buildings and other improvements. (S)

Grading of the project site in preparation for construction of buildings and utilities would result in areas of cut and fill. Fills of different thickness and fills adjacent to cut areas could create the potential for differential settlement. If the settlement is not uniform, structural damage can occur. Buried utilities may also experience differential settlement along their alignments.

Investigations of the project site have included installation of a number of borings and test pits.27 The investigations were conducted as part of a soil and groundwater investigation to assess hazardous materials issues on the western 23 acres of the project site. Subsurface investigation indicates that the materials underlying the western portion of the project site consist generally of silty and sandy clays to the depth of exploration of about 38 feet. Groundwater was encountered at depths ranging from about 20 to 38 feet. Construction on uncompacted and loose fill, if present on the site, would be subject to varying rates of settlement. Structures built over discontinuous materials of varying densities and compactness may be subject to stress or damage due to differential settlement. Implementation of the following mitigation measure would reduce this impact to a less-than-significant level.

Mitigation Measure GEO-2: The project applicant shall submit a site-specific geotechnical report prepared by a licensed professional to the City Engineer for review and approval prior to the issuance of building permits. The report shall include specific recommendations for mitigating potential settlement associated with native soil/fill boundaries and areas of different fill thickness, if any. The report shall specifically address treatment of test pit areas to ensure that differential settlement will not occur in those areas. In addition, an evaluation of liquefaction potential shall be performed; if liquefaction potential is identified, the report shall provide recommendations for reducing the liquefaction potential using standard geotechnical methods. (LTS)

Impact GEO-3: Damage to project structures or property could result from expansive soils. (S)

Soils underlying the project site have been identified as having a high shrink-swell potential.28 Structural damage of buildings or rupture of utilities may occur if the potentially expansive soils were not

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Mitigation Measure GEO-3: The applicant shall submit a site-specific geotechnical report, prepared by a licensed professional to the City Engineer for review and approval prior to the issuance of building permits. The report shall include recommendations for foundations and improvements, including sidewalks, parking lots, and subsurface utilities, considering expansive soil conditions and incorporate measures to ensure that potential damage due to shrink/swell potential of soils is minimized. Corrective measures, as recommended by a licensed professional, may include removal and replacement of problematic soils with engineered and compacted fill, proper drainage design, or design and construction of improvements to withstand the forces exerted by expected shrink/swell cycles. (LTS)
G. BIOLOGICAL RESOURCES

This section presents information on biological resources found at and in the vicinity of the proposed project. The setting section of this chapter describes the habitats and biological resources on the 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.

1. Setting

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

a. Methods. The California Natural Diversity Database (CNDDB)\(^1\) was searched to locate records of special-status species and sensitive communities/habitats in the general vicinity of Concord.

A field reconnaissance survey of the project site was conducted on September 27, 2005, which included walking the entire site, recording information on the vegetation communities and wildlife present, searching for sensitive plant communities and habitats, as well as searching for evidence of special-status species or habitats that could support such species. In July 2008, an LSA wildlife biologist conducted a follow-up site visit to check whether site conditions had changed significantly since the 2005 survey; this follow-up site visit confirmed the findings of the 2005 survey. Plants and animals observed during the field reconnaissance survey were recorded in field notes. Plant taxonomy and nomenclature follows \textit{The Jepson Manual}.\(^2\) Nomenclature for special-status plant and wildlife species follows the CNDDB.\(^3\) Scientific names for bird species are not provided in the text since common names of birds are standardized in the American Ornithologists’ Union (AOU) \textit{Check-list of North American Birds, Seventh Edition}\(^4\) and supplements.

b. Regulatory Context. Relevant regulations concerning biological resources are discussed below.

(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 habitat modification or degradation that results in death or injury to a listed species. 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.

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\(^1\) California Natural Diversity Database (CNDDB). 2005. Special-status species occurrences within the Richmond and San Quentin USGS 7.5-minute quadrangles. Wildlife and Habitat Data Analysis Branch, California Department of Fish and Game, Sacramento.


\(^3\) CNDDB 2005, op. cit.

The U.S. Fish and Wildlife Service (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. The Sacramento office of the USFWS also maintains a list of Species of Concern to ensure the health of these species and their habitats and to determine whether they may need to be listed as threatened or endangered.

(2) **Federal Migratory Bird Treaty Act.** The federal Migratory Bird Treaty Act (16 U.S.C., Sec. 703, Supp. I, 1989) prohibits the killing, possessing, or trading of migratory birds, except as allowed in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. Most native bird species on the project site are covered by this Act.

(3) **California Fish and Game Code.** Sections 3503 and 3505 of the California Fish and Game Code 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 CDFG.

(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, California Department of Fish and Game (CDFG) has jurisdiction over state-listed species (California Fish and Game Code 2070). Additionally, the CDFG 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.

(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 CDFG.

(6) **California Native Plant Society.** The California Native Plant Society (CNPS), a non-governmental conservation organization, has developed lists of plant species of concern in California. Plants included on these lists are defined as follows:

- List 1A: Plants considered extinct.
- List 1B: Plants rare, threatened, or endangered in California and elsewhere.
- List 2: Plants rare, threatened, or endangered in California but more common elsewhere.
- List 3: Plants about which more information is needed – review list.
- List 4: Plants of limited distribution – watch list.

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Although the CNPS is not a regulatory agency and plants on these lists have no formal regulatory protection, plants appearing on List 1B or List 2 are, in general, considered to meet the criteria of CEQA Guidelines Section 15380, and adverse effects on these species are considered significant.

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

(8) City of Concord Heritage Tree Ordinance. Concord Municipal Code Section 114, Division 2 provides standards for the preservation, protection, and removal of heritage trees. This ordinance provides a uniform method for identifying and maintaining heritage trees. It also aims to conserve scenic beauty, prevent erosion, protect against floods, and help maintain the climate of the area. Heritage trees are identified by their size or are designated as such through a specified process in Municipal Code Section 114-32. Heritage Trees are defined as 1) any tree in the city, whether located on public or private property, which is at least 72 inches in circumference (approximately 24 inches in diameter) measured 4½ feet above natural or established grade; or 2) a multi-stemmed tree that has one stem of at least 24 inches in circumference; or 3) any tree or group of trees that has a relationship to an event of historical significance or of public interest and that has been designated by the Planning Commission as a heritage tree. Designated heritage trees are considered outstanding specimens of its species by virtue of the location, health, conformation, age, size, or rarity of the individual or group of trees designated, as well as being in a location and state of health that would provide a high probability of survival.

c. Existing Conditions. The 28± project site consists of 23± acres of developed industrial land and an adjacent undeveloped 5± acre site. The site is bordered on the south by Arnold Industrial Way and State Route 4, to the east by Memory Gardens Memorial Park Cemetery, and to the north and west by industrial uses, as described in Chapter III, Project Description. The developed industrial areas of the site contain storage buildings, workshops, office trailers, numerous stored vehicles, and heavy equipment. In addition, a ranch house is located in the northeast corner of the site; the house is surrounded by ornamental plantings and trees and is enclosed by a cyclone fence.

The undeveloped parcel at the eastern edge of the project site consists of non-native grasses and ruderal species throughout, as well as a row of planted oak and ornamental trees that provides a partition between the undeveloped parcel and the industrially developed site. The undeveloped parcel is completely disturbed, evidenced by substrate consisting of gravel and other types of fill. A high wire pole and associated electrical box are located in the center of the undeveloped parcel, indicating that the site had previously been used as a storage facility of some sort.

(1) Vegetation. The developed portion of the project site, excluding the ranch house, is virtually devoid of any vegetation. As described above, the undeveloped parcel is dominated by non-native ruderal grasses and thistle. Other vegetation types on the project site include planted oaks and ornamental trees along the western edge of the undeveloped parcel, as well as an ornamental garden with exotic plants within the ranch house compound boundaries.

The non-native grasses and ruderal plants dominating the undeveloped parcel consist of wild oats (Avena sp.), ripgut brome (Bromus diandrus), wild radish (Raphanus sativus), Italian thistle (Carduus pycnocephalus), and yellow star thistle (Centaurea solstitialis). The majority of the vegetation was

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mowed prior to LSA’s survey and is expected to normally reach a height of over 2 feet. Other non-native species commonly occurring on the site or in patches include artichoke thistle (Cynara cardunculus), Bermuda grass (Cynodon dactylon), bindweed (Convolvulus arvensis), horseweed (Conyza canadensis), mallow (Malva nicaeensis), and prickly lettuce (Lactuca serriola). The only commonly occurring native species on the project site is willow herb (Epilobium brachycarpum).

The arborist report indicates there are 108 existing trees on the project site representing 33 native and non-native tree species varying in health from poor to excellent. The majority of the existing trees on the project site are located around the single-family residence and on the farthest east undeveloped parcel. Approximately 45 (or 42 percent) of the 108 trees are native, including Coast Live Oaks (29 trees), Coast Redwoods (7 trees), Giant Sequoia (1 tree), Monterey Cypress (6 trees), and Monterey Pines (2 trees). Of the 108 trees surveyed on the project site, 27 qualify for heritage tree status, in accordance with Municipal Code Section 114-32.

The ornamental garden surrounding the ranch house has numerous exotic flowering plants and shrubs. Several mature pine trees greater than 40 feet in height are also located in the residential compound area.

(2) Wildlife Values. Due to its disturbed nature, surrounding development activities, and the lack of any substantial vegetative cover, this site has very low value for native wildlife. Wildlife on the project site is limited and is characterized by those species that occur in ruderal grassy areas or in the canopy of trees, and those that have adapted to human-modified landscapes. The lack of suitable habitat and isolation from open space areas by means of infrastructure and other types of development surrounding the site greatly reduce the likelihood for wildlife to enter and occupy areas within the project boundary.

Mammals expected to be found in the undeveloped area include rodents such as meadow vole (Microtus californicus) and pocket gopher (Thomomys bottae). Additionally, a common reptile, the western fence lizard (Sceloporus occidentalis), was observed in the undeveloped parcel in small numbers.

Numerous scrub jays were found in and around the oaks on site, as well other types of passerine bird species. Two nests were observed in mature pine trees located within the ranch house gardens. The nests were unoccupied and did not appear large enough to support raptors.

Feral cats (Felis silvestris) [observed], raccoons (Procyon lotor), and rats (Rattus sp.) are expected to occupy the developed areas of the site. Various bat species also have the potential to occupy structures located in the developed area that offer adequate shelter. In addition, barn owls (Tyto alba) were reported as being seen occasionally by local workers in the developed area. However, no individuals or sign of the barn owls were observed during biological surveys.

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7 HortScience, Inc., 2005. Tree Report – Winton Jones Property, Concord, CA, June. Based on the follow-up site visit by an LSA biologist in July 2008, site conditions have not changed significantly since 2005, when the tree report was prepared.

8 Ibid.
(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 California Department of Fish and Game (CDFG) 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 September 2005. A July 2008 follow-up site visit by an LSA biologist verified that this finding is still accurate (See discussion of methods under subsection 1(a) above.).

(4) **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 federal Endangered Species Act.
- Species that are listed, or designated as candidates for listing, as rare, threatened, or endangered under the California Endangered Species Act.
- Plant species on List 1B and List 2 in the California Native Plant Society’s (CNPS) *Inventory of Rare and Endangered Vascular Plants of California.*
- Wildlife species listed by the California Department of Fish and Game (CDFG) 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 California Environmental Quality Act (CEQA) guidelines.
- Considered to be of special concern by local agencies.

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

**Plant Species.** A total of 12 special-status plant species were identified as having the potential to occur at or in the vicinity of the project site according to the CNDDB, as listed in Table IV.G-1, Special-Status Species That Potentially Occur On-Site. This table includes those species whose habitat and geographical range overlap that of the project site. This table does not, however, include any species whose habitat is not supported by the project site or whose geographic range excludes the project site, such as chapparal or saltmarsh areas, or habitats found only on high peaks such as Mt. Diablo. Table IV.G-1 includes consideration of species on California Native Plant Society (CNPS) lists.

It is unlikely that any of the plant species listed in Table IV.G-1 occur on the project site because the area has been highly disturbed and is not immediately surrounded by any open space or other areas in which sensitive species are likely to occur. In addition, the dominant non-native ruderal vegetation further reduces the likelihood of the occurrence of special-status plant species. The number of native plants growing in the undeveloped parcel was very low, and areas with a low diversity of native plant

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9 CNPS 2005, op. cit.
Table IV.G-1: Special-Status Plants That Potentially Occur On-Site

<table>
<thead>
<tr>
<th>Plant Species</th>
<th>Legal Status Federal/State/CNPS</th>
<th>Habitat</th>
<th>Potential for Occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bent-flowered fiddleneck Amsinckia lunaris</td>
<td>SC/--/1B</td>
<td>Grassland</td>
<td>Not present because of site disturbance</td>
</tr>
<tr>
<td>Big tarplant Blepharizonia plumosa ssp. plumose</td>
<td>SC/--/1B</td>
<td>Grassland</td>
<td>Not observed during surveys</td>
</tr>
<tr>
<td>Caper-fruitied tropidocarpum Tropidocarpum capparideum</td>
<td>SC/--/1B</td>
<td>Alkaline/Grassland</td>
<td>Not present because of site disturbance</td>
</tr>
<tr>
<td>Congdon’s tarplant Centromadia parryi ssp. congdonii</td>
<td>SC/--/1B</td>
<td>Alkaline/Wetlands/Grassland areas</td>
<td>Not observed during surveys</td>
</tr>
<tr>
<td>Contra Costa goldfields Lasthenia conjugens</td>
<td>FE/--/1B</td>
<td>Venal pools/seeps/Grassland</td>
<td>Not present because of site disturbance, lack of habitat</td>
</tr>
<tr>
<td>Fragrant fritillary Fritillaria liliacea</td>
<td>SC/--/1B</td>
<td>Grassland w Natives</td>
<td>Not present because of site disturbance</td>
</tr>
<tr>
<td>Large-flowered fiddleneck Amsinckia grandiflora</td>
<td>-FE/SE/1B</td>
<td>Grassland</td>
<td>Not present because of site disturbance</td>
</tr>
<tr>
<td>Oregon meconella Meconella oregana</td>
<td>SC/--/1B</td>
<td>Scrub/Grassland</td>
<td>Not present because of site disturbance</td>
</tr>
<tr>
<td>Oval-leaved viburnum Viburnum ellipticum</td>
<td>--/--/2</td>
<td>Scrub/Chaparral</td>
<td>Not observed during surveys</td>
</tr>
<tr>
<td>Rayless ragwort Senecio aphanactis</td>
<td>--/--/2</td>
<td>Chaparral/Woodland/Alkaline</td>
<td>Not present because of site disturbance</td>
</tr>
<tr>
<td>Robust monardella Monardella villosa ssp. globosa</td>
<td>SC/--/1B</td>
<td>Grassland/Scrub/Chaparral/Woodland areas</td>
<td>Not observed during surveys</td>
</tr>
<tr>
<td>Round-leaved fritillary Erodium macrophyllum</td>
<td>--/--/2</td>
<td>Sparse grassy areas</td>
<td>Not present because of site disturbance</td>
</tr>
</tbody>
</table>

Notes:
FE – Federally Endangered
SE – State Endangered
FT – Federally Threatened
ST – State Threatened
1A – Designation of plants presumed extinct by the California Native Plant Society (CNPS).
1B – CNPS designation of plants considered tare, threatened, or endangered in California and elsewhere
Source: CNDDB, 2005.

species, such as the project site, are unlikely to support special-status plants. Further, none of the listed species were observed during the field reconnaissance survey of the project site.

**Wildlife Species.** A total of eight special-status animal species were identified as having the potential to occur within the vicinity of the project site according to the CNDDB, as listed in Table IV.G-2. This table includes those species whose habitat and geographical range overlap that of the project site. As such, it does not list any fish species, wetland species, or woodland or chaparral species because habitats for those species do not occur at the proposed project site.

Five of the special status species listed in Table IV.G-2 could potentially occur on the undeveloped parcel only: Bridge’s coast range shoulderband snail (*Helminthoglypta nickliniana bridgesi*),
Table IV.G-2. Special-Status Animals That Potentially Occur On-Site

<table>
<thead>
<tr>
<th>Animal Species</th>
<th>Legal Status Federal/State</th>
<th>Habitat</th>
<th>Potential for Occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barn Owl (Tyto alba)</td>
<td>MBTA/CDFG Code</td>
<td>Roosting in trees Foraging in grassland</td>
<td>Potentially in structures in the developed portion of the site</td>
</tr>
<tr>
<td>Bridge’s coast range shoulderband snail (Helminthoglypta nickliniana bridgesi)</td>
<td>SC/--</td>
<td>Rock piles in grassland</td>
<td>Very unlikely because of disturbance</td>
</tr>
<tr>
<td>Burrowing owl (Athene cunicularia)</td>
<td>SC/SSC</td>
<td>Grassland</td>
<td>Not present due to lack of suitable burrows on site</td>
</tr>
<tr>
<td>Coast horned lizard (Phrynosoma coronatum)</td>
<td>--/SSC</td>
<td>Sparse grassland, sandy areas</td>
<td>Very unlikely because of disturbance</td>
</tr>
<tr>
<td>Cooper’s hawk (Accipiter cooperii)</td>
<td>--/SSC</td>
<td>Woodland</td>
<td>Unlikely because of lack of sufficient foraging area</td>
</tr>
<tr>
<td>Pallid bat (Antrozaos pallidus)</td>
<td>--/SSC</td>
<td>Caves, mine shafts, structures</td>
<td>Potentially in structures in the developed portion of the site</td>
</tr>
<tr>
<td>San Joaquin pocket mouse (Perognathus inornatus inornatus)</td>
<td>SC/--</td>
<td>Grassland</td>
<td>Very unlikely because of disturbance</td>
</tr>
<tr>
<td>Townsend’s big eared bat (Corynorhinus townsendii)</td>
<td>--/SSC</td>
<td>Caves, mine shafts, structures</td>
<td>Potentially in structures in the developed portion of the site</td>
</tr>
</tbody>
</table>

Notes:
FE – Federally Endangered  SE – State Endangered
FT – Federally Threatened  ST – State Threatened
SC – Federal Species of Concern  SSC – State Species of Special Concern
FP – State Fully Protected  MBTA – Federal Migratory Bird Treaty Act
CDFG Code – California Fish and Game Code (Sections 3503 and 3505)

Source: CNDDB, 2005.

Burrowing owl (Athene cunicularia), coast horned lizard (Phrynosoma coronatum), Cooper’s hawk (Accipiter cooperii), and San Joaquin pocket mouse (Perognathus inornatus inornatus).

Because of the disturbed nature of the site, its geographic isolation from open space areas, and the lack of general habitat for these species, the potential for occurrence of these five special status species is extremely low.

The project site does, however, provide habitat that could support the Barn Owl (Tyto alba), Pallid bat (Antrozoas pallidus), and Townsend’s big eared bat (Corynorhinus townsendii). None of these special-status species were observed by the LSA biologist while completing the field reconnaissance of the project site in September 2005 or during the July 2008 follow-up site visit. Their occurrence is unlikely, although these species could colonize on the proposed project site in the future.

2. Impacts and Mitigation Measures

This section outlines biological resource impacts that may result from implementation of the proposed project, and mitigation measures, as necessary.

a. Criteria for Significance. The proposed project would have a significant impact on biological resources if it would:
Substantially diminish habitat for protected fish, wildlife, or plants or have a substantial adverse effect on a protected plant or animal community;

Substantially affect a rare, threatened, or endangered plant or animal species (including those species that meet the definition of rare and endangered according to CEQA), or the habitat of such species;

Interfere substantially with the movement of any resident or migratory fish or wildlife species or wildlife corridors;

Cause a fish or wildlife population to drop below self-sustaining levels;

Create runoff that would significantly impact wildlife habitat; or

Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

b. Less-Than-Significant Biological Resource Impacts. 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 site is bordered on all sides by habitat that is not conducive to terrestrial wildlife movement (i.e., streets and freeways to the south, industrial developments to the north and west, and a fenced cemetery to the east). As such, wildlife movement through the site is not substantial. 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.

c. Significant Biological Resource Impacts. This section describes potential impacts to biological resources that are likely to occur within the project site.

Impact BIO-1: The proposed project could affect protected or special-status species, including barn owls, raptors, and two bat species, should they colonize the site prior to construction. (S)

A number of species of native bats including two special-status bat species, the Pallid bat and Townsend’s big-eared bat, and protected species of birds, including barn owls and raptors (for example, Cooper’s hawk), have the potential to occupy habitat located within the site, although none were observed during the site survey. These species may colonize habitat such as structures or trees on the site prior to demolition. Dismantling or removal of the habitat and project construction on the site could result in impacts on these species, including harm or injury to bats or birds (e.g., barn owls or raptors) that may colonize the area prior to development. Implementation of the following two-part mitigation measure would reduce the potential impact to a less-than-significant level.

Mitigation Measure BIO-1a: A preconstruction survey shall be conducted for bats and native protected species of birds (including barn owls) prior to the dismantling and/or destruction of any structures or removal of trees located on the project site. Such surveys should be carried out by a qualified biologist retained by the project applicant. For a bat maternal colony, humane eviction by a qualified bat excluder could occur between September 1 and the middle of October. The bat excluder should be supervised and monitored by a qualified bat biologist. Relocation must occur in a passive manner, such that “take” of bats would not occur. For a bat maternal roost, the best approach is humane eviction by a qualified bat excluder.10 Humane

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10 Names are available through batcon.org and batmam@aol.com.
eviction would occur between September 1 and the middle of October. The maternal roost colony would remain undisturbed prior to August. For protected species of birds, the nest would remain undisturbed until the young have fledged. A qualified biologist would determine whether the young have fledged during a survey. The California Department of Fish and Game (CDFG) must be consulted prior to relocation, if take of bats and birds cannot be avoided and the United States Fish and Wildlife Service (USFWS) should be consulted if take of birds cannot be avoided. Preconstruction surveys should occur every 60 days until the demolition of all of the structures on-site is completed. If preconstruction surveys indicate that special-status bats or birds are not likely to use the structures or trees, then preconstruction surveys can cease. If preconstruction surveys indicate the likely use of a structure or tree prior to demolition or destruction, then a preconstruction survey shall be completed within 20 days of demolition or destruction.

Mitigation Measure BIO-1b: Tree removal should be timed to avoid the nesting season of protected or special-status raptors and other species of birds (February through August). If tree removal or construction, grading, or other project-related improvements are scheduled during this nesting season, the project applicant shall provide a focused survey for active nests of such raptors and other species of birds conducted by a qualified biologist retained by the project applicant within 15 days prior to the beginning of project-related activities. If protected species of raptors are found nesting, a buffer should be established around the nest and, in the case of hawks and owls, the buffer should provide a minimum radius of 300 feet unless the raptor biologist can demonstrate the sufficiency of a less extensive buffer. The buffer area should be fenced and avoided until the young have fledged (determined by a qualified biologist). If a lapse in project-related work of 15 days or longer occurs, another focused survey will be required before project work can be reinitiated. If a newly constructed nest with eggs is present then a buffer should be established around the nest and construction should avoid the buffer area until the young have fledged. (LTS)

Impact BIO-2: The proposed project would result in the removal of 27 heritage trees. (S)

All 108 existing trees on the project site, including the 27 heritage trees, would be removed as a part of the project. The project proposes to replace the removed trees with over 500 new trees dispersed throughout the site.

Concord Municipal Code Section 114 (Heritage Tree Ordinance) requires a permit for removal of heritage trees that are greater than 24 inches in diameter. The Planning Commission evaluates the requests for the removal of heritage 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.

The City of Concord’s Heritage Tree Ordinance establishes what constitutes an environmental impact in regards to tree removal in the City of Concord. According to the Section 114 of the Municipal Code, an environmental impact would occur if heritage trees are removed from a site. The Ordinance does not differentiate between native and non-native plant species. Since the proposed project would result in the removal of 27 heritage trees, the project would have a significant environmental impact. However, implementation of the following mitigation measure would reduce the tree removal impact to a less-than-significant level.
Mitigation Measure BIO-2: To satisfy General Plan tree preservation policies and Municipal Code Section 114-67(a), Heritage Trees, any heritage tree lost or removed due to the proposed project shall be replaced by a native tree at a ratio of 3:1 (replacement:removed). (LTS)
H. HYDROLOGY AND STORM DRAINAGE

This section describes the existing hydrological setting for the project site, including runoff, drainage, and water quality, based on available information included with the application, review of environmental investigation reports and other published materials, and a site reconnaissance conducted in September 2005. No changes in conditions at the project site have occurred since 2005 that would alter the site reconnaissance conclusions. This section identifies potential impacts related to hydrology and storm drainage that may result from project development and suggests mitigation measures to reduce potential impacts.

1. Setting

A description of the existing conditions related to hydrology and storm drainage is provided below. Because the hydrological and storm drainage setting is fundamentally integrated with its regulatory context, both of these topics are described comprehensively in this section for clearer understanding of this subject matter.

a. Climate. The climate of the Bay Area is characterized as dry-summer subtropical (often referred to as Mediterranean), with cool wet winters and relatively warm dry summers. The mean annual rainfall in the vicinity of the project site is approximately 16 inches,1 with the vast majority of rainfall between October and May.2 Analysis of long-term precipitation records indicates that wetter and drier cycles lasting several years are common in this region.

b. Runoff and Drainage. The topography of the area consists of relatively flat but gently south-west-sloping lowlands ranging in elevation from about 28 to 50 feet above mean sea level.3,4 There are no natural creeks or streams crossing the site. Based on observations made during the September 2005 site reconnaissance, it does not appear that there are any established drainage channels or conveyances within the site interior. A shallow swale was observed oriented in a north-south direction between the developed area and undeveloped parcel in the eastern portion of the site that may convey some runoff during storms. No water was observed in this swale during the site reconnaissance. The site drains primarily by overland sheetflow toward the southwest. Curbs and storm drain inlets were observed at the southeastern site boundary along Arnold Industrial Way.

The site is largely covered with pavement and/or compacted soils. The largest unpaved areas are located around the residence in the site’s northeast corner and the undeveloped area in the eastern portion of the project site. Runoff from the site eventually enters the tidally influenced Pacheco Creek, which leads to Suisun Bay near the entrance to the Carquinez Strait.

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2 Western Regional Climate Center, 2007. Website: http://www.wrcc.dri.edu/.
c. **Flooding.** The project site is not located within the 100-year flood hazard zone, as mapped by the Federal Emergency Management Agency (FEMA).⁵ Areas within the 100-year flood zone would be expected to be flooded, on average, once every 100 years, but can flood more frequently. The project site is not located in any mapped dam failure inundation zones.⁶ The Mallard Reservoir, located approximately ½-mile north of the project site, is not identified by Association of Bay Area Governments (ABAG) hazard mapping or the City’s General Plan⁷ as a dam failure inundation hazard zone. Based on the distance from the project site to Suisun Bay (approximately 3.1 miles) and the elevation of the site (ranging from about 28 to 50 feet above mean sea level), coastal hazards such as tsunamis, extreme high tides, seiche, and sea level rise would not be hazards of concern.

d. **Water Quality.** The quality of surface water and groundwater in the vicinity of the project site is affected by past and current land uses at the site and within the watershed, and the composition of geologic materials in the vicinity. Water quality in surface and groundwater bodies is regulated by the State Water Resources Control Board and Regional Water Quality Control Boards. The project site is under the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (Water Board), which is responsible for implementation of State and federal water quality protection guidelines in the Bay Area. The Water Board implements the Water Quality Control Plan (Basin Plan),⁸ a policy document for managing water quality issues in the region. The Basin Plan establishes beneficial water uses for waterways and water bodies within the region.

Two aspects of water quality are described in greater detail below: stormwater quality and groundwater quality.

**(1) Stormwater Quality.** The National Pollutant Discharge Elimination System (NPDES) program (established through the Clean Water Act) regulates runoff water quality; the NPDES program objective is to control and reduce pollutants to water bodies from surface water discharges. Locally, the NPDES program is administered by the Water Board, which has conveyed responsibility for implementation of stormwater regulations in the vicinity of the project site to the Contra Costa Clean Water Program (CCCWP) by issuing a NPDES permit covering all participating agencies within the County, including the City of Concord.⁹ Compliance with the NPDES permit is mandated by State and federal statutes and regulations. The Water Board is in the process of reissuing the region’s individual Phase I¹⁰ permits as a single region-wide permit for the four major urban counties of Alameda, Contra Costa, Santa Clara, and San Mateo, and including the cities of Fairfield, Suisun

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⁵ Federal Emergency Management Agency (FEMA), 1987. Flood Insurance Rate Map (FIRM), Contra Costa County, California, Community Panel Numbers 060025 0095B, July 16. (Note: This is the FIRM that covers the site. The site is now located within the City of Concord. At the time the FIRMs were prepared, the site was in the unincorporated County area).


⁷ City of Concord, 2008. *City of Concord 2030 Urban Area General Plan*.


¹⁰ Under the U.S. Environmental Protection Agency NPDES implementation, municipal stormwater programs have been regulated in two groups: medium and large municipal or area storm drainage systems with populations of 100,000 or more (“Phase I”) and smaller municipalities (“Phase II”).
City and Vallejo in a Municipal Regional Permit. The reissued permit likely will include revisions that require more stringent water quality protection protocols. The Water Board anticipates that the permit will be considered for adoption in the fall of 2008.

**NPDES Permit Provisions.** CCCWP participating agencies, including the City of Concord, must comply with the provisions of the NPDES permit by ensuring that new development and redevelopment mitigate, to the maximum extent practicable, water quality impacts on stormwater runoff both during construction and operational periods of projects. Requirements of the permit held by the CCCWP are detailed in Water Board Order R2-2003-0022 (NPDES Permit No. CAS0029912). Revisions set forth in that document that potentially apply to the proposed project include Provision C.3. As of August 15, 2006, all new development and significant redevelopment projects that create or replace 10,000 square feet or more of impervious surface are subject to Provision C.3 of the Water Board order. The C.3 requirements are separate from, and in addition to, requirements for erosion and sediment control and for pollution prevention measures during construction (see discussion of the Construction General Permit, below). The C.3 provisions direct that project site designs minimize the impervious areas and maximize pervious surfaces and paving so that runoff can percolate to the underlying soil. Runoff from impervious areas must be treated prior to discharge from the site. Projects that increase the amount of impervious surfaces are required to detain or infiltrate runoff so that peak flows and durations match pre-project conditions. In addition, project applicants must prepare plans and execute agreements to ensure the stormwater treatment and flow-control facilities are maintained in perpetuity.

The proposed project would be required to meet all the terms of the permit, including, but not limited to:

- **Numeric Sizing Criteria for Pollutant Removal Treatment Systems.** The project must include source controls, design measures, and treatment controls to minimize storm water pollutant discharges. Treatment controls must be sized to treat a specific amount – about 85 percent – of average annual runoff.

- **Operation and Maintenance of Treatment Measures.** Treatment controls often do not work unless adequately maintained. The permit requires an operations and maintenance (O&M) program.

- **Limitation on Increase of Peak Storm Water Runoff Discharge Rates.** Urbanization creates impervious surfaces that reduce the landscape’s natural ability to absorb water and release it slowly to creeks. These impervious surfaces increase peak flows in creeks and can cause erosion. Projects must evaluate the potential for this to occur and provide mitigation, as necessary.

**Construction General Permit.** In addition, projects disturbing more than 1 acre of land during construction are required to file a Notice of Intent (NOI) with the Water Board to be covered under the State NPDES Construction General Permit for discharges of stormwater associated with construction activity.\(^{11}\) A developer must implement control measures that are consistent with the

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\(^{11}\) The State Water Resources Control Board, Water Quality Order 99-08-DWQ, National Pollutant Discharge Elimination System (NPDES), General Permit for Storm Water Discharges Associated with Construction Activity (General Permit) states that: The regulations provide that discharges of stormwater to waters of the United States from construction projects that encompass five or more acres of soil disturbance are effectively prohibited unless the discharge is in compliance with an NPDES Permit. Regulations (Phase II Rule) that became final on December 8, 1999 expand the existing NPDES program to address stormwater discharges from construction sites that disturb land equal to or greater than 1 acre.
State General Permit. A Storm Water Pollution Prevention Plan (SWPPP) must be developed and implemented for each site covered by the general permit. A SWPPP should include Best Management Practices (BMPs) designed to reduce potential impacts to surface water quality during the construction of the project.

(2) Groundwater Quality. The project site overlies the Clayton Valley Groundwater Basin, which is bounded by Suisun Bay on the north, Mount Diablo Creek on the east, the Concord Fault on the west, and the foothills of Mount Diablo on the south. The Clayton Valley is underlain by thick alluvial deposits. The combined thickness of these deposits exceeds 700 feet. Aquifers in the basin area are hydrologically connected to Suisun Bay. There are limited data regarding the occurrence and movement of groundwater in the basin. Based on water level measurements from wells in the vicinity of the project site, the depth to groundwater varies from approximately five feet below ground surface (bgs) to 20 feet bgs.

Several site assessments, including soil borings, were done at the site as part of a soil and groundwater quality investigation. The purpose of the investigation was to determine whether past land uses, including but not limited to operation of underground fuel tanks and an oil-water separator, an auto wrecking yard, and usage and storage of hazardous materials by several tenants, resulted in impacts on soil and groundwater quality. The results of the investigation associated with impacts on soil and groundwater quality are discussed in Section IV.J, Public Health and Safety/Hazardous Materials, of this EIR. During drilling of the borings, groundwater was encountered at depths ranging from 20 to 38 feet below the ground surface. Stabilized groundwater levels reached a depth of 17 feet in some wells, indicating the groundwater occurs under confined or semi-confined conditions.

Water quality information for the Clayton Valley Groundwater Basin is limited. Historic measurements of total dissolved solids (TDS) values in eight wells in the basin ranged from 328 milligrams per liter (mg/L) to 864 mg/L and averaged 472 mg/L. These TDS concentrations are near and/or above the US Environmental Protection Agency (US EPA) Secondary Maximum Contaminant Level of 500 mg/l, and therefore groundwater in the area may not represent a potential source of drinking water.

During the September 2005 site reconnaissance, one water supply well and associated pressurized storage tank was observed in the central portion of the site. It was subsequently learned that this on-site well is reportedly used as the primary drinking water source for the site businesses and the

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13 Ibid.
16 Ibid.
municipal water supply is used as a back-up water source. Samples from the on-site water supply well described in the 2004 Soil and Groundwater Assessment Report were analyzed for petroleum hydrocarbons, metals, VOCs, pesticides, and herbicides. The only compound that exceeded Environmental Screening Levels in the groundwater sample from the on-site well was copper at 11 parts per billion (ppb), which was still well below the California Department of Health Services Maximum Contaminant Level for drinking water of 1,000 ppb. Ground water conditions are discussed in more detail in Section IV.J, Public Health and Safety/Hazardous Materials, of this EIR.

e. Concord General Plan. Concord General Plan policies related to hydrology and water quality are listed and discussed in Table IV.A-1 in Section IV.A, Land Use and Planning Policy.

f. City of Concord Municipal Code. The City of Concord Municipal Code contains the following provisions related to hydrology and storm drainage.20

(1) Chapter 34 – Flood Management. The Federal National Flood Insurance Act of 1968 allows persons in floodplain areas of a community to purchase flood insurance at reduced rates. In order for such rates to be available within a community, the community must make provision for regulating development and land uses in accordance with applicable federal requirements. The purpose and intent of Chapter 34 is to identify special hazard areas in the city that are prone to flooding and to impose requirements on development and uses within such areas in accordance with applicable federal requirements. The areas of special flood hazard are identified by the Federal Insurance Administration based on scientific and engineering Flood Insurance Studies and the accompanying flood insurance rate maps (FIRM)21 prepared by FEMA. The appropriate studies and accompanying FIRMs are adopted by reference and declared to be a part of Chapter 34.

(2) Chapter 86 – Stormwater Management and Grading and Erosion Control. The intent of Chapter 86 is to protect and enhance the water quality in the city’s watercourses pursuant to, and consistent with the Porter-Cologne Water Quality Control Act (Water Code section 13000 et seq.) and the Federal Clean Water Act (33 U.S.C section 1251 et seq.). This chapter also carries out the conditions in the City's National Pollutant Discharge Elimination System (NPDES) permit that require, effective February 15, 2005, implementation of appropriate source control and site design measures and stormwater treatment measures for projects that create or replace one acre or more of impervious surface, and that, effective August 15, 2006, reduce the threshold to projects that create or replace 10,000 square feet or more of impervious surface.

2. Impacts and Mitigation Measures

This subsection analyzes the impacts related to hydrology and water quality that could result from the project. The subsection begins with criteria of significance, which establish the thresholds for deter-

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19 Maximum Contaminant Levels (MCLs) are State drinking water standards, and are therefore assumed to be protective of human health regardless of the type of exposure (e.g. ingestion, dermal contact, etc.).
21 Federal Emergency Management Agency (FEMA), 2003, Flood Insurance Study, Contra Costa County, Unincorporated Areas, 2 volumes. 2 December. (Note: This is the FIRM that covers the site. The site is now located within the City of Concord. At the time the FIRMs were prepared, the site was in the unincorporated County area).
mining whether a project impact is significant. The latter part of this section presents the potential hydrology and storm drainage impacts associated with the proposed project. Mitigation measures are provided as appropriate.

a. **Criteria of Significance.** The proposed project would result in significant flooding, hydrologic, water quality, or storm drainage impacts if it would have any of the following effects:

- Violate any water quality standards or waste discharge requirements;
- Substantially degrade groundwater quality or decrease the volume of groundwater;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a significant net deficit in aquifer volume or a lowering of the local groundwater table level or alteration of the flow of groundwater;
- Increase the risk of accidental surface water or groundwater contamination, or substantially degrade water quality;
- Substantially degrade water quality of Concord streams, wetlands, and the Suisun Bay through pollutant discharges, physical or chemical changes of water bodies, or increased erosion and sedimentation;
- Create or contribute runoff water of a quantity or volume that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff or would result in flooding on-site or off-site;
- Substantially alter the existing drainage pattern of the site or area, including alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite;
- 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 significant risk of inundation by seiche, tsunami, extreme high tides, and/or sea level rise.

b. **Less-than-Significant Impacts.** Implementation of the proposed project is not expected to contribute to depletion of groundwater supplies because the proposed project would not use groundwater underlying the site (whereas under the existing condition, the primary water supply is local groundwater). The project proposes that the existing groundwater well on the project site be properly abandoned. The project also proposes to install a new 8-inch water main on the site with connections to the public water mains in Arnold Industrial Way to provide adequate fire protection water flow and potable water for the proposed development. It is expected that the discontinued use of the on-site groundwater supply well and the infiltration resulting from stormwater treatment BMPs would more than compensate for any local loss in on-site groundwater recharge due to reconfigured, replaced, or improved impervious surfaces. The project’s effect on groundwater supplies would therefore represent a less-than-significant impact.

According to the most recent FEMA mapping, the site is not located within the 100-year flood hazard zone. No placement of housing or other structures in a flood hazard zone would be expected to

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occur under the proposed project. The project site is not located in any mapped dam failure inundation zones. The project site is roughly 3.1 miles from Suisun Bay and is located at between 25 and 40 feet above mean sea level; therefore coastal hazards such as extreme high tides, tsunamis, seiche, or sea level rise would not represent significant impacts. No natural watercourses are located on the site; implementation of the proposed project would not result in the substantial alteration an existing drainage pattern of the site or area, including alteration of the course of a stream or river, in such a manner that would result in substantial erosion or siltation on-site or off-site. Flood hazards would therefore represent a less-than-significant impact.

Concord General Plan Policy S-4.1.2 requires that all drainage facilities have “adequate capacity to contain, with sufficient freeboard, projected runoff from the ‘design flood,’ a 50-year flood for major facilities, a 25-year flood for secondary facilities, and a 10-year flood for minor facilities.” The project site is not located within a FEMA floodplain and would include design and construction of only “minor” conveyance facilities on-site. Under the City’s existing plan review process, the project’s conveyance facilities would be reviewed and would be approved only if they comply with established City design requirements. Any project-related minor drainage facilities would thus be constructed in compliance with existing standard City requirements. Therefore, the potential for the project to construct and operate undersized drainage facilities would be less than significant, and no mitigation is needed.

c. Significant Impacts. The following significant impacts associated with the project have been identified.

Impact HYD-1: Construction activities could result in degradation of water quality in Suisun Bay by reducing the quality of stormwater runoff. (S)

Projects disturbing more than 1 acre of land during construction are required to file a Notice of Intent (NOI) with the Water Board to be covered under the State NPDES Construction General Permit for discharges of stormwater associated with construction activity. A developer must propose control measures that are consistent with the State Construction General Permit. A Storm Water Pollution Prevention Plan (SWPPP) must be developed and implemented for each site covered by the general permit. A SWPPP is required to include Best Management Practices (BMPs) designed to reduce potential impacts on surface water quality during the construction of the project.

The project site runoff eventually enters Suisun Bay, a water body that is listed as impaired by the Water Board. The Water Board has designated Suisun Bay as water quality-impaired for several pesticides (chlordane, DDT, and dieldrin), dioxin compounds, exotic species, furan compounds, mercury, nickel, PCBs, and selenium. If there is a chance that a project would increase the load of any of these pollutants discharged to the Suisun Bay, then a significant impact would be expected to

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occur. (The Water Board has determined that the assimilative capacity\textsuperscript{26} of Suisun Bay for these pollutants has already been exceeded.)

Most of the contaminants that have been identified as causing the water quality impairment are unlikely to be used at the site. Each of the pesticides (chlordane, DDT, and dieldrin) has been banned and is therefore not available for legal use at the project site. The source of the dioxin and furan compounds has been identified as atmospheric deposition. Atmospheric deposition can occur either as particulate (dust) matter settling out of the atmosphere under gravity, or during precipitation events, where precipitation captures particulates while falling. The proposed project would not alter the rate of atmospheric deposition, as it will not alter rates of rainfall or particulate fallout and therefore would not change the current loading rate of these compounds. The proposed project would not introduce exotic species to the bay or increase the impact of existing exotic species. PCBs, nickel, and mercury would not be used at the site and therefore discharges of these contaminants would not result from the project. The selenium impairment has been caused by industrial point sources, agriculture, natural sources, and exotic species. None of these uses is proposed for the project site.

Construction and grading on the project site would require temporary disturbance of surface soils. As discussed in Section IV.J, Public Health and Safety/Hazardous Materials, of this EIR, the project site has been subject to previous investigations for soil and groundwater contamination. Residual pollutants may occur in surface soils. During the construction period, grading and excavation activities would result in exposure of soil to runoff, potentially causing erosion and entrainment of sediment and contaminants in the runoff. Soil stockpiles and excavated areas on the project site would be exposed to runoff and, if not managed properly, the runoff could cause erosion and increased sedimentation and pollutants in stormwater. The potential for chemical releases is present at most construction sites given the types of materials used, including fuels, oils, paints, and solvents. Once released, these substances could be transported to Suisun Bay in stormwater runoff, wash water, and dust control water, potentially reducing water quality.

Mitigation Measure HYD-1a: For each phase of the proposed project, the project applicant shall prepare a Storm Water Pollution Prevention Plan (SWPPP) in compliance with the terms of the State Construction General Permit. The SWPPP shall be reviewed and approved by City staff prior to the issuance of building permits to ensure it has been designed to reduce potential impacts to surface water quality through the construction period of the project. The SWPPP must be maintained on-site and made available to City inspectors and/or Water Board staff upon request. The SWPPP shall include specific and detailed Best Management Practices (BMPs) designed to mitigate construction-related pollutants. At minimum, BMPs shall include practices to minimize the contact of construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives) with storm water. The SWPPP shall specify properly designed centralized storage areas that keep these materials out of the rain.

Mitigation Measure HYD-1b: An important component of the stormwater quality protection effort is the knowledge of the site supervisors and workers. To educate on-site personnel and maintain awareness of the importance of stormwater quality protection, site supervisors shall conduct regular tailgate meetings to discuss pollution prevention during each phase of the project.

\textsuperscript{26} The assimilative capacity is the amount of a pollutant a waterbody can receive without exceeding water quality standards.
project. The frequency of the meetings and required personnel attendance list shall be specified in the SWPPP.

**Mitigation Measure HYD-1c:** The SWPPP prepared for each phase of the project shall specify a monitoring program to be implemented by the construction site supervisor. The program must include both dry and wet weather inspections. In addition, in accordance with State Water Resources Control Board Resolution No. 2001-046, monitoring will be required during the construction period for pollutants that may be present in the runoff that are “not visually detectable in runoff.” Water Board and/or City personnel, who may make unannounced site inspections, are empowered to levy considerable fines if it is determined that the SWPPP has not been properly prepared and implemented.

**Mitigation Measure HYD-1d:** BMPs designed to reduce erosion of exposed soil may include, but are not limited to, soil stabilization controls, watering for dust control, perimeter silt fences, placement of fiber rolls, and sediment basins. These BMPs shall be implemented during construction of each phase of the proposed project. The potential for erosion is generally increased if grading is performed during the rainy season as disturbed soil can be exposed to rainfall and storm runoff. If grading must be conducted during the rainy season, the primary BMPs selected shall focus on erosion control (i.e., keeping sediment on the site). End-of-pipe sediment control measures (e.g., basins and traps) shall be used only as secondary measures. Entry and egress from the construction site shall be carefully controlled to minimize off-site tracking of sediment. Vehicle and equipment wash-down facilities shall be designed to be accessible and functional during both dry and wet conditions.

For each phase of the project, City staff shall review and approve the SWPPP prior to approval of the grading plan. Implementation of this mitigation would reduce this impact to a less-than-significant level. (LTS)

**Impact HYD-2:** Operation of the project could result in discharge of pollutants and increase the rate and volume of stormwater discharges, causing degradation to the quality of receiving waters. (S)

The applicant anticipates that the proposed project would be constructed in two phases. Phase 1 would consist of development of the Lowe's store site (parcel 1 of 13.20 acres) and on- and off-site improvements. On-site improvements would include the Lowe's building, parking, landscaping, and driveways designed to support the shopping center. Off-site improvements would include widening and various improvements to Arnold Industrial Way. Phase 2 would consist of construction of the future retail anchor tenant building (parcel 4 of 13.00 acres) and the two retail/restaurant tenant pads

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28 Construction materials and compounds that are not stored in water-tight containers under a water-tight roof or inside a building are examples of materials for which the discharger may have to implement sampling and analysis procedures.

29 All parcel sizes in net acreage after right-of-way dedications.
(parcel 2 of 1.11 acres and parcel 3 of 0.52 acres). The applicant anticipates that Phase 1 construction would begin in 2009 and Phase 2 construction would begin in 2010.30

New construction and intensified land uses at the project site would result in increased vehicle use and potential discharge of associated pollutants to the ground and surface runoff. Increased numbers of vehicles and outdoor parking facilities at the project site would result in increased leaks of fuel, lubricants, tire wear, and fallout from exhaust, which will contribute petroleum hydrocarbons, heavy metals, and sediment to the pollutant load in runoff being transported to receiving waters.31 Runoff from landscaped areas at the site may contain residual pesticides and nutrients. The increase in the number of people using the site may result in additional trash, debris, and spills being deposited on the site and becoming entrained in stormwater runoff. Long-term degradation of water quality in runoff from the site could affect local water quality in Suisun Bay. The effect on water quality would represent a potentially significant impact.

Alteration of drainage patterns from the site could result in hydromodification impacts to downstream creeks. Hydromodification is defined as the alteration of the hydrologic characteristics of creeks and streams that could cause degradation of water resources. In the case of a stream channel, this is the process whereby a stream bank is eroded by flowing water. This condition typically results in the suspension of sediments in the creek.

Provision C.3.f of the County NPDES Permit specifies the enhanced requirements for limiting “the increase of peak storm water runoff rates.” Provision C.3.f.i states that, for projects that increase impervious surfaces:

The Dischargers shall manage increases in peak runoff flow and increased runoff volume, for all Group 1 Projects [projects greater than one acre], where such increased flow and/or volume is likely to cause increased erosion of creek beds and banks, silt pollutant generation, or other waterbody impacts to beneficial uses due to increased erosive force. Such management shall be through implementation of a Hydrograph Modification Management Plan (HMP). The HMP, once approved by the Regional Board, will be implemented so that post-project runoff shall not exceed estimated pre-project rates and/or durations, where the increased stormwater discharge rates and/or durations will result in increased potential for erosion or other significant adverse impacts to beneficial uses, attributable to changes in the amount and timing of runoff. The term duration in this Provision is defined as the period that flows are above a threshold that causes significant sediment transport and may cause excessive erosion damage to creeks and streams.

The Contra Costa Countywide Clean Water Program has prepared and submitted a final HMP and the HMP has been approved by the Water Board.

The potential impacts on downstream flooding and hydromodification resulting from the proposed development are considered potentially significant impacts. The project applicant has provided Storm Water Quality Control Plans and Reports (SWQCPs) for the proposed project that were reviewed

Note:
30 Cremin, Tim, 2008, e-mail communication to LSA, Meyers Nave Law Firm, May 23.
31 Receiving Waters: All distinct bodies of water that receive runoff or wastewater discharges, such as streams, rivers, ponds, lakes, and estuaries.
during preparation of this EIR.\(^{32,33}\) In addition, the applicant and City, in consultation with the Water Board, have selected to implement the stormwater management strategies at the site in two SWQCP plans matching the two proposed development cycles for the project, and reflecting characteristics of the hydrology of the site. These SWQCPs include preliminary design for stormwater drainage facilities and treatment measures. The two proposed phases would be developed with two separate storm drain systems. Each SWQCP includes proposed stormwater Integrated Management Practices (IMPs)\(^{34}\) for each phase of approximately 1 acre consisting of bioswales, bio-retention basins, and landscaping.

Since Phase 1 of the project proposes to decrease impervious area and implement treatment control IMPs hydromodification impacts for the Phase 1 area would not occur. For the Phase 2 area, the proposed storm drain system would be designed to detain stormwater so as to match the pre-project runoff conditions.\(^{35}\) Based on the City's review of the SWQCPs, consultation with City staff, and review of email correspondence from the City's Building, Engineering, and Neighborhood Services, Current Development Division, it has been determined that the approach proposed by the applicant to address potential hydromodification impacts is appropriate.\(^{36}\) Specifically, the applicant proposes to reduce the amount of impervious cover at Parcels 1 (the Lowe's site), 2 and 3, and would therefore implement only treatment control IMPs (since no hydromodification impacts would be associated with a decrease in impervious cover). However, at Parcel 4 (the Major 2 site), a net increase in impervious cover would occur and therefore treatment and flow control IMPs would be required. The City has determined, in consultation with CCCWP staff, that this approach is consistent with the intent of the C.3 requirements. The final drainage plans will be subject to review by the City's Building, Engineering, and Neighborhood Services, Current Development Division to ensure that all IMPs are sized correctly and drainage components are in full compliance with City standards.

**Mitigation Measure HYD-2a:** The City shall review and approve the site-specific SWQCPs prior to approval of the grading plan. The SWQCPs shall comply with all applicable regulations for stormwater treatment and flow control (to address potential hydromodification impacts), including C-3 provisions.

**Mitigation Measure HYD-2b:** Provision C.3.e requires municipalities to verify operation and maintenance of facilities installed in their jurisdictions. As a condition of project approval, a maintenance agreement to be executed or a permit to operate the stormwater facilities shall be obtained. In either case, the City will require an annual fee to offset the cost of inspecting the facilities.


\(^{34}\) From the CCCWP C.3 Guidebook. IMPs are facility stormwater Best Management Practices that provide small-scale treatment, retention, or detention and are integrated into site layout, landscaping and drainage design. IMPs are generally part of a Low Impact Development (LID) site design methodology intended to replicate pre-existing site hydrological conditions.

\(^{35}\) Bell, Libbey, 2008, Public Works Engineer III, Building, Engineering, and Neighborhood Services, Current Development Division, City of Concord, email correspondence to Frank Abejo, Senior Planner, City of Concord May 19.
Implementation of this mitigation would reduce this impact to a less-than-significant level. (LTS)

Impact HYD-3: Water supply well(s) at the project site, if not properly decommissioned, could be damaged during construction, potentially causing impacts on groundwater quality. (S)

There is at least one water supply well located at the project site. Additional wells may be discovered during site preparation and demolition. If the sanitary seal(s) associated with the well(s) have been damaged since installation, or were to be damaged during grading and construction, surface water (potentially containing pollutants) could seep into the well(s) and the underlying aquifer, causing water quality degradation. In addition, it is possible that the water supply well(s) were not fitted with a proper seal when installed. The project applicant has proposed that the existing groundwater well(s) on the project site be decommissioned and properly abandoned.

One well was identified in the 2008 Phase I Environmental Site Assessment and the 2008 Soil and Groundwater Report submitted to the Water Board. For protection of hydrology and water quality, documentation that the known domestic water supply well at the property has been properly abandoned is required. If other wells are discovered on the site, potential impacts will be addressed by the below mitigation measure.

Mitigation Measure HYD-3: Prior to the issuance of occupancy permits, the existing wells shall be properly abandoned and documented as such in compliance with the requirements of Contra Costa County Department of Environmental Health and California Department of Water Resources, California Well Standards.

Prior to issuance of occupancy permits, any additional wells that may be discovered during site preparation shall either be:

1) Properly abandoned and documented as such in compliance with the requirements of Contra Costa County Department of Environmental Health and California Department of Water Resources, California Well Standards; or

2) Inspected by a qualified professional to determine whether the well is properly sealed at the surface to prevent infiltration of water-borne contaminants into the well casing or surrounding gravel pack. The California Well Standards require an annular surface seal of at least 20 feet for water supply wells. If any of the wells are found not to comply with this requirement, the applicant shall retain a qualified well driller to install the required seal.

Implementation of this mitigation would reduce this impact to a less-than-significant level. (LTS)
IV. 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 Lowe’s Shopping Center project and, as such, constitutes the major portion of the Draft EIR. Sections A through K of this chapter describe the environmental setting of the proposed project area as it relates to each specific issue. The impacts resulting from implementation of the proposed project and mitigation measures that would reduce 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, such as the City of Concord General Plan.

1. Issues Addressed in the Draft EIR

The following environmental issues are addressed in this chapter:

A. Land Use and Policy Planning
B. Transportation and Circulation
C. Air Quality
D. Noise
E. Cultural and Paleontological Resources
F. Geology, Soils and Seismicity
G. Biological Resources
H. Hydrology and Storm Drainage
I. Public Services and Utilities
J. Public Health and Safety/Hazardous Materials
K. Urban Decay
L. Global Climate Change

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

¹ Public Resources Code 21068.
2. Format of Issue Sections

Each environmental topic considered in Chapter IV 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 area, as appropriate. An overview of regulatory considerations 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 for the Lowe’s project was published (April 9, 2008), the project site was vacant except for one remaining business, DRC Vehicle. In accordance with CEQA Guidelines Section 15125(a), these on-site conditions represent the “baseline” against which project impacts are measured in this EIR.

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.

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

- LU: Land Use and Planning Policy
- TRANS: Transportation and Circulation
- AIR: Air Quality
- NOISE: Noise
- CULT: Cultural and Paleontological Resources
- GEO: Geology, Soils and Seismicity
- BIO: Biological Resources
- HYD: Hydrology and Storm Drainage
- PUB: Public Services and Utilities
- HAZ: Public Health and Safety/Hazardous Materials
- UD: Urban Decay
- GCC: Global Climate Change
Impacts are also categorized by type of impact as follows: Less-than-Significant; Significant; and Significant and Unavoidable. These notations are provided following each impact and each mitigation measure to identify their significance before and after mitigation.
I. PUBLIC SERVICES AND UTILITIES

This section analyzes the proposed project’s potential impacts to public services and utilities including: fire protection, police services, water, wastewater, solid waste, telecommunications, and electricity and natural gas. Potential impacts to public services and utilities that could result from the proposed project are identified. The project would not result in significant impacts to any public services or utilities, and as such, no mitigation measures would be necessary. The related topic of storm drainage is evaluated in Section IV.H, Hydrology and Storm Drainage.

1. Setting

In this section, current service locations, capacities, and expansion possibilities are discussed.

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 jurisdictional service area. CCCFPD employs approximately 406 fire fighters, including 12 Battalion Chiefs, and approximately 62 civilian personnel.1 A minimum of 90 firefighters are on duty at any given time at the 30 engine companies within the service area. All engine companies are staffed with EMT-level service, and all 30 engine companies are staffed with paramedic services.2

CCCFPD headquarters are located in Pleasant Hill and the district operates four fire stations within the City of Concord. Station 6 is nearest to the project site, located approximately 1.5 miles to the south at 2210 Willow Pass Road, and serves as the primary response station to the project site area. It is staffed by two engine companies and a minimum of six firefighters daily, with a total of 18 personnel. The station has one structural engine, one wildland engine, and a quint aerial apparatus.3 The secondary response station to the project site is Station 9, located at 209 Center Avenue in Pacheco, approximately 2.8 miles southwest of the project site. This station is staffed with three fire fighters daily and has a structural engine and water tender apparatus.

CCCFPD strives to maintain a dispatch relay time goal of 90 seconds from the time of receiving a call for service. Currently, the average time from call to dispatch is 103 seconds. The current Insurance Service Office (ISO) rating for the CCCFPD is Class 3 (1 being the highest and 10 being the lowest). The Insurance Service Office is a private organization that surveys fire departments in cities and towns across the United States. 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.

CCCFPD’s ability to meet their established 90 second emergency response time goal 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 also increases. The

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overlap of calls, when they occur, can require that a backup station be dispatched in emergencies, resulting in response times greater than the 90-second goal. Currently, the average response time to the project site from Station 6 is approximately 7 to 8 minutes.4

**Concord General Plan Policies Related to Fire Services.** Concord General Plan policies related to fire services are listed and discussed in Table IV.A-1 in Section IV.A, Land Use and Planning Policy.

**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 4 miles south of the project site. In addition to its headquarters, CPD operates three field office locations. The project site is located in the Northern District Field Office area within sub-beat 4G, which includes the North Concord industrial area. The Northern District Field Office is located at the Estates Shopping Center at 2166 Solano Way, less than 2 miles south of the project site.

In 2007, CPD staffing included 161 sworn officers and 19 civilian positions.5 Four patrol shifts generally operate over a 24-hour period. The 2007 police officer to resident ratio was approximately 1.3 sworn officers per 1,000 residents, which is between 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.6

Specific police response times within the City are difficult to determine; however, CPD estimates that response times in 2008 have generally averaged approximately 8 to 11 minutes for Priority 1 (emergency) calls. Non-emergency call response times have generally ranged from less than 10 minutes to more than 30 minutes.7

As described, the project site is located in the Northern District’s industrial area within the boundary of sub-beat 4G. One sub-beat officer is assigned to this area; officers working within the larger Beat 4 area provide back-up support to 4G when necessary.8 Common law enforcement issues in the project area are generally related to burglaries of vehicles and businesses in the area. Other problems in the area that occur, but have been reduced significantly, include the dumping of garbage, abandoned vehicles, and transient population loitering and camping along Arnold Industrial Way corridor. It should be noted that the County Homeless Shelter is located in the immediate vicinity of the project site and is believed to contribute significantly to crime-related issues in the area.9

**Concord General Plan Policies Related to Police Services.** Concord General Plan policies related to police services are listed and discussed in Table IV.A-1 in Section IV.A, Land Use and Planning Policy.

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4 Ibid.
6 Ibid.
8 Ibid.
9 Ibid.
c. **Water.** This subsection describes the City’s sources of water, water treatment facilities, and water distribution system.

(1) **Water Sources.** The Contra Costa Water District (CCWD) supplies water to the City of Concord. CCWD obtains its water from the Sacramento/San Joaquin Delta and the United States Bureau of Reclamation’s Central Valley Project (CVP). CCWD receives a maximum delivery of 195,000 acre-feet per year from the CVP, with a reduction in deliveries during times of water shortages, including regulatorily restricted and drought years.\(^{10}\)

CCWD water is drawn from Rock Slough near Oakley, Old River near Discovery Bay, and Mallard Slough in Bay Point. Raw water is transported in the 48-mile Contra Costa Canal, which begins at Rock Slough, then stretches west to Clyde, south to Walnut Creek, and north to Martinez. CCWD also stores raw water in four reservoirs within the County, including the Mallard Reservoir located approximately ½-mile north of the project site and Los Vaqueros Reservoir located south of the City of Brentwood. The Los Vaqueros Reservoir is the CCWD’s main reservoir and has a storage capacity of approximately 100,000 acre-feet. In total, CCWD treats and provides water from all of its sources to about 550,000 residents in nine cities in central and eastern Contra Costa County, including the City of Concord.

Recycled water is provided by the Central Contra Costa Sanitary District (CCCSD) and is limited to a number of commercial customers in Pleasant Hill. CCCSD does not currently provide recycled water to the City of Concord.

(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 Treatment Plant (Bollman Plant) is located in North Concord and supplies potable water to the City of Concord, including the project site, as well as parts of Pleasant Hill, Walnut Creek, and Martinez. The Bollman Plant has a treatment capacity of 75 million gallons per day (mgd), and utilizes a conventional water treatment process, which includes coagulation, flocculation, and sedimentation, mixed media granular activated carbon (GAC) filtration, and intermediate ozonation after sedimentation.

The project site may also be supplied with water from the Randall-Bold Water Treatment Plant (Randall-Bold Plant), which CCWD co-owns with the Diablo Water District, via the multi-purpose pipeline. Water at the Randall-Bold Plant is subject to direct filtration treatment, which includes coagulation and flocculation, mixed media granular activated carbon (GAC) filtration, and pre- and post-ozonation. CCWD’s allocation of capacity at Randall-Bold is 25 mgd (of total 40 mgd capacity). The Randall-Bold Plant is designed to be expandable to 80 mgd.

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\(^{10}\) Mark Seedall, Senior Planner, Contra Costa Water District, 2008. Written communication with LSA Associates, Inc., April 23.
CCWD operates more than 800 miles of pipelines and 40 active storage reservoirs. Total treated water storage capacity is approximately 70 million gallons, and 30 pump stations are used to deliver the water and maintain water pressure within the distribution system.

In relationship to the proposed project, CCWD owns and maintains a 12-inch water main located along Arnold Industrial Way, directly adjacent to the southern edge of the project site, as well as an 8-inch water main that traverses the western edge of the project site. CCWD currently has no planned water delivery system improvements for the project area. The proposed project would connect into the CCWD system at Arnold Industrial Way.

(3) Concord General Plan Policies Related to Water. Concord General Plan policies related to water services are listed and discussed in Table IV.A-1 in Section IV.A, Land Use and Planning Policy.

d. Wastewater (Sanitary Sewer) System. The City owns and maintains the majority of the wastewater collection system within its boundaries, with the exception of portions of the system in North Concord within the vicinity of the project site, which are owned and maintained by the Central Contra Costa Sanitary District (CCCSD). All Concord wastewater treatment service is provided by CCCSD, which treats the collected sewage to a secondary level with some additional level of treatment to produce reclaimed water.

(1) Collection System. The wastewater collection system within the CCCSD service area consists of a 1,500 mile network of pipes, ranging in size from 6 to 102 inches in diameter, 18 pump stations, and associated infrastructure that carry wastewater from homes and businesses to the CCCSD Wastewater Treatment Plant located in unincorporated Martinez. Pipes within the system range in age from approximately 38 years old nearest the project site to eleven years old as they enter into the Treatment Plant. The system is maintained and upgraded on an as-needed basis.

Infrastructure in the vicinity of the project site consists of an 8-inch sewer line located beneath Arnold Industrial Way. Wastewater is transported by gravity from the project site directly to the Wastewater Treatment Plant in unincorporated Martinez, where it is discharged into Suisun Bay, or is used for non-potable purposes, such as landscape irrigation.

Two north-south running sanitary sewer easements are located on the project site; one is generally located in the center of the site, the other on the western half of the site and partially traversing under the proposed Lowe’s building pad.

(2) Wastewater Treatment Facilities. CCCSD owns and operates the Wastewater Treatment Plant in Martinez. The average effluent discharge from the Wastewater Treatment Plant is currently limited to 53.8 mgd by RWQCB NPDES permits. The average daily dry weather flow in 2007 (the most recent year information is available) was 36.1 mgd.

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(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 for the regulation of contributors to the CCCSD wastewater collection 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 IV.A-1 in Section IV.A, Land Use and Planning Policy.

e. **Solid Waste.** The following section describes Concord’s non-hazardous and hazardous waste disposal services and capacity, as well as the City’s solid waste regulatory context, including source reduction and recycling.

(1) **Non-Hazardous Solid Waste.** Franchised solid waste collection, disposal, and recycling services in Concord are provided by Concord Disposal Service (CDS). Non-hazardous solid waste is taken to the Transfer Station and Recycling Center in Pittsburg. The Transfer Station has a maximum allowable capacity of 1,500 tons of waste per day. After undergoing processing, waste from the Transfer Station is delivered to the Potrero Hills Landfill in Solano County. The landfill handles construction, demolition, and mixed municipal waste. The landfill comprises approximately 320 acres, with 190 acres for waste disposal, and as of 2008, has a permitted capacity of 21,500,000 cubic yards. The landfill has a permitted throughput of 4,330 tons per day and is operating at approximately 62 percent (13,300,000 cubic yards) of the permitted capacity. Based on current disposal rates, the current landfill is expected to have remaining capacity through 2011. The landfill operator is currently applying for the necessary permits for expansion of the landfill. Approval of Phase II of the landfill expansion would increase the site to 580 acres and enhance fill capacity to approximately 83,000,000 cubic yards, which would add approximately 35 years to landfill’s remaining site life. If Phase II is not approved, the Potrero Landfill is set to close in January 2012.

The County of Solano is in the process of evaluating the proposed landfill expansion and potential alternatives for waste disposal. In 2003, an environmental impact report was prepared to assess the impacts of the Phase II landfill expansion project, and a Recirculated Draft EIR was circulated and certified in June 2008.

(2) **Hazardous Solid Waste.** Concord’s hazardous wastes are disposed of at the Kettleman City Facility, which is operated by Chemical Waste Management, Inc. The Kettleman Hills Facility is

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12 Permitted throughput is the maximum permitted amount of waste a landfill can handle and dispose of in one day. This figure is established in the current solid waste facilities permit issued by the Integrated Waste Management Board.


located in the San Joaquin Valley in Kettleman City, approximately midway between San Francisco
and Los Angeles. The facility is approved under the Comprehensive Environmental Response,
Compensation, and Liability Act and permitted under the Toxic Substances Control Act and the
Resource Conservation and Recovery Act to manage hazardous waste materials. The Kettleman Hills
Facility has a permitted capacity of 4,200,000 cubic yards. As of 2008, 2,298,140 cubic yards, or 64
percent, of the facility’s capacity, has been used.

(3) Regulatory Context. The following describes the solid waste regulatory context in Concor-
d 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)
required 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 Concord’s Source Reduction and Recycling Element, which was approved
by the California Integrated Waste Management Board in 1993. As required by AB 939, Concord
successfully diverted 50 percent of its solid waste in the year 2000. However, diversion rates have
been below 50 percent from 2001 to 2003 (the last reported year).

Code Chapter 82-83 requires all new development exceeding 10,000 square feet to 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 Reduc-
tion/Recycling Plans on file with the Planning Division. Submittal and approval of the source reduc-
tion and recycling plan for the Lowe’s Shopping Center project would be required through the City’s
Standard Conditions of Approval for development projects, which require that the plan be approved
prior to issuance of a building permit.

Concord General Plan Policies Related to Solid Waste. Concord General Plan policies
related to solid waste services are listed and discussed in Table IV.A-1 in Section IV.A, Land Use and
Planning Policy.

d. Telecommunications. A number of telecommunications providers currently service Concord.
AT&T provides telephone and DSL internet service. Comcast provides cable television services
Citywide. Astound Broadband provides telephone, cable television, and cable internet services City-
wide. 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. These services are currently available at the project site.

Website: http://www.ciwmb.ca.gov. April.
16 Ibid.
17 California Integrated Waste Management Board, 2008. Jurisdictional Profile for City of Concord. Website:
18 City of Concord, 2007. Concord 2030 Urban Area General Plan. Website:
Further, 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 their facilities and infrastructure, adding new facilities and technology to remain in conformance with California Public Utilities Commission tariffs and regulations and to serve customer demand in the City.

g. Electricity and Gas. The Pacific Gas & Electric Company (PG&E) provides electricity and natural gas service to customers in the City of Concord. PG&E charges connection and user fees for all new development in addition to sliding rates for electrical and natural gas service based on use. These services are currently available at the project site.

Title 24, California’s Energy Efficiency Standards for Residential and Nonresidential Buildings, details requirements to achieve minimum energy efficiency standards of the State of California. The standards apply to new construction of both residential and nonresidential buildings, and regulate energy consumed for heating, cooling, ventilation, water heating and lighting. Compliance with these standards is verified and enforced through the local building permit process.

2. Impacts and Mitigation Measures

This section discusses public service and utility impacts that could result from the proposed project. The section begins with the significance criteria, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, if appropriate. Less-than-significant impacts are discussed first, followed by significant impacts.

a. Criteria of Significance. The project would have a significant impact on the environment related to public services and utilities 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, to maintain acceptable service ratios, response times, or other performance objectives for fire and police protection public services;
- 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, such that new or expanded entitlements were needed;
- Result in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to project 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; or
- 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.

b. Less-than-Significant Public Services Impacts. Less-than-significant impacts for each of the following public services would result from the proposed project.
(1) **Fire Protection.** CCFPD has reviewed the proposed project and determined that increased demands on fire protection services resulting from implementation of the project would not exceed the service capabilities of existing facilities, staff, and equipment. \(^{19}\) Therefore, the project would not result in substantial adverse physical impacts associated with the provision of or need for new or physically altered fire department facilities to maintain acceptable service ratios, response times, or other performance objectives for fire services.

Additionally, 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. Compliance with these requirements would be assessed as a part of the standard building permit plan check processes for the various authorities with jurisdiction over the project. Specific requirements pertaining to site design and available resources (i.e., hydrant fire flow) would also be required as conditions of approval, and would be assessed through the permit review processes. \(^{20}\)

Therefore, impacts of the proposed project on fire protection and emergency services would be less than significant and no mitigation is required.

(2) **Police Services.** The proposed project is located in North Concord, an area that is characterized by large industrial sites with excessive amounts of outdoor storage areas with low day and evening employment populations. As a result, few persons are in the area providing “eyes on the street” on transient vehicles and persons passing through the area, which typically deters vehicular and business burglaries, dumping of garbage, abandoning of vehicles, and loitering. The proposed project would add uses to the North Concord area that would provide more daily activity, increasing the number of persons employed in the area and patronizing the site, and providing a greater human presence in the area. The proposed project would enhance security on the site compared to existing conditions. Therefore, the project would not result in substantial adverse physical impacts associated with the provision of or need for new or physically altered police department facilities to maintain acceptable service ratios, response times, or other performance objectives for fire services. As a result, impacts of the proposed project on police services would be less than significant and no mitigation is required. \(^{21}\)

(3) **Water.** The proposed project would include installation of a new 8-inch water main on the project site, with connections to the existing 12-inch main at Arnold Industrial Way. Any and all groundwater wells on the project site would be abandoned as described in Section IV-H, Hydrology and Storm Drainage.

CCWD applies a water use factor of 2.48 acre-feet per acre per year for retail and commercial land uses. This water use factor is based on gross acreage. \(^{22}\) At 28± acres, the projected water demand for the proposed project would be 68 acre-feet per year (0.18 acre-feet per day), or 0.06 mgd. This represents less than one percent of the District’s overall daily treatment capacity.

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\(^{19}\) Ted Leach, Fire Prevention Technician, Contra Costa County Fire Protection District, 2008, op. cit.

\(^{20}\) Ibid.

\(^{21}\) David Livingston, Chief of Police, Concord Police Department, 2008, op. cit.

\(^{22}\) Mark Seedall, Senior Planner, Contra Costa Water District, 2008, op. cit.
CCWD states that its water supplies are sufficient to serve the proposed project and that neither expansion of water treatment facilities nor reconstruction of major water lines would be required. Potable water service will be made available upon completion of financial arrangements and installation of all necessary water facilities to meet the requirements of the commercial use, including backflow and fire protection, according to District standards.23

As a result, the proposed project would result in less-than-significant impacts on water supply, treatment, and distribution, and no mitigation is required.

(4) **Wastewater.** As a preliminary step toward the provision of wastewater collection at the project site, the portion of the western easement under the proposed Lowe’s building site (i.e., northern half of the easement) would be quitclaimed and the pipes removed following project approval. The southern half of the easement would be retained and used by Lowe’s and the tenant buildings to discharge sewage waste prior to being collected in the public sewer system under Arnold Industrial Way.

The sewer easement traversing the center of the project site would also be quitclaimed and the pipes removed following project approval.

The proposed project would be subject to the provisions of CCCSD’s Source Control Ordinance and sewer improvement plans will be reviewed by CCCSD to determine the specific source control requirements that may apply. The proposed project could include kitchen facilities that may generate enough grease to cause the public sewer to plug. CCCSD may require installation of grease removal devices prior to approval of sewer service.

CCCSD states that the wastewater collection system within the project area has the capacity to serve the proposed project.24 The Wastewater Treatment Plant is currently operating at approximately 67 percent capacity and is also anticipated to have sufficient capacity to serve the proposed project. The proposed project would, therefore, result in less-than-significant impacts on wastewater collection, treatment, and disposal, and no mitigation is required.

(5) **Solid Waste.** The proposed project would be served by landfills with the capacity to handle solid wastes generated by the demolition and operational phases of the proposed project. Demolition wastes from existing structures, paved asphalt areas, and utilities would be collected and hauled to the Pittsburg Transfer Station and Recycling Center. The approximately 37,000 square feet of buildings that would be demolished would yield approximately 15,000 cubic yards of solid waste. The removal of existing asphalt and aggregate base would create an additional 21,900 cubic yards of solid waste. In total, demolition and construction activities would generate 36,900 cubic yards of solid waste.

Since the project is over 10,000 square feet, the City of Concord Construction and Demolition Recycling Ordinance 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

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23 Ibid.
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 Project fee, (0.3 percent of project valuation), submit a performance security report, sign a performance agreement, and then submit a final report to the waste management compliance official within 30 days of project completion. 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 proposed project would only generate 12,975 cubic yards (approximately 6.5 tons) of solid waste from demolition activities, to be dumped at the Potrero Landfill. The generation of 12,975 cubic yards of solid waste represents 0.15 percent of the remaining capacity (8,200,000 cubic yards) of the Potrero Hills Landfill. In addition, unless the Phase II of the Potrero Hills Landfill is approved, the landfill is set to close at the beginning of 2012. Demolition activities for the proposed project are anticipated to be completed before 2012. As such, any waste associated with the demolition and construction phase of the project could be accommodated at the Potrero Hills Landfill.

In terms of the waste generated during the operation phase of the project, the IWMB estimates waste generation of 2.5 pounds per 100 square feet per day for shopping centers. When operational, at 334,112 square feet, the proposed project could generate a maximum of 8,353 pounds (approximately 4 tons) of waste per day. The maximum projected operational waste generation by the project would be less than 1 percent of the daily permitted throughput for both the Pittsburg Transfer Station and Recycling Center and the Potrero Hills Landfill. However, Concord Disposal Service would provide commercial recycling services, thereby reducing the solid waste generated by the proposed project. The design and location of on-site recycling bins would be subject to approval prior to construction. The amount of operational solid waste generated by the proposed project would not exceed the capacity of or have a significant impact on the Potrero Hills Landfill. The solid waste generated during site demolition and operational phases of the proposed project could be accommodated by the existing landfill’s permitted capacities. In addition, the proposed project would be consistent with the City of Concord’s General Plan policies related to solid waste. The project would comply with the C&D Ordinance and would therefore promote the recycling of construction wastes (Policy PF-1.5.2). The project would also 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 (Policies PF-1.5.1 and PF-1.5.4). Therefore, the project would result in less-than-significant solid waste impacts, and no mitigation is required.

(6) Electricity, Gas, and Telecommunications. Development of the proposed project would occur in a location that currently has electricity, gas, telephone, cable, and internet services. Existing overhead power and communication utility lines on Arnold Industrial Way would be relocated to an under-ground conduit as part of the project’s off-site public improvements. As such, the proposed
project would have a less-than-significant impact on electricity, gas, telecommunications, cable, and internet services and no mitigation is required.

c. **Significant Impacts to Public Services and Utilities.** The proposed project would not result in any significant impacts to public services or utilities.
J. PUBLIC HEALTH AND SAFETY/HAZARDOUS MATERIALS

This section describes the potential presence of hazardous materials and other hazards on and near the project site and assesses potential impacts on public health and safety that could result from the development of the project. Mitigation measures are recommended as appropriate.

Analysis of current conditions at the project site is based on a review of environmental investigations performed at the site, a site reconnaissance, and communication with regulatory agency staff and other persons familiar with the project site.

1. Setting

This subsection describes the hazardous materials setting for the project site. It describes the regulatory framework that governs hazardous materials and the known and potential sources of hazardous material contamination at the project site.

a. Regulatory Agency Setting. In California, the United States Environmental Protection Agency (U.S. EPA) has granted most enforcement authority over federal hazardous materials regulations to the California Environmental Protection Agency (Cal EPA). In turn, a local agency, the Hazardous Materials Program of Contra Costa Health Services (CCHS), has been granted responsibility for implementation and enforcement of many hazardous materials regulations in Contra Costa County under the Certified Unified Program Agency (CUPA) Program (California Health and Safety Code Chapter 6.11). Another local agency, the Contra Costa County Fire Protection District, performs safety inspections of City of Concord businesses and provides emergency response to hazardous materials incidents within the City of Concord.

In California, State and regional agencies are responsible for programs regulating intentional and accidental release of hazardous materials to the environment. At the project site, the Bay Area Air Quality Management District (BAAQMD) has oversight over air emissions, and the San Francisco Bay Regional Water Quality Control Board (RWQCB) regulates discharges and releases to surface and groundwater, or to soil where such discharges potentially threaten surface or groundwater. The Cal EPA Department of Toxic Substances Control (DTSC) regulates remediation of sites where discharges to land could potentially present a public health risk. CCHS may act as lead agency to ensure proper remediation of leaking underground petroleum product tank sites and certain other contaminated sites within Contra Costa County. The RWQCB is the agency overseeing the investigation and remediation of soils and groundwater contamination for the project site. (See discussion in Section 1.b.(2) below.)

b. Hazardous Materials Setting. This subsection describes previous hazardous materials investigations and remediation completed on the project site and discusses known and potential sources of contaminants at the project site.

1 The California Health and Safety Code defines a hazardous material as “...any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety, or to the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, radioactive materials, and any material which a handler or administering agency has a reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.” (Health and Safety Code Section 25501.)
(1) Previous Hazardous Materials Investigations and Remediation. Potential hazardous materials issues at the project site were evaluated in a Phase I Environmental Site Assessment ("2008 Phase I")\(^2\) prepared in April 2008 by Aqua Science Engineers, Inc. (ASE). The 2008 Phase I updated the findings of a Phase I assessment prepared in December 2003 for the western 23.26-acre portion of the project site at 1923-1985 Arnold Industrial Way\(^3\) and a second Phase I prepared in December 2003 for the undeveloped 5.02-acre eastern portion of the project site, with the address of 2001 Arnold Industrial Way.\(^4\) The 2008 Phase I activities included site inspections and review of historical land use resources and regulatory agency files and databases, and summarized previous environmental assessments and reports for the project site.\(^5\)

A "Report of Soil and Groundwater Assessment" (2004 Soil and Groundwater Assessment) was prepared for 1923-1985 Arnold Industrial Way in March 2004 to evaluate several potential soil and groundwater contamination issues that were identified in the 2003 Phase I assessment for that property.\(^6\) Field activities for the March 2004 soil and groundwater assessment included completion of nine soil borings to the depth of groundwater and excavation of six 4-foot-deep test pits (see Figure IV.J-1). Soil samples were collected from the soil borings and the test pits. Groundwater samples were collected from the soil boring locations and from a domestic water supply well at the project site.

In February 2006, soil remediation activities were conducted at three test-pit areas at the 1923-1985 Arnold Industrial Way property where elevated concentrations of petroleum hydrocarbons were identified in shallow soils during the 2004 Soil and Groundwater Assessment. Approximately 350 tons of petroleum-contaminated soils were removed and disposed of off-site pursuant to a remediation work plan approved by the RWQCB.\(^7\) Confirmation sampling was performed to verify that all affected soils in these areas were removed during the remediation.

In March 2008, further soil and groundwater assessment was undertaken at the 1923-1985 Arnold Industrial Way property pursuant to a work plan\(^8\) approved by the RWQCB. Following the completion of the additional soil and groundwater assessment, a report was prepared ("2008 Soil and Groundwater Report").\(^9\) Information regarding soil and groundwater contamination at the project site, as identified during the 2004 and 2008 assessment activities, is provided below under "Soil and Groundwater Assessment Findings."


(2) Potential Sources of Contamination at the Project Site. Phase I reports conducted prior to the 2008 Phase I and the 2008 Soil and Groundwater Report had identified several potential sources of contamination associated with recent and historical land uses and hazardous materials commonly associated with building materials. Those previously identified potential sources of contamination are described below.

Historical Land Uses at the Project Site. According to the first available historical resource for the Phase I investigations, a 1939 aerial photograph, the project site was part of a larger area of dry-farmed land that extended off-site in all directions. The project site continued to be under agricultural cultivation until around 1959.

At that time, the western portion of the project site (now designated 1923-1985 Arnold Industrial Way) began to be used for light industrial land uses. Aerial photos from 1973, 1980, and 1993 show additional development and new buildings, along with the non-residential portions of the project site being divided up into a number of storage yards with various tenants. The southern border of the project site was adjusted in response to the changes in the right-of-way for Arnold Industrial Way resulting from the widening of Highway 4 (SR 4). City business directories show at least 19 different businesses with addresses within the project site between 1961 and 2001.

The eastern portion of the project site (now designated 2001 Arnold Industrial Way) was developed between 1961 and April 1973 as a contractor’s storage yard. By September 1973 a small building had been added to the parcel and the area used for storage enlarged. City business directories list 2001 Arnold Industrial Way as the address of the Trail N Drive Center in 1974 and 1976, and Lemke Construction in 1981. By 1993, an aerial photograph showed that the building had been removed and the parcel had become vacant.

Historical land uses associated with hazardous materials include agricultural land uses, vehicle wrecking, and vehicle maintenance and storage. The project site was under agricultural cultivation from at least 1939, the date of the first available historic resource, until around 1959. The 2003 Anton Geological Phase I report concluded that agricultural chemical use prior to 1959 was unlikely to significantly affect the project site. That report stated that significant contamination from pesticides would be most commonly associated with inorganic pesticides as well as large farm headquarters facilities or agricultural dusting airstrips where the storage and repeated mixing of chemicals, and the rinsing of applications equipment may have occurred. No evidence of this type of activity was identified in historical records. The two 2003 Anton Geological Phase I reports concluded that there was no such activity or usage evident on the project site, and that the risk of potential agricultural chemical pesticide contamination would therefore be slight.

Other historical light industrial land uses associated with hazardous materials, such as vehicle wrecking and vehicle maintenance and storage, were noted through the preparation dates of the sources. 

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Known and potential contamination associated with these land uses is discussed below, under “Recent Land Uses at the Project Site” and “Soil and Groundwater Assessment Findings.”

**Former Petroleum Underground Storage Tanks.** The 2003 Phase I reports and RWQCB records indicated that there might have been as many as 11 petroleum underground storage tanks (USTs) historically present at the project site.\(^\text{14}\) Operation of at least one of the USTs resulted in a reported significant release of petroleum hydrocarbons affecting project site soils and groundwater. Available information regarding USTs at the project site is summarized below. The former UST locations are shown on Figure IV.J-1

- **Judd Drilling Site.** Two USTs, one used for gasoline and one used for diesel, were removed from the Judd Drilling site at 1927 Arnold Industrial Way in November 1994. Significant concentrations of petroleum-related contaminants were identified in soil and groundwater in the former tank vicinity, including petroleum hydrocarbons in the gasoline and diesel ranges and benzene at concentrations above Environmental Screening Levels (ESLs)\(^\text{15}\) established by the RWQCB. ESLs are conservative screening concentrations, and exceedance of these values does not necessarily mean that the site may pose a health risk, but it indicates that additional investigation and/or remediation of the project site may be warranted.

  In 1998 the Judd Drilling release case was closed by the RWQCB and CCHS. Soil and groundwater contamination was allowed to remain on-site without further remediation, as in 1998 it was determined that there were no sensitive receptors in close vicinity of the site that could potentially be affected by the contamination.\(^\text{16}\)

- **Lemke Site.** In 1987, two 3,000-gallon gasoline and one 1,000-gallon gasoline USTs were removed from the Lemke site at 2001 Arnold Industrial Way. The release involved a minor leak that required no additional remediation and the release case was closed by RWQCB and CCHS in April 1995. No analytical data were available for the Anton Geological 2003 Phase I site assessment, but available information from the site closure letter indicated that the release was minor and did not significantly affect soils left in place in the tank area. This information was confirmed in the 2008 Phase I Report.\(^\text{17}\)

- **Winton Jones Site.** During the 1990s, two 5,000-gallon USTs (one gasoline and one diesel) were reportedly removed from the Winton Jones property, at 1949 Arnold Industrial Way in the south-central portion of the project site. The UST removals were apparently performed without regulatory oversight, as no information was identified in County files confirming that the USTs were removed or that any soil or groundwater testing was performed during removal of these USTs.\(^\text{18}\)

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\(^\text{15}\) San Francisco Bay Regional Water Quality Control Board (RWQCB), 2005, Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, February, Table A. The Interim Final version of the RWQCB’s guidance entitled “Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater” was updated in November 2007.

\(^\text{16}\) CCHS, 1998, Site Summary Form, Judd Drilling, 1927 Arnold Industrial Way, Concord, CA, 23 February.

\(^\text{17}\) ACE, 2008a, op cit.

\(^\text{18}\) Anton Geological, 2003a, op cit.
During the same period, records at the local regulatory agencies indicated that two additional USTs (one gasoline and one waste oil), also owned by Winton Jones, were reported to be present and later removed without formal closure by a regulatory agency. Information regarding the fate of these USTs was not available to the preparers of the Anton Geological Phase I site assessment.  

In February 2004, a magnetic anomaly survey of the area previously identified as containing USTs was performed as part of the soil and groundwater assessment activities. Aside from expected underground utility lines, no metallic anomalies that might be associated with additional USTs or piping were discovered.

- **Najessco Lumber & Truss Site.** During the early 1990s, two 550-gallon (one gasoline and one diesel) USTs were reportedly removed from the property at 1933 Arnold Industrial Way; this portion of the property was being leased to Najessco Lumber & Truss at the time. According to the property owner, the gasoline UST was removed in 1991 without any regulatory agency involvement. The diesel UST was removed in 1993 under permit with CCHS, but soil samples were not collected. During the mid-1990s, the former area of the USTs was re-excavated and enlarged for inspection and sample collection under the guidance of CCHS. Soil sample analytical results indicated 140 parts per million motor oil and non-detectable concentrations for all remaining analytes.

**Recent Land Uses at the Project Site.** Since 1959, land uses in the developed portion of the project site have included vehicle wrecking, maintenance, and storage. These land uses are associated with the use of lubricants, solvents, and other hazardous materials. Staining, indicative of surface releases, was noted in several areas of the project site during the Phase I site reconnaissance. Improper storage of hazardous wastes, including open and unlabeled waste oil containers and an apparent oil-water separator, located near the former Winton Jones property were also noted during the Phase I. Potential impacts from these land uses were assessed in the 2004 Soil and Groundwater Assessment Report and the 2008 Soil and Groundwater Assessment Report discussed below under “Soil and Groundwater Assessment Findings.”

**Soil and Groundwater Assessment Findings.** Two soil and groundwater assessments have been performed at the 1923-1985 Arnold Industrial Way portion of the project site. The findings of those assessments are summarized below.

**2004 Soil and Groundwater Assessment Report.** To evaluate the potential contamination from land uses identified during the 2003 Phase I investigations, soil samples from nine soil borings and six shallow test pits were collected and analyzed for the 2004 Soil and Groundwater Assessment Report. Two soil borings were installed near an oil-water separator, two soil borings were installed near a suspected UST location at the Winton Jones property, and five soil borings were placed on the

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19 Ibid.
20 Ibid.
22 Ibid.
23 Ibid.
24 Ibid.
periphery of the project site to evaluate potential off-site contaminant sources. The shallow test pit locations were located either at an obvious soil stain, or at a randomly-selected location within larger suspect areas. Additional groundwater samples were collected from an on-site domestic water supply well located near the center of the project site.

Soil samples from the depth of the groundwater interface (which ranged from 11.5 to 28.5 feet below the ground surface [bgs]) and one grab groundwater sample were collected at each soil boring location. These soil samples described in the 2004 Soil and Groundwater Assessment Report did not contain elevated concentrations of petroleum hydrocarbons or volatile organic compounds. Groundwater samples from four of the borings, BH-C, BH-D, BH-E, and BH-H, exceeded ESLs for commercial/industrial land uses. The highest contaminant concentrations in groundwater were identified at boring location BH-H, located hydraulically downgradient from the former Judd Drilling UST. The contamination at this location may have been related to the former Judd Drilling UST, or the contamination may have been from a previously undiscovered or off-site source.

Three out of six of the surface (0.5-foot) soil samples from the test pits described in the 2004 Soil and Groundwater Assessment Report, at Test Pit C, Test Pit D, and Test Pit F, contained petroleum hydrocarbons in the gasoline and diesel ranges above ESLs for commercial/industrial soils. At Test Pit D and Test Pit F, contaminant concentrations in the 2-foot-deep samples were below the ESLs, suggesting that contamination was limited to shallow surface soils. At Test Pit C, the 2-foot bgs sample was also above the ESL. No volatile organic compounds (VOCs), pesticides, or herbicides were detected in any soil sample collected from test pits at concentrations exceeding ESLs. Concentrations of metals in soils were generally consistent with background (naturally occurring) concentrations in Bay Area soils. Contaminated soils at Test Pits C, D, and F were removed in 2006 pursuant to a work plan approved by RWQCB.

The groundwater samples from the on-site water supply well described in the 2004 Soil and Groundwater Assessment Report were analyzed for petroleum hydrocarbons, metals, VOCs, pesticides, and herbicides. The only compound that exceeded ESLs in the groundwater sample from the on-site well was copper at 11 parts per billion (ppb), which was still well below the California Department of Health Services Maximum Contaminant Level for drinking water of 1,000 ppb.

**2008 Soil and Groundwater Assessment Report.** Further soil and groundwater assessment activities were conducted in March 2008. The 2008 Soil and Groundwater Report was designed to investigate former UST areas, areas used for vehicle and equipment storage, and areas where staining from improper oil and paint storage was apparent. Thirteen soil borings were completed and soil and groundwater samples were analyzed for petroleum hydrocarbons and VOCs; soil samples were also

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26 Ibid.
27 Ibid.
29 Maximum Contaminant Levels (MCLs) are State drinking water standards, and are therefore assumed to be protective of human health regardless of the type of exposure (e.g. ingestion, dermal contact, etc.).
31 Aqua Science Engineers, Inc., 2008c, op cit.
analyzed for metals. Analytical results were compared to current RWQCB ESLs. No petroleum hydrocarbons or VOCs were identified above ESLs for commercial/industrial land uses. The only metal concentration to exceed an ESL was arsenic, but the report concluded that the highest arsenic concentration of 9.6 ppm was within the range of naturally occurring arsenic concentrations in soils within the San Francisco Bay Area and is therefore not believed to be related to a hazardous materials release that would warrant remedial activities.32

No petroleum hydrocarbon or VOC concentrations detected in groundwater exceeded ESLs for sites where groundwater is not a current or potential source of drinking water and no petroleum hydrocarbons as gasoline was detected in any of the samples analyzed. Four of the ten groundwater samples contained petroleum hydrocarbons as diesel and motor oil above ESLs for areas where groundwater is a current or potential source of drinking water.

One limitation noted in the 2008 Soil and Groundwater Report was that the presence of debris and vehicles at the Juan Rubio portion of the property, located in the northwestern portion of the site near the former Judd Drilling UST site, prevented site inspection and sampling. This limitation was corrected in May 2008, when a reinspection of the Juan Rubio Yard was conducted after it was vacated by the tenant. The reinspection noted some minor oil stains on asphalt and concrete surfaces, but did not identify any evidence of significant releases that would warrant additional investigation or remediation.33

The 2008 Soil and Groundwater Report concluded that some restrictions at the property may be required prior to redevelopment, such as limitations on use of shallow groundwater, restrictions on sensitive land uses, and use of vapor intrusion barriers near the former Judd Drilling USTs.34

**Hazardous Materials in Buildings.** As the current buildings at the project site were all constructed prior to the 1980s, there may be a potential for lead, asbestos, and other hazardous materials to be present in building materials at the site. Prior to 1978, lead compounds were commonly used in interior and exterior paints. Prior to the 1980s, building materials often contained asbestos fibers, which were used to provide strength and fire resistance. Although no lead or asbestos surveys are known to have been completed at the project site, the Phase I for the western portion of the project site indicated that potential asbestos-containing materials (ACMs) at the site were in good condition, and therefore would not be likely to pose a health risk in their current state.35 Even if the asbestos has been subject to significant weathering since the Phase I assessment was conducted, standard abatement measures would protect the health and safety of any construction personnel on the site (see Mitigation Measure HAZ-2 below).

Federal, State, and local requirements govern the removal of asbestos or suspected ACMs, including the demolition of structures where asbestos is present. All friable (crushable by hand) ACMs, or non-friable ACMs subject to damage, must be abated prior to demolition in accordance with applicable

32 Ibid.
34 Ibid.
requirements. Friable ACM must be disposed of as an asbestos waste at an approved facility. Non-friable ACM may be disposed of as non-hazardous waste at landfills that will accept such wastes. Workers conducting asbestos abatement must be trained in accordance with State and federal Occupational Safety and Health Administration (OSHA) regulations.

Federal and State regulations also govern the demolition of structures where lead or material containing lead is present. During demolition, lead-based paint that is securely adhering to wood or metal may be disposed of as demolition debris, which is a non-hazardous waste. Loose and peeling paint must be disposed of as a California and/or federal hazardous waste if the concentration of lead exceeds applicable waste thresholds. State and federal construction worker health and safety regulations require air monitoring and other protective measures during demolition activities where lead-based paint is present.

In addition, other common items, such as electrical transformers, fluorescent lighting, electrical switches, heating/cooling equipment, and thermostats, can contain hazardous materials, which may pose a health risk if not handled and disposed of properly. Fluorescent lighting tubes and ballasts, computer displays, and several other common items containing hazardous materials 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 under DTSC hazardous waste rules.

(3) Current Regulatory Status. The 2008 Phase I and the 2008 Soil and Groundwater Report were submitted to the RWQCB with the request by the project proponent that the RWQCB issue a “No Further Action” (NFA) letter for the project site. The NFA letter would serve as certification that the site was suitable for the proposed project. After review of the documents, the RWQCB determined that the NFA letter could be issued if the project proponent completed the following:

1) Documentation that the domestic water supply well at the property has been properly abandoned;
2) A soil and groundwater assessment of the eastern 5-acre parcel (2001 Arnold Industrial Way);
3) A deed restriction for the property restricting use of groundwater at the site and prohibiting land uses associated with sensitive receptors, such as residences, schools, hospitals, and day care centers;
4) Preparation and implementation of a Risk Management Plan to address potential soil, soil gas, and groundwater contamination that may be encountered during construction activities; and
5) Preparation and distribution of a Fact Sheet to nearby land owners, tenants, and occupants regarding the status of environmental activities at the site.

c. **City of Concord Policies.** Concord General Plan policies related to public health and safety and hazardous materials are listed and discussed in Table IV.A-1 in Section IV.A, Land Use and Planning Policy.

2. **Impacts and Mitigation Measures**

This subsection outlines potential impacts related to hazards and hazardous materials and recommends mitigation measures. Criteria of significance for hazards and hazardous materials are listed first. Less-than-significant impacts are then discussed, followed by significant impacts.

a. **Criteria of Significance.** The proposed project would result in a significant impact related to hazardous materials if it would have any of the following effects:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Generate hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼-mile of an existing or proposed school;
- Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment;
- For a project located within the planning area for the Contra Costa County Airport Land Use Compatibility Plan for Buchanan Field, result in a safety hazard for people residing or working in the project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- Result in an increased risk of exposure to wildland or urban fire hazards.

b. **Less-than-Significant Hazards and Hazardous Materials Impacts.** Less-than-significant impacts related to public health and safety and hazardous materials are discussed below.

1. **Routine Transportation, Use, or Disposal of Hazardous Materials.** The Lowe’s and other retail buildings would likely stock household, garden, and construction-related hazardous materials for sale and for routine janitorial and maintenance use.

Hazardous materials transportation, use, and disposal would be subject to State and federal hazardous materials laws and regulations. Hazardous materials would be required to be transported under U.S. Department of Transportation regulations. Hazardous materials use, storage, and disposal would be subject to hazardous materials programs administered by CCHS. CCHS programs applicable to the proposed project would likely include the Hazardous Materials Business Plan, aboveground and underground storage tank programs, and Resource Conservation and Recovery Act (RCRA) hazardous waste generator programs. Adherence to existing regulations would reduce this potential impact to a less-than-significant level, and no additional mitigation is required.
(2) **Hazardous Materials Near School Sites.** No existing or proposed schools are located within ¼ mile of the proposed project. No significant impact to schools in the project vicinity related to hazardous materials would be expected. While the significance criterion does not include child care centers, it should be noted that the Lincoln Child Center is located 0.1-mile from the project site. Routine use of hazardous materials at the project would not be expected to result in emissions or releases that would pose a significant risk to this child care center. As noted above, existing CCHS programs would regulate the use, storage, and disposal of hazardous materials on the site.

(3) **Aviation Hazards.** The project site is located approximately 1½ miles northeast of Buchanan Field Airport, an active general aviation airport. The southwestern portion of the project site is overlain by Safety Zone 4 identified in the Contra Costa County Airport Land Use Compatibility Plan (LUCP). Under the LUCP, 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 parking areas and a maximum of 5,000 square feet of restaurant or retail uses within the Safety Zone 4 area. This is consistent with the LUCP standards. (See additional discussion in Section IV.A, Land Use and Planning Policy.)

Safety Zone 3, for Runway 1L-19R is located approximately 600 feet northwest of the project site. Because the project site is not overlain by Safety Zone 3, it is not subject to LUCP policies for the zone.

As a result, development of the proposed project would be consistent with the LUCP and would not be expected to create a safety hazard for people residing or working in the project area.

(4) **Emergency Response and Evacuation Plans.** Prior to approval of the final map and improvement plan for the project, plan review and approval by the Contra Costa County Fire Protection District would be required. Proposed access and internal roadways at the project site would be required to meet State and local standards regarding road width, turning radius, and emergency vehicle access, which would prevent potential restrictions to emergency response or evacuation.

(5) **Fire Hazards.** The project site is not located in or adjacent to a designated wildfire hazard area. The project development would be subject to plan review and construction inspection by the Contra Costa County Fire Protection District to ensure that the project meets all State and local Building and Fire Code requirements. No impacts from wildland or urban fire hazards would be expected from development of the project.

c. **Significant Hazards and Hazardous Materials Impacts.** The following discussion describes the significant impacts related to hazards and hazardous materials that could result from the proposed project.

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37 Contra Costa County, 2000, Airport Land Use Compatibility Plan, Figure 3C, Safety Zones, Buchanan Field Airport.

38 California Department of Forestry and Fire Protection (CDF), 2000, Contra Costa County Natural Hazard Disclosure (Fire), Map NHD-07.
Impact HAZ-1: Development of the project could potentially expose construction workers and future site workers to hazardous concentrations of contaminants from soils and groundwater at the site. (S)

Environmental investigations have identified the presence of contaminants related to petroleum hydrocarbons in site soils and groundwater as a result of former leaking underground storage tanks and recent and historical land uses. Some contamination may be still be present on-site at concentrations above Environmental Screening Levels (ESLs) for commercial and industrial land uses.39

In addition to known potential sources of contamination, historical light industrial land uses may have resulted in previously undiscovered releases from surface spills or from former USTs that may have affected the project site. Other subsurface hazards or areas of contaminated soil and/or groundwater may become apparent during building demolition and earthmoving activities for the proposed project.

Construction activities proposed by the project would also involve use and transport of hazardous materials. These materials could include contaminated soils and groundwater; building demolition debris containing lead, asbestos, and/or other hazardous materials; and fuels, oils, and other chemicals used during construction. Removal/relocation and transportation of hazardous materials could result in accidental releases or spills, potentially posing health risks to workers, the public, and the environment.

Future construction workers and maintenance workers would have direct contact with surface and deeper soils and could encounter shallow groundwater, which was encountered at 11.5 to 28.5 feet below the ground surface during soil and groundwater assessment activities. If buildings are erected over contaminated materials, volatile contaminants, such as benzene, may have the potential to migrate from soil and groundwater via soil gases, and enter indoor air spaces through foundation cracks, potentially posing a health risk to future site workers and patrons.

The project site is currently under regulatory oversight by the RWQCB. The project applicant is currently seeking a “No Further Action” (NFA) letter for the site from the RWQCB, confirming appropriate remediation of the project site to commercial/industrial standards. As indicated in the setting section, the RWQCB will issue a NFA letter if certain conditions are met, including preparation of a soil and groundwater investigation at the 2001 Arnold Industrial Way property, execution of a deed restriction prohibiting residential and other sensitive land uses and restrictions on groundwater use, and preparation and implementation of a Risk Management Plan to address potential hazardous materials issues that may be encountered during project construction.

Implementation of the following two-part measure would reduce this impact to a less-than-significant level. Additional requirements may be imposed by RWQCB as part of their ongoing regulatory oversight of the project site. Existing local, state, and federal regulations apply to the routine use, storage, transport, and disposal of hazardous materials used during construction.

39 San Francisco Bay Regional Water Quality Control Board (RWQCB), 2007, Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater, February, Table A.
Mitigation Measure HAZ-1a: Prior to the issuance of the first permit for ground disturbance activities for the project (other than those that might be necessary for any further investigation or remediation activities), the project applicant shall submit documentation of (1) a subsurface investigation at the 2001 Arnold Industrial Way property, prepared by a qualified environmental professional; and (2) removal of the water supply well at the project site in accordance with applicable laws and regulations.

Mitigation Measure HAZ-1b: Prior to the issuance of the first permit for ground disturbance activities for the project (other than those that might be necessary for any further investigation or remediation activities), a Risk Management Plan shall be prepared by the project applicant. The Risk Management Plan shall address the proper investigation, remediation, and disposal of contaminated soils and groundwater that may be discovered during construction activities and shall incorporate the findings and recommendations of environmental investigations at the project site. The Risk Management Plan shall be peer-reviewed by a qualified environmental professional retained by the City. The City-approved Risk Management Plan shall be in effect until such time it is superseded by a Risk Management Plan approved by the RWQCB. (LTS)

Impact HAZ-2: Demolition of any structures containing lead-based paint, asbestos-containing building materials, or other hazardous materials could release airborne particles of hazardous materials, which may affect construction workers and the public. (S)

The existing buildings at the project site were constructed prior to 1980 and may contain lead-based paint, asbestos-containing building materials, and/or other common hazardous materials. Exposure to these materials may potentially result in serious health risks. Federal, State, and local requirements govern the abatement of lead-based paint and removal of asbestos or suspected asbestos-containing materials, including special construction worker health and safety standards for sites where lead and/or asbestos may be present. Other regulations require the proper handling and disposal of hazardous wastes. These requirements are promulgated by federal and State agencies and the Bay Area Air Quality Management District (BAAQMD).

Implementation of the following measure would reduce this impact to a less-than-significant level.

Mitigation Measure HAZ-2: As a condition of approval for any demolition permit for a structure at the project site, the project applicant shall provide a lead-based paint and asbestos-containing material survey prepared by a qualified environmental professional for the structure(s) proposed to be demolished. Based on the findings of the survey, identified asbestos hazards shall be abated by a certified asbestos abatement contractor in accordance with the regulations and notification requirements of the Bay Area Air Quality Management District. Federal and State construction worker health and safety regulations shall be required during renovation or demolition activities, and any required worker health and safety procedures shall be incorporated into a management plan for the project prepared by a qualified environmental professional. If loose or peeling lead-based paint is identified, it shall be removed by a qualified lead abatement contractor and disposed of in accordance with existing hazardous waste regulations. Other hazardous wastes generated during demolition activities, such as fluorescent light tubes, mercury switches, and computer displays, shall be managed and disposed of in accordance with existing hazardous waste regulations. (LTS)
Impact HAZ-3: Improper use or transport of hazardous materials during construction activities could result in releases affecting construction workers and the general public. (S)

Construction activities proposed by the project may involve use and transport of hazardous materials. These materials could include contaminated soils and groundwater; building demolition debris containing lead, asbestos, and/or other hazardous materials; and fuels, oils, and other chemicals used during construction. Removal/relocation and transportation of hazardous materials could result in accidental releases or spills, potentially posing health risks to workers, the public, and the environment.

Implementation of the following measure would reduce this impact to a less-than-significant level.

Mitigation Measure HAZ-3: A Risk Management Plan shall be prepared for project construction and reviewed by the RWQCB ((see discussion under Impact HAZ-1). The Risk Management Plan shall address the proper investigation, remediation, and disposal of contaminated soils and groundwater that may be discovered during construction activities. In addition, all use, storage, disposal, and transport of hazardous materials during construction activities shall be performed in accordance with existing local, State, and federal hazardous materials. No further mitigation is required. (LTS)
K. URBAN DECAY

This section assesses the potential for the proposed project to result in physical deterioration of other properties, referred to as “urban decay,” due to its business operation.

Consideration of this topic in environmental documents prepared under CEQA has increased in recent years in direct response to the California Court of Appeals decision in *Bakersfield Citizens for Local Control v. City of Bakersfield* (December 2004). In that decision, the Court determined that the CEQA Guidelines Section 15064 requires urban decay research and analysis:

“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) 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.”

The proposed project would include a Lowe’s store and another retail anchor tenant, along with two smaller retail/restaurant buildings. This EIR therefore evaluates the potential for the proposed shopping center to result in urban decay. In order to compile the appropriate background data with which to evaluate these potential impacts, as well as to provide other information with which to consider the proposed project’s merits, the City of Concord engaged CBRE Consulting, Inc., to study the proposed project. The report prepared by CBRE Consulting is entitled *Economic Impact Analysis, Lowe’s Commercial Shopping Center, Concord, California*, and is provided in Appendix F for reference.1 The methods used, data presented, and conclusions set forth in that report are drawn upon in this section on urban decay impacts.

1. Setting

This subsection describes existing conditions on the project site and the existing condition of the retail sector that could be affected.

a. Existing Conditions on Project Site. As described in Chapter III, Project Description, the existing project site is generally in a blighted condition, evidenced by poor on- and off-site maintenance, overgrown weeds and litter scattered along the site’s frontage, disorganized use areas on-site that lack uniformity, cohesive design, and maintenance, and a deficiency of public improvements (e.g., continuous curb, gutter and sidewalk improvements along frontage, undergrounding of utility lines). Interspersed among the various uses are large, open asphalt paved areas.

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b. **Existing Condition of Retail Sector and Market Area.** Generally, a weak retail sector will be more susceptible to urban decay. Conversely, a competing, new retail project is less likely to precipitate urban decay if the existing market conditions are relatively strong. In addition, the type, location, and parcel configuration of affected properties, as well as the range of potential reuse options, will also play a role in the susceptibility of existing retail districts and uses to urban decay.

CBRE Consulting defined a market area for the Lowe’s project for the purpose of analyzing the prospective economic impacts. A market area is the geographic area from which the majority of a retail shopping center’s demand is anticipated to originate. Shopping centers anchored by large-format stores such as general merchandise or home improvement retailers have market areas that can extend for several miles in each direction from the shopping center location. The actual size of the market area depends on many factors, including geography, transportation corridors, competitive retail supply, employment locations, and the location and demographics of residents. CBRE Consulting defined the periphery of the Lowe’s project market area as including the five cities of Concord, Walnut Creek, Pleasant Hill, Martinez and Clayton, as well as the six census designated places (CDPs) of Bay Point, Clyde, Mountain View, Vine Hill, Pacheco, and Waldon.2

(1) **Retailers in Market Area.** Major hardware and home improvement retailers with a presence in the region include Home Depot, Orchard Supply Hardware, Ace Hardware, and Dolan’s Lumber. There are no Lowe’s stores in the general region, including north in Vallejo/Benicia, south in Walnut Creek/Danville/Alamo, and southwest in Lamorinda (Lafayette, Orinda, Moraga). The closest Lowe’s store is in Antioch, about 12 miles east of the project site.

Lowe’s competitors within the City of Concord include an Orchard Supply Hardware on Monument Boulevard, a Home Depot on Meridian Park Boulevard, a Home Depot (formerly Yardbirds) on Ygnacio Valley Road, a Home Depot Design Center on Concord Avenue, Ashby Lumber on Arnold Industrial Way, Dolan’s Lumber on Monument Boulevard, and two Ace Hardware stores (one along Clayton Road and the other at Olivera Road and Port Chicago Highway). Outside of Concord, Lowe’s main competitors include a Home Depot store in Martinez, an Ace Hardware store in Walnut Creek, an Ace Hardware store in Pleasant Hill, and Dolan’s Lumber in Walnut Creek. A number of smaller hardware and home improvement-related stores are also located throughout the region.

Major general merchandise retailers with a presence in the region include Wal-Mart, Costco, Target, Sears, Kmart, JC Penney, Kohl’s, Mervyn’s, and Sam’s Club. Significant concentrations of general merchandise stores exist in Concord/Pleasant Hill, Pittsburg/Antioch, and Vallejo. While Walnut Creek is identified with only one major general merchandise store (Target), the 700,000-square-foot Broadway Plaza and a large concentration of apparel and home furnishings stores can be found in this city.3

(2) **Retail Sales in Market Area.** CBRE Consulting 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

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2 CBRE, pages 2 and 13.
3 CBRE, pages 13-14.
generated by residents are called “attraction” categories. Generally, attraction categories signal particular strengths of a retail market, while leakage categories signal particular weaknesses.

Overall, the City of Concord has significant attraction in all major retail categories except for eating and drinking places and service stations. In 2006, households in Concord had an estimated retail demand of $1.3 billion, representing an average household retail expenditure of $28,205. This compares to the actual sales experienced in the City of Concord in 2006 of roughly $2.3 billion in total, or $50,030 per household. The disparity between the level of resident retail demand and the actual retail sales in Concord represents an attraction of 43.6 percent total citywide spending. Put another way, the equivalent of approximately 43.6 percent of retail sales in the City of Concord is generated by households outside Concord city limits.

In Concord, almost all the retail categories relevant to the proposed project are experiencing significant retail attraction. The exception is the eating and drinking places category, which is experiencing a slight positive attraction of 5 percent. For categories relevant to the proposed Lowe’s store, this includes building materials and home furnishings and appliances, as well as a portion of “other retail” stores to which garden supplies sales are allocated. Within the important building materials category that accounts for the majority of Lowe’s store sales, approximately 63 percent of sales are being generated by residents outside the City of Concord. For the categories relevant to the general merchandise store, all categories are experiencing attraction in the range of 22 percent to 63 percent depending on the retail category. These results indicate that a large number of households living in communities outside the Concord city limits travel to Concord for a wide variety of their retail purchases, including hardware and home improvement goods, as well as general merchandise goods.

The market area as a whole has attraction in all retail categories, particularly in general merchandise, home furnishings and appliances, building materials, and other retail stores. In 2006, households in the market area had an estimated retail demand of $4.0 billion, compared to actual sales of $5.8 billion. Therefore, attraction in the market area is estimated to be about $1.7 billion, which represents 30.2 percent of spending generated by households outside the market area boundaries.4

(3) Strength of Market Area Retail Sector. The City of Concord and the market area as a whole present a strong retail landscape, with the market area attracting significant sales in almost every retail category. The leakage results indicate that retail is highly concentrated in the City of Concord and the market area as a whole, with the City of Concord having a higher retail concentration compared to other cities and communities in the market area (30.2-percent sales attraction in the market area versus 43.6-percent sales attraction in the City of Concord in 2006). 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 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.5

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4 CBRE, pages 16-18.
5 CBRE, page 19.
(4) Retail Vacancies. CBRE Consulting also contacted local experts to evaluate existing retail vacancy rates and determine the likelihood of lengthy vacancies occurring, should any stores close due to sales diversions caused by new retail projects.

Terranomics, which tracks shopping centers larger than 50,000 square feet (excluding malls), reported a 5.2-percent vacancy rate in Contra Costa County as of year-end 2007, down from 5.9 percent at year-end 2006. In the City of Concord, the brokerage firm reported that the retail vacancy rate was 6.4 percent at the end of 2007, down from 6.8 percent a year earlier. For the combined cities of Concord, Martinez, Clayton, Pleasant Hill and Walnut Creek, Terranomics reported a retail vacancy rate of 5.3 percent at the end of 2007. A retail vacancy rate of 5 to 6 percent is recognized by retail industry standards as characterizing a healthy market.

According to local brokers, larger space availabilities (10,000 square feet or greater) are difficult to find, and spaces that do become available are generally re-tenant within a reasonable time. All local sources interviewed believed that the market could comfortably support another major home improvement store and general merchandise store, and expressed confidence that any space that might be vacated following the opening of such stores could be re-tenant within a reasonable time (i.e., within one to three years depending on the size of the space). For example, other grocery stores have taken over or reoccupied two spaces in Concord that Albertsons closed in 2007, and Sports Authority has opened a store in the Sunvalley Mall space that Copeland Sports had vacated in early 2007. However, some felt there was less demand for unanchored strip space and space in older, lower quality centers in less desirable locations.

c. Future Retail Projects. In order to evaluate conditions in future years when the proposed project would be operational, CBRE Consulting also gathered information on potential future major retail projects in the market area based on information from city official and local real estate brokers.

A total of approximately 755,629 square feet of major commercial space (the 334,112-square-foot proposed project and other projects totaling 421,517 square feet) is planned, approved, or under construction in the market area (see Appendix F for details). This is a relatively moderate level of construction given the sizable market area and its population base.

d. Regulatory Setting. The Concord General Plan and Central Concord Redevelopment Plan contain provisions related to urban decay. Refer to Table IV.A-1 in Section IV.A, Land Use and Planning Policy, which contains a complete discussion of these plans and their related provisions. Table IV.A-1 in Section IV.A lists and discusses Concord General Plan policies related to urban decay. Section IV.A also discusses Central Concord Redevelopment Plan goals and objectives related to urban decay, including elimination of “blight,” strengthening of commercial functions, and provision of public improvements.

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6 CBRE, pages 20 and 37.
7 CBRE, pages 36-37.
8 CBRE, pages 31-32.
2. Impacts and Mitigation Measures

This subsection begins with a description of the criteria used to determine whether significant urban decay or deterioration would result from implementation of the proposed project, followed by a discussion of potential impacts and recommended mitigation measures. Cumulative impacts related to urban decay are described in Chapter VI, CEQA-Required Assessments and Conclusions.

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

- Directly or indirectly result in physical deterioration to properties or structures that is so prevalent, substantial, and lasting a significant period of time that it impairs the proper utilization of the properties and structures and the health, safety, and welfare of the surrounding community. Physical deterioration includes abnormally high business vacancies, abandoned buildings, boarded doors and windows, parked trucks and long-term unauthorized use of properties and parking lots, extensive or offensive graffiti painted on buildings, dumping of refuse or overturned dumpsters on properties, dead trees and shrubbery, and uncontrolled weed growth or homeless encampments.

b. Less-than-Significant Urban Decay Impacts. The CBRE Consulting analysis of project and cumulative urban decay analysis concluded the following.

(1) Project-Related Urban Decay Impacts. Based on the existing conditions in the market area in which the proposed project would be located, the introduction of the project by itself is not likely to precipitate urban decay of the type described herein. This conclusion is supported by CBRE Consulting’s consideration of current market conditions, findings regarding diverted sales, and re-tenanting potential, as follows.⁹

- Strong Retail Market Conditions in Market Area. CBRE Consulting’s retail market field work indicated that the retail market in Concord and the market area 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 significant excess of resident demand in virtually every major retail category.

- Diverted Sales. While the proposed project and other retail developments could lead to a reduction in sales at other stores, and possibly closures of underperforming stores, development of the proposed project is not likely to lead to impacts large enough to cause any potentially affected spaces to remain vacant for prolonged time periods (e.g., greater than three years).

CBRE Consulting estimated that stabilized sales at the proposed shopping center would total $108.7 million in 2011 dollars. The analysis indicated that, once stabilized sales are achieved, the project could divert a maximum of $41.9 million from existing area retailers ($7.0 million in apparel, $18.0 million in home furnishings and appliances, $14.8 million in building materials, and $2.1 million in other retail). The $41.9 million would represent 0.7 percent of the 2011 retail sales base. The sales diversion that could be caused by the project would thus represent only a small portion of the entire market area’s sales base. The sales diversion would be well below the 3-percent threshold considered to pose a risk to existing retailers, suggesting that the potential impacts from the project’s sales would be relatively modest.

CBRE Consulting indicated that, in home furnishings, appliances and building materials sales, the proposed Lowe’s is likely to capture a significant amount of its diverted sales from the two closest existing Home Depot stores, located on Meridian Park Boulevard in Concord and on Arnold Drive in Martinez within three to four miles of the project site. Other contractor-oriented stores near the project site may also be affected. In the general merchandise category, existing stores that would compete with the general merchandise anchor tenant proposed by the project include one Wal-Mart store (in Martinez), one Costco store (in Concord), and two Target stores (in Walnut Creek and Pleasant Hill).\textsuperscript{10}

The extent of the sales diversion would depend on many factors, such as the ability of existing retailers to weather sales declines, economic conditions, and the pace of recovery in the housing market. If any retailers in the market area are currently struggling or experiencing poor sales, they may not be able to withstand sales declines and may close. However, CBRE Consulting believes that most stores would be able to weather decreases in sales activity, and solid population gains beyond 2011 would help to offset these impacts in the years immediately following the project’s opening.

- \textbf{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. 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 the housing downturn, were to lead to slower than expected increases in population, then retail demand may be weaker and vacant retail space may take longer to absorb. Given the relatively modest level of impacts anticipated and the dense concentration of retail offerings in the market area, however, CBRE Consulting believes that while some stores may experience sales declines and other poorly performing stores may close, prolonged vacancies as a result of any such closures are unlikely.

It should be noted that, in addition to evaluating sales impacts by retail category, CBRE Consulting examined where impacts could occur in relation to major commercial corridors in the market area, including downtown Concord. Downtown Concord is a niche market focused mainly on specialty items and services, including restaurants, boutique-style shops, and service-oriented businesses. The majority of downtown retailers provide a product or service that would not be found at the proposed Lowe’s Shopping Center project. Downtown stores are unlikely to compete directly with the stores planned for the project. Therefore, impacts on downtown Concord would be expected to be fewer than in the overall market or in other commercial corridors.

\textbf{(2) Cumulative Urban Decay Impacts.} CBRE Consulting identified approximately 755,629 square feet of cumulative development in the market area, consisting of the 334,112-square-foot Lowe’s project and other anticipated commercial development in Concord, Pleasant Hill, Martinez, and Walnut Creek totaling approximately 421,517 square feet. The cumulative projects included major competitive retail developments (greater than 10,000 square feet) in the market area that have a reasonable expectation of being fully operational by or near 2011 (i.e., the same time frame proposed by the Lowe’s project) (see Appendix F of this EIR for details).

\footnote{CBRE, pages 25-27.}
CBRE Consulting found that this cumulative development could divert a maximum of $204.0 million, or 3.3 percent of the total 2011 retail sales base, from existing market area retailers once stabilized sales are achieved. Most retail categories would experience a very low level of impact; the highest level of impact would be in the apparel and home furnishings and appliances categories. CBRE Consulting believes that the cumulative sales impact could be a conservative estimate, as the identified planned retail projects may not necessarily compete with the proposed Lowe’s project in terms of retail tenant mix and/or market area. In addition, many of the identified cumulative projects are still in the early stages of development and could be delayed, canceled, scaled back, or otherwise revised. In addition, steady gains in population in the years immediately following 2011 would help to partially offset the maximum potential impacts.

CBRE Consulting concluded that the project, combined with the identified cumulative development, would not contribute to urban decay in the market area.11

(3) **Conclusion.** In conclusion, while the project and identified cumulative development could result in some diverted sales and some closures of market area stores may occur, these events are not expected to lead to physical deterioration so prevalent and substantial that it impairs the proper utilization of affected real estate or the health, safety, and welfare of the surrounding community. Based upon these findings, CBRE Consulting concluded that the development of the project would not contribute to urban decay in the market area.

c. **Significant Urban Decay Impacts.** As described above, construction and operation of the project would not result in significant urban decay impacts either in and of itself or in combination with identified cumulative development.
L. GLOBAL CLIMATE CHANGE

This section begins by providing general background on climate change and meteorology. It then discusses the regulatory framework for global climate change, provides data on existing global climate setting and evaluates potential global climate-related emissions associated with the proposed project. Modeled project emissions are estimated based on project design, vehicle data and project trip generation.

1. Setting

The following discussion provides an overview of global climate change, its causes and its potential effects. The regulatory framework relating to global climate change is also summarized.

a. Global Climate Change Background. A description of global climate change and its sources are provided below.

(1) Global Climate Change. Global climate change is the observed increase in the average temperature of the Earth’s atmosphere and oceans in recent decades. The Earth’s average near-surface atmospheric temperature rose 0.6 ± 0.2° Celsius (°C) (1.1 ± 0.4° Fahrenheit [°F]) in the 20th century. The prevailing scientific opinion on climate change is that most of the warming observed over the last 50 years is attributable to human activities. The increased amounts of carbon dioxide (CO₂) and other greenhouse gases (GHGs) are the primary causes of the human-induced component of warming. They are released by the burning of fossil fuels, land clearing, agriculture, etc., and lead to an increase in the greenhouse effect.

GHGs are present in the atmosphere naturally, are released by natural sources, or formed from secondary reactions taking place in the atmosphere. They include CO₂, methane (CH₄), nitrous oxide (N₂O), and ozone (O₃). In the last 200 years, humans have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere, and enhancing the natural greenhouse effect, which is believed to be causing global warming. While manmade GHGs include CO₂, methane, and N₂O, some gases, like chlorofluorocarbons (CFCs), are completely new to the atmosphere.

Natural sources of CO₂ include the respiration (breathing) of animals and plants and evaporation from the oceans. Together, these natural sources release approximately 150 billion tons of CO₂ each year, far outweighing the 7 billion tons of manmade emissions from fossil fuel burning, waste incineration, deforestation, and other manmade sources. Nevertheless, natural removal processes, such as photosynthesis by land- and ocean-dwelling plant species, cannot keep pace with this extra input of manmade CO₂, and consequently, the gas is building up in the atmosphere.

Methane is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources include wetlands, termites, and oceans. Manmade sources include the mining and burning of fossil fuels; digestive processes in ruminant animals such as cattle; rice paddies; and the burying of waste in landfills. Total annual emissions of methane are approximately 500 million tons.

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with manmade emissions accounting for the majority. As with CO₂, the major removal process of atmospheric methane—chemical breakdown in the atmosphere—cannot keep pace with source emissions, and methane concentrations in the atmosphere are increasing.

California is a substantial contributor of global GHGs, emitting over 400 million tons of CO₂ a year.² Climate studies indicate that California is likely to see an increase of 3 to 4°F over the next century. Because primary GHGs have a long lifetime in the atmosphere, accumulate over time, and are generally well-mixed, their impact on the atmosphere is mostly independent of the 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:

- 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 (e.g., changes in ocean circulation, reduction in sunlight from the addition of GHGs and other gases to the atmosphere from volcanic eruptions)
- Human activities that change the atmosphere’s composition (e.g., through burning fossil fuels) and the land surface (e.g., deforestation, reforestation, urbanization, desertification)

The impact of anthropogenic activities on global climate change is readily apparent in the observational record. For example, surface temperature data shows 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.³ In addition, the atmospheric water vapor content has increased since at least the 1980s over land, sea, and in the upper atmosphere, consistent with the capacity of warmer air to hold more water vapor; ocean temperatures are warmer to depths of 3,000 feet; and a marked decline has occurred in mountain glaciers and snow pack in both hemispheres, polar ice, and ice sheets in both the Arctic and Antarctic regions.

Air trapped by ice has been extracted from core samples taken from polar ice sheets to determine the global atmospheric variation of CO₂, CH₄ and N₂O from before the start of industrialization (around 1750) to over 650,000 years ago. For that period, it was found that CO₂ concentrations ranged from 180 parts per million (ppm) to 300 ppm. For the period from around 1750 to the present, global CO₂ concentrations increased from a preindustrialization period concentration of 280 ppm to 379 ppm in 2005, with the 2005 value far exceeding the upper end of the preindustrial period range.

The primary effect of global climate change has been a rise in average global tropospheric temperature of 0.2°C per decade, determined from meteorological measurements worldwide between 1990 and 2005.⁴ Climate change modeling using 2000 emission rates shows that further warming could occur, which would induce further changes in the global climate system during the current century.⁵

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⁴ Ibid.
⁵ Ibid.
Changes to the global climate system and ecosystems and to California would include, but would not be limited to:

- The loss of sea ice and mountain snow pack, 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\(^6\)
- 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\(^7\)
- 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\(^8\)
- Decline of Sierra snowpack, which accounts for approximately half of the surface water storage in California, by 70 percent to as much as 90 percent over the next 100 years\(^9\)
- 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\(^10\)
- High potential for erosion of California’s coastlines and seawater intrusion into the delta and levee systems due to the rise in sea level\(^11\)

(2) Climate/Meteorology. Climate is affected by atmospheric conditions such as wind speed, wind direction, temperature, rainfall, etc. Climate in a specific area is determined by the terrain and geographical location. The City of Concord is located in the Diablo Valley region. The long and narrow Diablo Valley is bordered on the north by the Carquinez Strait and on the south by the San Ramon Valley, where it opens onto the Amador Valley.

The mountains on the west side of these valleys block much of the marine air from reaching the valleys. During the daytime, there are two predominant flow patterns; an up-valley flow from the north and a westerly flow (wind from the west) across the lower elevations of the Coast Range. On clear nights, surface inversions separate the flow of air into two layers; the surface flow and the upper layer flow. When this happens there are often drainage surface winds which flow down valley toward the Carquinez Strait.

Wind speeds in these valleys are generally low. Monitoring stations in Concord and Danville report annual average wind speeds of 5 miles per hour (mph). Average maximum wind speeds are 17 mph in Concord. However, winds can increase in the afternoon near San Ramon because it is located at the eastern edge of the Crow Canyon gap. Through this gap, polluted air from cities near the bay travels to the valley in the summer months.

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\(^6\) Ibid.
\(^8\) Ibid.
\(^9\) California Environmental Protection Agency, *Climate Action Team, Climate Action Team Report to Governor Schwarzenegger and the Legislature (Executive Summary)*, March 2006.
\(^10\) Ibid.
\(^11\) Ibid.
Air temperatures in these valleys are cooler in the winter and warmer in the summer than are temperatures further west, as these valleys are far from the moderating effect of the bay and ocean. Mean summer maximum temperatures are in the low- to mid-80’s. Mean winter minimum temperatures are in the high 30’s to low 40’s.

During spring and early summer, pollution produced during any one day is typically blown out of the project area through mountain passes or lifted by warm, vertical currents adjacent to mountain slopes. Air contaminants can be transported 60 miles or more from the project area by ocean air during the afternoons. From early fall to winter, the transport is less pronounced because of slower average wind speed and the appearance of drainage winds earlier in the day. During stagnant wind conditions, offshore drainage winds may begin by late afternoon. Pollutants remaining in the project area are trapped and begin to accumulate during the night and the following morning. A low morning wind speed in pollutant source areas is an important indicator of air stagnation and the potential for build up of primary air contaminants.

Temperature normally decreases with altitude, and a reversal of this atmospheric state, where temperature increases with altitude, is called an inversion. The height from the earth to the inversion base is known as the mixing height. Persistent low inversions and cool coastal air tend to create morning fog and low stratus clouds. Cloudy days are less likely in the eastern portions of the project area and are about 25 percent more likely along the coast. The vertical dispersion of air pollutants in the project area is limited by temperature inversions in the atmosphere close to the earth’s surface.

b. Regulatory Framework. The regulatory framework for GHG emissions and global climate change are discussed in this section.

(1) Federal Regulations. In February 2002, the United States government announced a comprehensive strategy to reduce the GHG intensity of the American economy by 18 percent over the 10-year period from 2002 to 2012. GHG intensity measures the ratio of GHG emissions to economic output. New and refined technologies offer great promise to reduce GHG emissions significantly. The federal government established the multiagency Climate Change Technology Program (CCTP) in February 2002 to accelerate the development and deployment of key technologies.

In February 2002, the United States government also announced a climate change research initiative to focus on key remaining gaps in climate change science. To meet this goal, the federal multiagency Climate Change Science Program (CCSP) was established to investigate natural and human-induced changes in the Earth’s global environmental system; to monitor, understand, and predict global change; and to provide a sound scientific basis for national and international decision-making. The United States Environmental Protection Agency’s (EPA’s) primary role in CCSP is evaluating the potential consequences of climate variability and the effects on air quality, water quality, ecosystems, and human health in the United States.

Currently there are no adopted regulations to control global climate change on a national level. However, recent authority has been granted to the EPA that may change the voluntary approach taken under the current administration to address this issue. On April 2, 2007, the United States Supreme Court ruled that the EPA has the authority to regulate CO₂ emissions under the federal Clean Air Act.
Consequently, the regulation of GHG emissions on a national level by the EPA is expected to be forthcoming, though the timing of any executive branch proposal(s) is unclear.

Over a decade ago, most countries joined an international treaty, the United Nations Framework Convention on Climate Change (UNFCCC), to begin to consider what can be done to reduce global warming and to cope with whatever temperature increases are inevitable. More recently, a number of nations have approved an addition to the treaty: the Kyoto Protocol, which has more powerful (and legally binding) measures.

Because it will affect virtually all major sectors of the economy, the Kyoto Protocol is considered to be the most far-reaching agreement on environment and sustainable development ever adopted. Most of the world’s countries eventually agreed to the Protocol, but some nations (including the United States) chose not to ratify it. Following ratification by Russia, the Kyoto Protocol entered into force on February 16, 2005.

As of December 2006, 169 countries have ratified the agreement. Participating nations are separated into Annex 1 countries (i.e., industrialized nations) and Non-Annex 1 countries (i.e., developing nations) that have different requirements for GHG reductions. The goal of the Protocol is to achieve overall emissions reduction targets for six GHGs by the period of 2008 to 2012. The six GHGs regulated under the Protocol are CO₂, CH₄, N₂O, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons. Each nation has an emissions reduction target for which they must reduce GHG emissions a certain percentage below 1990 levels (e.g., 8 percent reduction for the European Union, 6 percent reduction for Japan). The average reduction target for nations participating in the Kyoto Protocol is approximately 5 percent below 1990 levels. Although the United States has not ratified the Protocol, on February 14, 2002, it established a goal of an 18 percent reduction in GHG emissions intensity by 2012. GHG intensity is the ratio of GHG emissions to economic output (i.e., gross domestic product).

(2) State Regulations. In 1967, California’s 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 Air Resources Board (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 problem. The resulting State air quality standards set by the ARB continue to outpace the rest of the nation and have prompted the development of new antismog technology for industrial facilities and motor vehicles.

California’s major initiatives for reducing GHG emissions are outlined in Assembly Bill 32 (AB 32), the “Global Warming Solutions Act,” passed by the California State legislature on August 31, 2006, a 2005 Executive Order, and a 2004 ARB regulation to reduce passenger car GHG emissions. These efforts aim at reducing GHG emissions to 1990 levels by 2020, a reduction of approximately 25 percent, and then an 80 percent reduction below 1990 levels by 2050. The ARB has established the level of GHG emissions in 1990 at 427 million metric tons (MMT) of CO₂eq, therefore requiring a reduction of approximately 173 MMT of CO₂eq by 2020. The main strategies for making these reductions are outlined in the Scoping Plan, which when completed will include a range of GHG reduction actions that can include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system.
In June 2005, Governor Schwarzenegger established California’s GHG emissions reduction targets in Executive Order S-3-05. The Executive Order established the following goals: GHG emissions should be reduced to 2000 levels by 2010; GHG emissions should be reduced to 1990 levels by 2020; and GHG emissions should be reduced to 80 percent below 1990 levels by 2050. On January 18, 2007, California further solidified its dedication to reducing GHGs by setting a new Low Carbon Fuel Standard for transportation fuels sold within the State. Executive Order S-1-07 sets a declining standard for GHG emissions measured in CO₂ equivalent gram per unit of fuel energy sold in California. The target of the Low Carbon Fuel Standard is to reduce the carbon intensity of California passenger vehicle fuels by at least 10 percent by 2020.

Pursuant to the requirements of AB 32, the State’s reduction in GHG emissions will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012. The Act required ARB to identify a list of “discrete early action greenhouse gas reduction measures” by June 30, 2007 (Health and Safety Code section 38560(a)). Once on the list, these measures are to be developed into regulatory proposals, adopted by the Board, and made enforceable by January 1, 2010. Additional early action items include a comprehensive framework of regulatory and nonregulatory elements that will result in significant and effective GHG emission reductions. ARB must prepare a plan demonstrating how the 2020 deadline can be met by January 1, 2009, or earlier. However, as immediate progress in reducing GHGs can and should be made, AB 32 directed ARB and the newly created Climate Action Team (CAT) to identify a list of “discrete early action GHG reduction measures” that can be adopted and made enforceable by January 1, 2010. CAT is a consortium of representatives from State agencies who have been charged with coordinating and implementing GHG emission reduction programs that fall outside of ARB’s jurisdiction. In June 2007 ARB approved a list of 37 early action measures, including three discrete early action measures (Low Carbon Fuel Standard, Restrictions on High Global Warming Potential Refrigerants, and Landfill Methane Capture). The ARB adopted additional early action measures in October 2007 that tripled the number of discrete early action measures, including Smartway truck efficiency, Port electrification, reduction of perfluorocarbons from the semiconductor industry, reduction of propellants in consumer products, proper tire inflation, and sulfur hexafluoride (SF₆) reductions from the non-electricity sector. The combination of early action measures is estimated to reduce statewide greenhouse gas emissions by nearly 16 million metric tons.

Specific policies included in the ARB’s October 2007 Early Action Measure report that are relevant to this project include:

- **Guidance and Protocols for Local Governments to Facilitate GHG Emission Reductions.** Local governments have the power to affect the main sources of pollution directly linked to climate change through infrastructure investments, land use decisions, building codes, and municipal service management. Development of a State guidance document and local government protocols is needed to encourage and support greater and coordinated local action statewide.

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- Guidance/Protocols for Businesses to Facilitate GHG Emission Reductions. Through strategies such as efficient building practices, motor vehicle fleet changes, operational changes, fossil fuel switching, and recycling, local businesses can reduce their carbon footprint.

- Cool Communities Program. Develop research and real-world experience-based guidelines on actions that could be taken, documenting options, costs, and benefits. This would be a non-regulatory voluntary program with a set of guidelines to be adopted to foster the establishment or transition to cool communities in California. Programs for cool roofs, cool pavements, and shade trees and urban forests would be considered by ARB for implementation.

- Anti-Idling Enforcement. ARB adopted a diesel particulate air toxic control measure in June 2004 to control idling of diesel-fueled commercial motor vehicles. Enforcement commenced the following year. This rule prohibits, with some exceptions, the idling of diesel-fueled commercial motor vehicles for more than five minutes, and applies to both trucks and buses greater than 10,000 lbs. gross vehicle weight.

AB 32 requires ARB to prepare a Scoping Plan that contains the main strategies California will use to reduce the GHGs that cause climate change. In June 2008 ARB released an initial draft of the Scoping Plan, including the following relevant measures:

- Energy Efficiency. Maximize energy efficiency building and appliance standards, and pursue additional efficiency efforts. Reductions could be achieved through enhancements to existing programs such as increased incentives and even more stringent building codes and appliance efficiency standards. In addition, the use of solar water heaters can reduce natural gas use in homes and businesses.

Buildings are the second largest contributor to California’s greenhouse gas emissions. Green buildings offer a comprehensive approach to reducing greenhouse gas emissions that cross-cut multiple sectors including Energy, Water, Waste, and Transportation. Green buildings exceed minimum energy efficiency standards, decrease consumption of potable water, reduce solid waste during construction and operation, and incorporate sustainable and low-emitting materials that contribute to healthy indoor air quality.

- Local Government Actions and Regional Targets. Encourage local governments to set quantifiable emission reduction targets for their jurisdictions; recommend regional greenhouse gas emission reduction targets. The actions that local governments take individually, and through local and regional planning processes, can reduce greenhouse gas emissions associated with transportation, energy, waste/recycling, and water use. Local governments should build on existing strategies and adopt best practices to achieve greenhouse gas reductions through Community Energy, Community Waste and Recycling, Community Water and Wastewater Systems, Community Transportation, and Community Design.

To address GHG emission and global climate change in General Plans and CEQA documents, Senate Bill 97 (Chapter 185, 2007) requires the Governor’s Office of Planning and Research (OPR) to develop CEQA guidelines on how to address global warming emissions and mitigate project-specific GHG. OPR is required to prepare, develop, and transmit these guidelines on or before July 1, 2009.

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Until such a plan has been adopted, direction for evaluation of and potential mitigation for incremental project impacts to global warming is not available.

In a response to the transportation sector accounting for more than half of California’s CO₂ emissions, Assembly Bill 1493 (AB 1493, Pavley) was enacted on July 22, 2002. AB 1493 requires ARB to set GHG emission standards for passenger vehicles, light duty trucks, and other vehicles determined to be vehicles whose primary use is noncommercial personal transportation in the State manufactured in 2009 and all subsequent model years. In setting these standards, the ARB considered cost effectiveness, technological feasibility, and economic impacts. ARB adopted the standards in September 2004. When fully phased in, the near-term (2009 to 2012) standards would result in a reduction of approximately 22 percent in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013 to 2016) standards would result in a reduction of approximately 30 percent. Some currently used technologies that achieve GHG reductions include small engines with superchargers, continuously variable transmissions, and hybrid electric drive. To set its own GHG emissions limits on motor vehicles, California must receive a waiver from the EPA. However, in December 2007, the EPA denied the request from California for the waiver. In January 2008, the California Attorney General filed a petition for review of the EPA’s decision in the Ninth Circuit Court of Appeals, though no decision on that petition has been made. Thus, California cannot implement AB 1493 at this time.

(3) Local Policies. The City of Concord’s General Plan has policies related to Global Climate Change in its Parks, Open Space and Conservation (POS) element. Concord General Plan policies related to global climate change are listed and discussed in Table IV.A-1 in Section IV.A, Land Use and Planning Policy.

2. Impacts and Mitigation Measures

This section evaluates potential impacts to global climate change resulting from implementation of the proposed project. The evaluation of environmental effects presented in this section focuses on potential climate change impacts associated with the project’s increase in GHG emissions. Mitigation measures are proposed as necessary.

There is no CEQA statute, regulation or judicial decision that requires an EIR to analyze the greenhouse gas (GHG) emissions of a project or whether a project will have a significant impact on global warming. Senate Bill 97 directs the State Office of Planning and Research (OPR) to develop CEQA Guidelines to address GHG emissions to be adopted by January 1, 2010. OPR had not issued any formal regulations at the time this Draft EIR was completed. OPR did issue informal guidance in the form of a Technical Advisory in June 2008 on how to address climate change through CEQA review.

The recommended approach for GHG analysis included in OPR’s June 2008 release is to (1) identify and quantify GHG emissions, (2) assess the significance of the impact on climate change, and (3) if significant, identify alternatives and/or mitigation measures to reduce the impact below significance.¹⁶ Neither the CEQA statute nor guidelines prescribe thresholds of significance or a particular methodology for performing an impact analysis, and no state agency or local air quality management district

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has issued any regulations or standards of significance for the analysis of GHGs under CEQA; as with most environmental topics, this is left to the judgment and discretion of the lead agency.

**a. Criteria of Significance.** Land use projects may contribute to the phenomenon of global climate change in ways that would be experienced worldwide, and with some specific effects felt in California. However, no scientific study has established a direct causal link between individual land use project impacts and global warming. AB 32 requires statewide GHG emissions reductions to 1990 levels by 2020. Though these statewide reductions are now mandated by law, no generally applicable GHG emission threshold has yet been established, nor is formal regulatory agency guidance on global climate change analysis in CEQA documents anticipated to be available until mid-2009.

State CEQA Guidelines Section 15064(b) provides that the “determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data,” and further, that an “ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting.” The State CEQA Guidelines further indicate that even when thresholds are established, they may include “identifiable quantitative, qualitative or performance level of a particular environmental effect[].” (State CEQA Guidelines, Section 15064.7)

Some policy makers and regulators suggest that a zero emissions threshold would be appropriate when evaluating GHG’s and their potential effect on climate change. However, most feel that such an absolute threshold would be analytically impractical and would interfere with the ability of the economy to function. Further, prior CEQA case law makes clear that the “one additional molecule” rule is not consistent with CEQA. Such a rule also appears inconsistent with the State’s approach to mitigation of climate change impacts. AB 32 does not prohibit all new GHG emissions; rather, it requires a reduction in statewide emissions to a given level. Thus, AB 32 recognizes that GHG emissions will continue to occur.

Climate change is a global environmental problem in which (a) any given development project contributes only an infinitesimally small portion of any net increase in GHGs and (b) global growth is continuing to contribute large amounts of GHGs across the globe. Therefore, this study addresses climate change as a cumulative impact. To the extent possible, this study assesses potential sources of GHG emissions from the project and quantifies those emissions.

Bearing in mind that CEQA does not require “perfection” but instead “adequacy, completeness, and a good faith effort at full disclosure,” the analysis below is based on methodologies and information available to the City at the time the study was prepared. Estimation of GHG emissions in the future does not account for all changes in technology that may reduce such emissions; therefore, the estimates are based on past performance and represent a scenario that is worse than that which is likely to be encountered. Additionally, as explained in greater detail below, many uncertainties exist regarding the precise relationship between specific levels of GHG emissions and the ultimate impact on the global climate. Significant uncertainties also exist regarding potential mitigation strategies. Thus, while information is presented below to assist the public and the City’s decision makers in understanding the project’s potential contribution to global climate change impacts, the information available to the City is not sufficiently detailed to allow a direct comparison between particular project

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characteristics and particular climate change impacts, nor between any particular proposed mitigation
measure and any reduction in climate change impacts.

Because no applicable numeric thresholds have yet been defined, and because the precise causal link
between an individual project’s emissions and global climate change has not been developed, it is
reasonable to conclude that an individual development project cannot generate a high enough quantity
of GHG emissions to affect global climate change. However, individual projects incrementally
contribute toward the potential for global climate change on a cumulative basis in concert with all
other past, present, and reasonably foreseeable future projects. This study identifies qualitative
factors to determine whether this project’s emissions should be considered cumulatively significant.
Until the City or other regulatory agency devises a generally applicable climate change threshold, the
analysis used in this study may or may not be applicable to other City projects.

This report analyzes whether the project has a cumulatively significant contribution to the impact of
global climate change under the following qualitative standard:

- Whether the proposed project conflicts with or obstructs the implementation of greenhouse gas
  reduction measures under AB 32 or other state regulations.

If a project implements reduction strategies identified in AB 32, the Governor’s Executive Order S-3-
05, or other strategies to help toward reducing GHGs to the level proposed by the Governor, it could
reasonably follow that the project would not result in a significant contribution to the cumulative
impact of global climate change.

b.  Less-than-Significant Impacts with Mitigation. GHG emissions associated with the project
would occur over the short term from construction activities, consisting primarily of emissions from
equipment exhaust. There would also be long-term regional emissions associated with project-related
vehicular trips and stationary source emissions such as natural gas used for heating. GHG emissions
estimates are provided herein for informational purposes only, as there is no established quantified
GHG emissions threshold.

(1)  Construction Impacts. Construction activities produce combustion emissions from
various sources such as site grading, utility engines, on-site heavy-duty construction vehicles, and
equipment hauling materials to and from the site, asphalt paving, and motor vehicles transporting the
construction crew. Exhaust emissions from on-site construction activities would vary daily as con-
struction activity levels change.

It is anticipated that that development of the project site would require construction grading and
paving of the building pad and site and site preparation. While both grading and construction phases
involve heavy-duty diesel-powered equipment and both activities generate large amounts of fugitive
dust, the grading phase typically generates greater overall emissions due to the larger equipment
needed for the earthmoving.

The only GHG with well-studied emissions characteristics and published emissions factors for con-
struction equipment is CO₂. Using the URBEMIS 2007 model it is estimated the average daily CO₂
emissions associated with construction equipment exhaust for the proposed project would be 4,975
pounds per day. Model output sheets are included in Appendix C.
The project would be required to implement the construction exhaust control measures listed in Mitigation Measure AIR-1 of Section IV.C, including minimization of construction equipment idling and proper engine tuning and exhaust controls. Both of these measures would reduce GHG emissions during the construction period.

Architectural coatings used in construction of the proposed project may contain volatile organic compounds (VOCs) that are similar to reactive organic gases (ROG) and are part of ozone precursors. However, there are no significant emissions of GHGs from architectural coatings.

(2) Long-Term Project-Related Emission Impacts. At build-out, the project would consist of approximately 344,112 square feet of building area. The stationary source emissions from these land uses would primarily derive from their consumption of natural gas and electricity. Based on the traffic study conducted for the proposed project, the project would generate 14,737 daily trips. The calculated annual operational emissions of CO₂, CH₄, and N₂O (from both project-related vehicles and stationary sources) for the proposed project are shown in Table IV.L-1. The calculation input/output sheets are included in Appendix C.

Table IV.L-1: Long-Term Project Operational Emissions of GHGs

<table>
<thead>
<tr>
<th>Emission Source</th>
<th>CO₂</th>
<th>CH₄</th>
<th>N₂O</th>
<th>CO₂eq</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicles</td>
<td>19,700</td>
<td>1.39</td>
<td>2.12</td>
<td>20,400</td>
</tr>
<tr>
<td>Electricity Production</td>
<td>1490</td>
<td>0.0164</td>
<td>0.0091</td>
<td>1490</td>
</tr>
<tr>
<td>Natural Gas Combustion</td>
<td>700</td>
<td>0.013</td>
<td>0.013</td>
<td>700</td>
</tr>
<tr>
<td>Total Annual Emissions</td>
<td>21,900</td>
<td>1.42</td>
<td>2.14</td>
<td>22,560</td>
</tr>
</tbody>
</table>


Global warming potentials (GWPs) are used to compare the abilities of different GHGs to trap heat in the atmosphere. GWPs are based on the radiative efficiency (heat-absorbing ability) of each gas relative to that of CO₂, as well as the decay rate of each gas (the amount removed from the atmosphere over a given number of years) relative to that of CO₂. The GWP provides a construct for converting emissions of various gases into a common measure, which allows climate analysts to aggregate the radiative impacts of various GHGs into a uniform measure denominated in carbon or CO₂ equivalents (CO₂eq). The project’s total CO₂eq emissions represents 0.026 percent of the entire Bay Area’s 2002 total CO₂eq emissions, and only 0.0042 percent of the State’s 2004 total CO₂eq emissions.

The emissions from vehicle exhaust comprise approximately 90 percent of the total CO₂eq emissions. Regulation of vehicle emissions is controlled by State and federal laws, and the City does not have the authority to regulate these emissions under its land use authority. However, the emissions from project-related vehicles will be reduced by the mitigation measures identified in the Air Quality section of Chapter IV (Mitigation Measure AIR-2, page 126). The project is also located adjacent to two bus routes, and two adjacent bus stops are proposed as part of the project that would allow for employees and some customers to arrive and depart the site through the use of public transit. The

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The project’s consistency with the General Plan policies identified in Table IV.A-1 in Section IV.A will also result in a reduction of vehicle emissions relating to climate change.

The remaining 10 percent of the CO₂eq emissions are primarily from building heating systems and increased regional power plant electricity generation due to the project’s electrical demands. Development of the project would comply with existing State and federal regulations regarding the energy efficiency of buildings, appliances, and lighting, which would reduce the project’s electricity demand. The new buildings constructed in accordance with current energy efficiency standards would be more energy efficient than the older industrial buildings that previously existed on the site.

In addition, the Lowe’s store is described in sufficient detail to illustrate that it would incorporate as part of the project the following additional specific green building and sustainable features that will reduce GHG emissions through a reduction in energy use and resource conservation:

- **Energy Efficiency.** Skylights would be used within the roofs to reduce the demand upon electricity during daylight hours. Skylights would generally be located in the merchandise areas. Dimmers connected to photo cells would be used to reduce energy consumption.

- **Refrigerant Selection.** Refrigerants would be selected to minimize direct impact on ozone depletion and global warming.

- **HVAC System.** The HVAC systems for the project would be CFC free to reduce the impacts to the environment from a possible refrigerant release. The system would also be designed to meet indoor air quality performance standards for ventilation standards as well as maintenance of the duct work in a clean and dust free manner prior to and during construction. An efficient control and thermostat system would also be utilized to further reduce the demand for energy.

- **Use of Native Plant Materials.** The project’s Plant Material List would include as many California native plants as possible, dependent upon availability and appropriate design situation. Plants would be selected for their compatibility with the project’s climate zone and other plant material. Once the native planting materials are established, the project’s landscaping would utilize less water than a landscape solution utilizing typical ornamental plant material. Over the long term, such a landscape solution would conserve water.

- **Water Efficient Plumbing Fixtures.** The restroom facilities and other water using fixtures would utilize low flush or low water flow faucets in the design in order to conserve water. The design of the restrooms may also include automatic shut off fixtures and faucets in order to conserve water.

- **Low Water Irrigation System.** A low water use, electronically-controlled, irrigation system would be utilized on the project. Depending upon the mineral content of the water, a drip irrigation system with emitters providing irrigation to each plant may be an appropriate system for the project. If the mineral content is high, a combination spray/bubbler system to irrigate the project’s landscape areas would be utilized. Shrub and ground cover areas would be irrigated with spray heads. Trees would be irrigated with a separate bubbler system. Automatic controllers selected for the project would include a rain sensor to shut the system down in times of inclement weather to prevent needless watering. The irrigation system would also incorporate soil moisture sensors strategically located around the site to monitor the moisture content in the soil. When the soil moisture reaches a certain level, the moisture sensors would shut the irrigation system down...
to prevent over-watering. Likewise, when the moisture level drops to a level where plants start to stress, the system would turn the system on.

- **Tree Canopy Shading of Parking Areas.** The project’s landscape plan has been designed to promote tree canopies to shade asphalt parking lots. The shading provided by the tree canopy would help to improve air quality by reducing the heat island effect of the parking lot. Tree shading would also help to create a pleasant environment that encourages walking or biking.

- **Promotion of Alternative Transit.** The Project includes two new bus stops and a bicycle lane along property frontage and sidewalks throughout Project site for pedestrian access.

The California Environmental Protection Agency Climate Action Team (CAT) and the California Air Resources Board (ARB) have developed several reports to achieve the Governor’s GHG targets that will build on voluntary actions of California businesses, local government and community actions, and State incentive and regulatory programs. These include the CAT’s 2006 “Report to Governor Schwarzenegger and the Legislature”, ARB’s 2007 “Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California”, and ARB’s “Climate Change Draft Scoping Plan: a framework for change”.

The reports identify strategies to reduce California’s emissions to the levels proposed in Executive Order S-3-05 and AB 32 that are applicable to proposed project. The strategies that apply to the project are contained in Table IV.L-2, which discusses the extent to which the project complies with the strategies to help California reach the emission reduction targets.

The various strategies set forth above would reduce greenhouse gas emissions. In many cases these strategies are part of the project or required mitigation measures. In some cases, they are a plan that, requires approval by the ARB Board. The measures must be adopted through the normal rulemaking process with the necessary public review and input. In some cases, legislative action may be necessary. The specifics of these strategies and actions are not available at the time of publication of this EIR.

The strategies listed in Table IV.L-2 are either part of the project, required mitigation measures, or requirements under local or state ordinances. With implementation of these strategies/measures, the project’s GHG emissions would be reduced and minimized. In addition, the project is subject to all the regulatory requirements including the City’s Standard Conditions of Approval, which would also reduce GHG emissions of the project. Overall, the project would implement GHG reduction strategies and not conflict with or obstruct implementation of reduction measures identified in AB 32, the Governor’s Executive Order S-3-05, and other strategies to help reduce GHGs to the level proposed by the Governor. Therefore, the project’s incremental contribution to climate change impacts would be less than significant.
### Table IV.L-2: Project Compliance with Greenhouse Gas Emission Reduction Strategies

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Project Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vehicle Climate Change Standards.</strong>&lt;sup&gt;19&lt;/sup&gt; AB 1493 (Pavley) required the state to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. Regulations were adopted by the ARB in September 2004.</td>
<td><strong>Compliant.</strong> The vehicles that access the project will be in compliance with any vehicle standards that the ARB adopts.</td>
</tr>
<tr>
<td><strong>Building Energy Efficiency Standards in Place and in Progress.</strong>&lt;sup&gt;20&lt;/sup&gt; Public Resources Code 25402 authorizes the Energy Commission to adopt and periodically update its building energy efficiency standards (that apply to newly constructed buildings and additions to and alterations to existing buildings).</td>
<td><strong>Compliant.</strong> The proposed project will be required to comply with the updated Title 24 standards for building construction including exterior lighting requirements. Some of the changes required in the new standards include 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. As described above, the proposed project includes other measures which reduce energy and water use and promote alternative transportation.</td>
</tr>
<tr>
<td><strong>Energy Efficiency.</strong>&lt;sup&gt;21&lt;/sup&gt; Maximize energy efficiency building and appliance standards, and pursue additional efficiency efforts. Reductions could be achieved through enhancements to existing programs such as increased incentives and even more stringent building codes and appliance efficiency standards. Green buildings offer a comprehensive approach to reducing greenhouse gas emissions that cross-cut multiple sectors including Energy, Water, Waste, and Transportation.</td>
<td><strong>Compliant.</strong> The proposed project will be required to comply with the updated Title 24 standards for building construction including exterior lighting requirements. Some of the changes required in the new standards include 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. As described above, the proposed project includes other measures which reduce energy and water use and promote alternative transportation.</td>
</tr>
<tr>
<td><strong>Appliance Energy Efficiency Standards in Place and in Progress.</strong>&lt;sup&gt;22&lt;/sup&gt; Public Resources Code 25402 authorizes the Energy Commission to adopt and periodically update its appliance energy efficiency standards (that apply to devices and equipment using energy that are sold or offered for sale in California).</td>
<td><strong>Compliant.</strong> Appliances that are purchased for the project will be consistent with existing energy efficiency standards.</td>
</tr>
<tr>
<td><strong>Measures to Improve Transportation Energy Efficiency.</strong>&lt;sup&gt;23&lt;/sup&gt; Builds on current efforts to provide a framework for expanded and new initiatives including incentives, tools, and information that advance cleaner transportation and reduce climate change emissions.</td>
<td><strong>Compliant.</strong> The proposed project promotes programs which encourage bicycling and public transportation use through site planning and design elements. The proposed project includes a bicycle lane and two new bus stops along the site frontage, and sidewalks throughout project site. Air Quality mitigation measure AIR-2 also requires other measures to promote alternative transit.</td>
</tr>
<tr>
<td><strong>Smart Land Use and Intelligent Transportation Systems (ITS).</strong>&lt;sup&gt;24&lt;/sup&gt; Smart land use strategies encourage jobs/housing proximity, promote transit-oriented development, and encourage high-density residential/commercial development along transit corridors. ITS is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods and services.</td>
<td><strong>Compliant.</strong> The proposed project locates commercial uses near transit stops on local transportation corridors, which can be considered smart land use. The proposed project provides goods to those located near the project site thereby improving the efficiency of goods movement. The project is consistent with the City’s General Plan and would redevelop an obsolete and now vacant industrial site. The project is an infill project adjacent to existing transportation systems.</td>
</tr>
</tbody>
</table>

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<sup>19</sup> California Environmental Protection Agency. 2006. *Climate Action Team Report to Governor Schwarzenegger and the Legislature*. March.

<sup>20</sup> Ibid.


<sup>22</sup> California Environmental Protection Agency. 2006. *Climate Action Team Report to Governor Schwarzenegger and the Legislature*. March.

<sup>23</sup> Ibid.

<sup>24</sup> Ibid.
### Table IV.L-2 Continued

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Project Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Water Use Efficiency.</strong> 25 Approximately 19% of all electricity, 30% of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce greenhouse gas emissions.</td>
<td><strong>Compliant.</strong> The proposed project will incorporate water-conservation measures, including water-efficient landscaping and design, and will comply with water conservation measures required by the City of Concord.</td>
</tr>
<tr>
<td><strong>Guidance/Protocols for Businesses to Facilitate GHG Emission Reductions.</strong> 26 Through strategies such as efficient building practices, motor vehicle fleet changes, operational changes, fossil fuel switching, and recycling, local businesses can reduce their carbon footprint.</td>
<td><strong>Compliant.</strong> As described above, the proposed project includes a green program to reduce GHG emissions. Solid waste reduction and recycling measures will be implemented as required by City ordinance (see discussion in Public Services chapter).</td>
</tr>
<tr>
<td><strong>Anti-Idling Enforcement.</strong> 27 ARB adopted a diesel particulate air toxic control measure in June 2004 to control idling of diesel-fueled commercial motor vehicles. Enforcement commenced the following year. This rule prohibits, with some exceptions, the idling of diesel-fueled commercial motor vehicles for more than five minutes, and applies to both trucks and buses greater than 10,000 lbs. gross vehicle weight.</td>
<td><strong>Compliant.</strong> Vehicles that access the site will comply with all anti-idling regulations. Air Quality Mitigation Measure AIR-1 restricts construction equipment idling time.</td>
</tr>
</tbody>
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**3 Impacts to the Proposed Project from Global Climate Change.** Local temperatures could increase in time as a result of global climate change, with or without implementation of the proposed project. This increase in temperature could lead to other climate effects including, but not limited to, increased flooding due to increased precipitation and runoff and a decrease in the Sierra snowpack. Since the project site is not located in an area that would be subject to coastal or other flooding resulting from climate change, the potential effects of climate change (e.g., effects of flooding on the project site due to sea level rise) on the proposed project would not be significant.

**c Significant Impacts.** The proposed project would not result in any cumulatively considerable contribution to global climate change with the implementation of measures that are part of project or required under mitigation measures or applicable state or local regulations.
V. ALTERNATIVES

The CEQA Guidelines require the analysis of a range of reasonable alternatives to the project, or to the location of the project, that would feasibly attain most of the project’s basic objectives and avoid or substantially lessen any of the significant effects of the project. The 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. CEQA states that an EIR should not consider alternatives “whose effect cannot be ascertained and whose implementation is remote and speculative.”

The proposed project has been described and analyzed in the previous chapters, with an emphasis on significant impacts resulting from the project and mitigation measures recommended to avoid these impacts. The following discussion is intended to inform the public and decision-makers of the relative impacts of three potentially feasible alternatives to the proposed project. A discussion of the environmentally superior alternative is also provided.

The three alternatives to the proposed project that are discussed in this chapter include the following:

- The **No Project alternative** assumes the continuation of existing conditions within the project site.
- The **Auto Sales and Service alternative** assumes the 28±-acre project site would be redeveloped with auto dealerships and related auto service uses, consistent with the General Plan designation for the area.
- The **Commercial Recreation alternative** assumes the 28±-acre project site would be redeveloped with a mix of various commercial recreation facilities, which is also consistent with the General Plan designation for the area.

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 impacts associated with the proposed project. The discussion includes a determination of whether or not each alternative would reduce, eliminate, or create new significant impacts.

In some cases, the alternatives analysis in an EIR for a project like the Lowe’s 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., 28± acres) that are assembled and would accommodate the proposed development. It should also be noted that the single significant unavoidable impact of the proposed project—regional air emissions that would exceed Bay Area Air Quality Management District (BAAQMD) thresholds—would certainly not be lessened by development of the proposed project at an alternate location.

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1 CEQA Guidelines, 2008, Section 15126.6.
Other alternatives that were considered but rejected include (1) a reduced-size shopping center, and (2) a hotel with related uses. A smaller shopping center would not significantly reduce air quality or other environmental impacts, since areas of the site not developed as shopping center would probably be devoted to parking or to other land uses that would generate traffic. A reduced-size shopping center also would not provide the large-scale regional commercial uses called for by the Concord General Plan land use designation for the site or meet the project objective of developing “a retail power center with two major commercial retail tenants.” Similarly, developing a hotel complex on the site would not significantly reduce air quality or other impacts since, given the relatively large size of the site, the development would likely include a large hotel, a convention center, restaurants, and other traffic-generating uses. A hotel alternative also would not meet project objectives for retail commercial development on the site.

A. **NO PROJECT ALTERNATIVE**

The No Project alternative is described and analyzed in the following section.

1. **Principal Characteristics**

Under the No Project alternative, the project site would not be redeveloped and would remain in its existing condition. Since the site currently contains only one tenant, this alternative assumes that the site would remain almost completely vacant and that the existing structures on the site would remain, with no improvements other than periodic basic maintenance.

The No Project alternative would not achieve any of the objectives of the proposed project. It would not:

- Design a project consistent with the City of Concord General Plan, Zoning Code, and Central Concord Redevelopment Plan.
- Develop a retail power center with two major commercial retail tenants as anchors with additional complementary uses in out-parcel commercial pads.
- Introduce commercial retail uses into the North Concord area to serve residents of this area and surrounding communities and rejuvenate the older industrial area.
- Develop a major commercial retail project adjacent to and visible from the freeway.
- Develop a project with a high quality architectural design with features that soften the scale and mass of the buildings. Provide landscaping to soften the design and create a pleasant, attractive appearance.
- Develop a shopping center that minimizes potential conflicts among users.
- Provide stores that will contribute significant economic and other benefits to the City and community in terms of increased public revenues, employment opportunities, shopping opportunities and community programs.

2. **Analysis of the No Project Alternative**

The potential impacts of the No Project alternative are described below.
a. **Land Use and Planning Policy.** Under the No Project alternative, existing structures associated with the former industrial, automotive, and outdoor storage uses on the site would remain, resulting in long-term land use conflicts as the area surrounding the project site redevelops with new business park and regional commercial uses as designated by the Concord General Plan. Further, the existing site is inconsistent with the General Plan’s vision for parcels designated Regional Commercial (e.g., regional shopping centers, big box retail, home improvement sales and service). The existing site does not conform to the development standards of the Concord Zoning Ordinance in that it does not provide an adequate, well-oriented parking area, site landscaping, or screening of outdoor uses. Also, counter to the purpose of the Community Design Guidelines, the existing site does not provide high-quality site and architectural design, nor does it improve the impression of the community as seen from the SR 4 corridor or Arnold Industrial Way, nor does it achieve harmony between the built and urban environments. The existing blighted conditions on the site would continue to exist, inconsistent with the goals of the Central Concord Redevelopment Plan, which includes the site. The No Project alternative would not affect the site’s conformance with the Buchanan Field Land Use Compatibility Plan in that no new building construction would occur in the portion of the site overlain by Safety Zone 4. Therefore, taken as a whole, land use and planning policy impacts would be greater under the No Project alternative than they would be with the project as proposed.

b. **Transportation and Circulation.** Implementation of this alternative would not cause any increase in traffic. As a result, no impacts related to transportation and circulation would result from implementation of the No Project alternative. Impacts related to vehicular traffic, circulation, and parking would be essentially the same as the Existing Condition (2008) and Cumulative (Year 2030) Without Project Condition evaluated in Section IV.B, Transportation and Circulation. Transportation and circulation impacts of the No Project alternative would be less than those of the project as proposed.

c. **Air Quality.** Implementation of the No Project alternative would not result in construction activity within the project site. Similarly, this alternative would not result in an increase in vehicle trips above that already experienced at the project site, and therefore would not result in the increase of mobile pollutants attributed to the proposed project. The No Project alternative would not substantially increase pollutant or odor concentrations and would not generate dust, exhaust, and organic emissions during construction activities. Air quality impacts of the No Project alternative would therefore be less than those of the project as proposed.

d. **Noise.** Construction activity would not take place as part of the No Project alternative. Therefore, the No Project alternative would not expose surrounding land uses to short-term noise during construction. Noise at the site would not increase above that already occurring on the site (or above the levels associated with the previous industrial uses of the site). Noise impacts of the No Project alternative would therefore be less than those of the project as proposed.

e. **Cultural and Paleontological Resources.** Under the No Project alternative, no development would occur and the site would not be subject to additional grading. Therefore, no potential impacts relative to cultural and paleontological resources would result from implementation of this alternative. Impacts of the No Project alternative would be less than those of the project as proposed.
f. **Geology, Soils and Seismicity.** Under this alternative, the potential adverse effects identified in Section IV.F, Geology, Soils and Seismicity, would not apply because no new development would occur. Geology-related impacts of the No Project alternative would therefore be reduced compared to the project as proposed.

g. **Biological Resources.** Since no development would occur on the site under the No Project alternative, no heritage trees would be removed and the sensitive bat species that may be roosting in on-site buildings and bird species that may be nesting in on-site trees would not be disturbed. The potentially adverse effects identified in Section IV.G, Biological Resources, would not apply. Biological resource impacts of the No Project alternative would therefore be less than those of the project as proposed.

h. **Hydrology and Storm Drainage.** As described in Section IV.H, Hydrology and Storm Drainage, the site is currently almost completely covered with impervious surfaces (i.e., asphalt paving and industrial buildings), and water would continue to drain from the site. However, demolition of existing uses and new development at the project site (such as that proposed for the project) would be subject to requirements to control and treat stormwater runoff and improve the quality of water draining from the site. Because these measures would not be put into effect under the No Project alternative, impacts associated with stormwater drainage would be greater under this alternative than under the proposed project. Hydrological impacts during construction would not occur under this alternative. Hydrology-related impacts of the No Project alternative would therefore be less than those of the project as proposed.

i. **Public Services and Utilities.** As described in Section IV.I, Public Services and Utilities, police and fire services would still be necessary to monitor and respond to incidents at the site under the No Project alternative. However, the proposed project would improve security conditions by creating more activity at the site as well as by providing measures such as security fencing and fire and burglary detection systems. The project would also provide new buildings with current fire suppression technology, as required by the Building Code. As a result, crime and the potential for fire incidents would be reduced from implementation of the proposed project. As no new development would occur under this alternative, there would not be the need for improved utilities such as water, wastewater, solid waste collection and disposal, or telecommunication services to serve the existing industrial buildings. Therefore, compared to the proposed project, this alternative would have greater impacts related to public services and fewer impacts related to utilities.

j. **Public Health and Safety/Hazardous Materials.** Since no development would occur on the site under this alternative, no impacts associated with the exposure of construction workers to soil or groundwater contaminants or demolition materials containing lead or asbestos would occur. Potential adverse effects identified in Section IV.J, Public Health and Safety/Hazardous Materials, would not result from this alternative. Health and safety-related impacts of the No Project alternative would therefore be less than those of the project as proposed.

k. **Urban Decay.** Under the No Project alternative, the project site would continue to be an underused industrial site that does not provide needed retail commercial services to the North Concord area. Temporary diversion of sales from existing retail developments, as anticipated with the proposed project, would not occur under the No Project alternative, however. Overall, the impact of
the No Project alternative would be greater than that of the proposed project, which would eliminate blighted conditions on the site and have less-than-significant urban decay impacts.

1. Global Climate Change. Under the No Project alternative, no construction would occur at the site, and there would be no new development generating new air emissions due to new vehicle trips or gas or electricity consumption. Impacts of the No Project alternative would be less than those of the project as proposed.

In summary, because the No Project alternative would not involve any site demolition or construction, it would not create these short-term construction-related impacts. With no shopping center development on the site, longer-term traffic, noise, and air quality impacts also would not occur. As discussed above, the No Project alternative would have lesser impacts than the project in the areas of traffic, air quality, noise, cultural and paleontological resources, geology, biological resources, hydrology, public utilities, public health and safety/hazardous materials, and global climate change. However, the No Project alternative would have greater impacts than the proposed project relating to land use, urban decay, and public safety.

B. AUTO SALES AND SERVICE ALTERNATIVE

The following section describes and analyzes the Auto Sales and Service alternative.

1. Principal Characteristics

The Auto Sales and Service alternative would develop the site with auto dealerships and related auto service uses consistent with the project site’s General Plan Regional Commercial designation. Based on site development information for other auto dealerships in Concord, it is assumed that this alternative would develop approximately the same building square footage on the site as proposed by the project (i.e., approximately 330,000 square feet), resulting in approximately the same floor area ratio\(^2\) (i.e., 0.27).

The existing industrial, automotive, and outdoor storage uses on the site would be demolished and removed under this alternative. The specific locations for individual uses on the site under this alternative have not been established.

The Auto Sales and Service alternative could achieve five of the project objectives:

- Design a project consistent with the City of Concord General Plan, Zoning Code, and Central Concord Redevelopment Plan.
- Introduce commercial retail uses into the North Concord area to serve residents of this area and surrounding communities and rejuvenate the older industrial area.
- Develop a major commercial retail project adjacent to and visible from the freeway.
- Develop a project with a high quality architectural design with features that soften the scale and mass of the buildings. Provide landscaping to soften the design and create a pleasant, attractive appearance.

\(^2\) Floor area ratio (FAR) is the ratio of the total floor area of buildings on a site to the total size of the site.
• Provide stores that will contribute significant economic and other benefits to the City and community in terms of increased public revenues, employment opportunities, shopping opportunities and community programs.

The Auto Sales and Service alternative would not achieve the remaining two objectives of the proposed project. It would not:
• Develop a retail power center with two major commercial retail tenants as anchors with additional complementary uses in out-parcel commercial pads.
• Develop a shopping center that minimizes potential conflicts among users.

2. Analysis of the Auto Sales and Service Alternative
The Auto Sales and Service alternative is evaluated below.

a. Land Use and Planning Policy. Under the Auto Sales and Service alternative, the existing industrial site would be redeveloped with auto dealerships and related auto service uses. The Auto Sales and Service alternative would be consistent with the land uses allowed by the Regional Commercial General Plan designation. This alternative would also be constructed at a floor area ratio (FAR) that is consistent with the Regional Commercial designation.

As a new development, this alternative would conform to all Zoning Ordinance and Community Design Guidelines standards and policies. The Auto Sales and Service alternative would require Contra Costa County Airport Land Use Commission review for consistency for conformance with the Buchanan Field Land Use Compatibility Plan to ensure that any structure constructed in the portion of the site underlain by Safety Zone 4 did not exceed four stories of habitable space and 123 feet in height. This alternative would not divide an existing neighborhood or introduce land uses that would conflict with surrounding uses, as it is assumed that the new uses could be configured so that the new development is complementary with the adjacent uses. This alternative would eliminate existing on-site blighted conditions consistent with the goals of the Central Concord Redevelopment Plan.

Potential land use impacts resulting from development under this alternative would be similar to those of the proposed project.

b. Transportation and Circulation. Trip generation estimates were developed based on methodologies described in Section IV.B, Transportation and Circulation, of this EIR. Table V-1 shows weekday AM and PM peak hour trip generation for the Auto Sales and Service alternative. As indicated in this table, the total amount of traffic added to the roadway under this alternative would be greater than the proposed project in the weekday AM peak hour and less than for the proposed project in the weekday PM peak hour. Because PM peak hour traffic conditions are generally worse than AM peak hour conditions this alternative would result in fewer

<table>
<thead>
<tr>
<th>Land Use</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Car Sales (ITE Code 841)</td>
<td>284 392 676 340 531 871</td>
<td></td>
</tr>
<tr>
<td>Net New Vehicle Trips</td>
<td>284 392 676 340 531 871</td>
<td></td>
</tr>
<tr>
<td>Proposed Project Vehicle Trips</td>
<td>246 179 425 625 649 1,274</td>
<td></td>
</tr>
<tr>
<td>Difference in Vehicle Trips</td>
<td>+38 +213 +251 -285 -118 -403</td>
<td></td>
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</tbody>
</table>

Note: ITE = Institute of Transportation Engineers
transportation impacts than the proposed project. This conclusion is supported by the average daily trip estimate for the Auto Sales and Service alternative which, at 11,002 trips, would represent 3,735 fewer trips than the 14,737 trips generated by the project.

Similar to the proposed project, it is assumed that the project applicant would construct necessary sidewalks, bicycle lanes, and other amenities in compliance with adopted City policies, plans, and programs. Therefore, impacts on transit, pedestrian, and bicycle facilities for the Auto Sales and Service alternative would be less than significant, similar to the proposed project.

The day-to-day construction operations for the Auto Sales and Service alternative would include traffic impacts related to construction employee trips and parking, demolition material exportation, and construction material importation. These impacts would be similar to those discussed in Section IV.B, of this EIR. Implementation of the mitigation measures related to construction activities identified for the proposed project would reduce potential construction impacts to a less-than-significant level.

Parking would be required on-site for the auto sales and service uses. However, it is assumed that all required parking could be accommodated on site. As a result, impacts related to parking would be similar to those of the proposed project.

c. **Air Quality.** Development of the Auto Sales and Service alternative would result in construction activity within the project site and traffic levels generally comparable to those of the proposed project (11,002 vehicular trips compared to 14,737 trips generated by the project). Due to the reduction in vehicular trips generated from this alternative, its impact on air quality would be slightly reduced from that resulting from the proposed project as described for the proposed project in Section IV.C, Air Quality. Therefore, local and regional air quality impacts would be the same or less than those identified for the project.

d. **Noise.** Demolition and construction activities for this alternative would be similar to those of the project, as described in Section IV.D, Noise. Because the Auto Sales and Service alternative would generate fewer PM peak hour vehicle trips than the proposed project, traffic noise levels along the roadways in the project area would be slightly less than the proposed project. Similar to the proposed project, auto sales and service uses developed under this alternative would need to be designed and located to reduce potential noise impacts on adjacent properties. Noise impacts associated with this alternative would be similar to those of the proposed project.

e. **Cultural and Paleontological Resources.** Under the Auto Sales and Service alternative, the site would be subject to grading and site preparation. Potential impacts and mitigation measures relative to the significant cultural resources on the site would be similar to those identified for the proposed project in Section IV.E, Cultural and Paleontological Resources.

f. **Geology, Soils and Seismicity.** This alternative would require similar remediation and general grading as the proposed project. The potential impacts and mitigation measures identified for the proposed project in Section IV.F, Geology, Soils and Seismicity, would also apply to this alternative. The impacts of this alternative would be similar to those of the proposed project.

g. **Biological Resources.** Under the Auto Sales and Service alternative, the site would be subject to building demolition and removal of all existing trees. Potential impacts relative to the significant
biological resources on the site would be similar to those identified for the proposed project and could be mitigated by the measures identified in Section IV.G, Biological Resources.

**h. Hydrology and Storm Drainage.** Similar to the proposed project, the Auto Sales and Service alternative would not result in any significant impacts in relation to reduction of groundwater supplies, dam failure inundation zones, placement of structures in flood zones, or exposure to sea level rise, extremely high tides, or tsunamis. Hydrological impacts associated with major construction activities, stormwater runoff, and water quality would be similar to those identified for the proposed project, and the mitigation measures identified in Section IV.H, Hydrology and Storm Drainage, would apply to this alternative.

**i. Public Services and Utilities.** The addition of approximately 330,000 square feet of auto sales and service space would result in a similar demand for police, fire and emergency services, compared to the proposed project. Similarly, impacts on utilities such as water, wastewater, solid waste collection and disposal, and telecommunication services would be comparable to those described for the project in Section IV.I, Public Services and Utilities.

**j. Hazards/Public Health and Safety.** For the Auto Sales and Service alternative, demolition, site preparation, and grading would occur in a similar manner to that of the proposed project. Therefore, the impacts and mitigation measures identified for the proposed project in Section IV.J, Public Health and Safety/Hazardous Materials, would also apply to this alternative. New or more severe impacts relative to exposure to hazardous materials could occur as the result of implementation of this alternative, since auto service uses typically use hazardous substances as part of normal operations.

**k. Urban Decay.** Like the proposed project, the Auto Sales and Service alternative would eliminate existing blighted conditions on the project site. No competing large retail stores would be constructed on the project site under this alternative. The auto sales and service uses could compete with similar uses elsewhere, however, creating the potential for urban decay. Compared to the proposed project, this alternative would result in similar potential for urban decay. However, the impact due to urban decay is anticipated to be less than significant, similar to the proposed project.

**l. Global Climate Change.** Under the Auto Sales and Service alternative, construction would occur at the site, and the new development would generate new air emissions due to new vehicle trips or gas or electricity consumption. While this alternative would generate fewer vehicle trips than the proposed project, its contribution to cumulative global climate change impacts would be similar to that described for the project.

Overall, the Auto Sales and Service alternative would result in similar impacts as proposed project, while not reducing the proposed project’s significant unavoidable cumulative impact on regional air quality.
C. COMMERCIAL RECREATION ALTERNATIVE

The following section describes and analyzes the Commercial Recreation alternative.

1. Principal Characteristics

The Commercial Recreation alternative would construct a mix of various commercial recreation facilities consistent with the Regional Commercial General Plan designation for the site. This alternative would redevelop the 28± acre site with approximately 80,000 square feet of commercial recreation area (the minimum square footage allowed by the Regional Commercial designation). Based on commercial recreation uses elsewhere in the Bay Area, it is assumed that this alternative would provide for indoor and outdoor facilities such as a rock climbing gym; an indoor challenge ropes course; indoor or outdoor volleyball, basketball, bocce ball, and/or badminton courts, an entertainment center (including activities such as pocket billiards, air hockey, foosball, and darts); meeting facilities; shower change locker rooms; and a bar/restaurant. The 80,000 square feet of building area would translate to a floor area ratio (FAR) of 0.07.

Under this alternative, the existing structures on the site would be demolished and removed. The specific locations for individual uses on the site under this alternative have not been established.

The Commercial Recreation alternative could achieve three of the project objectives:

- Design a project consistent with the City of Concord General Plan, Zoning Code, and Central Concord Redevelopment Plan.
- Introduce commercial retail uses into the North Concord area to serve residents of this area and surrounding communities and rejuvenate the older industrial area.
- Develop a project with a high quality architectural design with features that soften the scale and mass of the buildings. Provide landscaping to soften the design and create a pleasant, attractive appearance.

The Commercial Recreation alternative would not achieve the remaining four objectives of the proposed project that call for more intensive retail use of the site. It would not:

- Develop a retail power center with two major commercial retail tenants as anchors with additional complementary uses in out-parcel commercial pads.
- Develop a shopping center that minimizes potential conflicts among users.
- Develop a major commercial retail project adjacent to and visible from the freeway.
- Provide stores that will contribute significant economic and other benefits to the City and community in terms of increased public revenues, employment opportunities, shopping opportunities and community programs.

2. Analysis of Commercial Recreation Alternative

The Commercial Recreation alternative is evaluated below.

a. Land Use and Planning Policy. This alternative would result in the redevelopment of the existing industrial site with commercial recreation uses, consistent with the General Plan land use designation for the site. The development intensity (FAR of 0.07) would be considerably less than...
that of the proposed project (FAR of 0.27). The alternative would not result in any significant land
use impacts. Similar to the proposed project, the Commercial Recreation alternative would bring
needed commercial uses into the North Concord area, as well as develop a project consistent with the
Zoning Ordinance and Community Design Guidelines standards and policies. Development of the
Commercial Recreation alternative would not divide an existing community and would not conflict
with the surrounding industrial, office, and public uses. This alternative would eliminate existing on-
site blighted conditions consistent with the goals of the Central Concord Redevelopment Plan. The
Commercial Recreation alternative would have a similar land use and policy planning impact as the
proposed project.

b. Transportation and Circulation. Trip
generation estimates were developed based
on methodologies described in Section IV.B,
Transportation and Circulation, of this EIR.
Table V-2 shows weekday AM and PM peak
hour trip generation for the Commercial
Recreation alternative. As indicated in this
table, total traffic added to the roadway under
this alternative would be considerably less
than under the proposed project in both the
weekday AM and weekday PM peak hours.
The Commercial Recreation alternative
would therefore result in reduced traffic
impacts compared to those of the proposed
project. This conclusion is supported by the
average daily trip estimate for the
Commercial Recreation alternative which, at
2,766 trips, would represent 11,971 fewer
trips than the 14,737 trips generated by the project.

<table>
<thead>
<tr>
<th>Land Use</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In</td>
<td>Out</td>
</tr>
<tr>
<td>Health/Fitness Club (ITE Code 492)</td>
<td>42</td>
<td>58</td>
</tr>
<tr>
<td>Net New Vehicle Trips</td>
<td>42</td>
<td>58</td>
</tr>
<tr>
<td>Proposed Project Vehicle Trips</td>
<td>246</td>
<td>179</td>
</tr>
<tr>
<td>Difference in Vehicle Trips</td>
<td>-204</td>
<td>-121</td>
</tr>
</tbody>
</table>

Table V-2: Commercial Recreation Alternative Trip Generation (Weekday AM and PM Peak Hours)

Note: ITE = Institute of Transportation Engineers

It is assumed that the Commercial Recreation alternative would construct all necessary sidewalks,
bicycle lanes, and other amenities in compliance with adopted policies, plans, and programs. As a
result, the Commercial Recreation alternative’s impacts on transit, pedestrian, and bicycle facilities
would be less than significant, similar to the proposed project.

Construction of the Commercial Recreation alternative would result in traffic impacts from
construction employee trips and parking, as well as construction material importation. These impacts
would be similar to those discussed in Section IV.B of this EIR. Implementation of the mitigation
measures related to construction activities identified for the proposed project would reduce potential
construction impacts to a less-than-significant level.

It is reasonable to assume that all required parking could be accommodated on-site in accordance with
City Code requirements. As a result, impacts related to parking would be similar to those of the
proposed project.

c. Air Quality. Under this alternative, construction impacts would be similar to those identified
for the proposed project in Section IV.C, Air Quality, because all existing uses and structures on the
site would be demolished and removed. Vehicular trips associated with the Commercial Recreation alternative would be fewer than those for the proposed project, resulting in a decrease in regional pollutants. Therefore, local and regional air quality impacts would be reduced compared to those identified for the proposed project. Preliminary analysis indicates that air emissions generated by the Commercial Recreation alternative would not exceed BAAQMD significance thresholds. The analysis suggests that, unlike the proposed project, the Commercial Recreation alternative would not have a significant, unavoidable cumulative impact on regional air quality.

d. **Noise.** The noise effects caused by construction and operation of the Commercial Recreation alternative would be similar to those of the proposed project. The project site and surrounding uses would be exposed to construction noise levels similar to those described for the proposed project in Section IV.D, Noise. Construction mitigations identified for the proposed project would apply to this alternative as well. Because vehicular trips would be less than those of the proposed project, a comparable reduction in roadway noise sources would occur, but overall noise effects from operation of this alternative would be similar to those of the proposed project.

e. **Cultural and Paleontological Resources.** Under the Commercial Recreation alternative, the site would be subject to grading and site preparation activities. Potential impacts and mitigation measures would be similar to those identified for the proposed project in Section IV.E, Cultural and Paleontological Resources.

f. **Geology, Soils, and Seismicity.** This alternative would require a comparable amount of grading as that required for the proposed project. The potential impacts of this alternative would be similar to those of the proposed project and mitigation measures identified for the proposed project in Section IV.F, Geology, Soils and Seismicity, would also apply to this alternative.

g. **Biological Resources.** Under the Commercial Recreation alternative, the site would be subject to demolition of all buildings and structures and removal of all existing trees. Potential impacts and mitigation measures relative to the significant biological resources on the site would be similar to those identified for the proposed project in Section IV.G, Biological Resources.

h. **Hydrology and Storm Drainage.** Similar to the proposed project, the Commercial Recreation alternative would not result in any significant impacts in the following topical areas: reduction of groundwater supplies, or placement of structures in flood, tsunami, or dam failure inundation zones. Hydrological impacts associated with major construction activities, stormwater runoff, and water quality would be similar to those identified and mitigated for the proposed project in Section IV.H, Hydrology and Storm Drainage.

i. **Public Services and Utilities.** The Commercial Recreation alternative would result in a comparable demand for police, fire and emergency services, compared to the proposed project. Impacts related to public services are therefore expected to be similar to those of the proposed project. Demand for utilities such as water, wastewater, solid waste collection and disposal, and telecommunication services would be comparable to or slightly less than those described for the project in Section IV.I, Public Services and Utilities, While the 80,000-square-foot commercial recreation facility would be smaller in scale than the proposed 334,112-square-foot shopping center, the overall impact on utilities would be similar to the less-than-significant impact identified for the proposed project.
j. **Hazards and Hazardous Materials.** For the Commercial Recreation alternative, demolition, site preparation, and grading would occur in a similar manner to that of the proposed project. Therefore, the impacts of this alternative would be similar to those of the proposed project and mitigation measures identified for the proposed project in Section IV.J, Public Health and Safety/Hazardous Materials, would also apply to this alternative.

k. **Urban Decay.** Under this alternative, development of the site would eliminate existing on-site blighted conditions, similar to the proposed project. The commercial recreation development may result in less potential for urban decay than that identified for the project, assuming there would be fewer competing facilities. Like the proposed project, the Commercial Recreation alternative would result in less-than-significant urban decay impacts.

l. **Global Climate Change.** Under the Commercial Recreation alternative, construction would occur at the site, and the new development would generate new air emissions due to new vehicle trips and gas or electricity consumption. This alternative would generate considerably fewer vehicle trips than the proposed project, however, so its contribution to cumulative global climate change impacts would be less than that described for the project.

Overall, the Commercial Recreation alternative would result in similar or slightly reduced impacts compared to the proposed project. Preliminary analysis indicates that, unlike the proposed project, the Commercial Recreation alternative would not have a significant unavoidable cumulative impact on regional air quality.

D. **ENVIRONMENTALLY SUPERIOR ALTERNATIVE**

CEQA requires the identification of the environmentally superior alternative in an EIR. Based on above analysis, the No Project alternative would have the least number of impacts and, therefore, would be the environmentally superior alternative. 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 (CEQA Guidelines Section 15126.6(e)(2)). As described above, both the Auto Sales and Service and Commercial Recreation alternatives would result in similar or slightly reduced impacts compared to the proposed project, including reductions in traffic generation and comparable reductions in vehicular air emissions. However, because the Commercial Recreation alternative would provide for greater reductions in these areas, it is considered the environmentally superior alternative. The Commercial Recreation alternative would reduce the following significant adverse impacts of the proposed project:

- **Impact TRANS-1:** The addition of project traffic to existing traffic in the *Existing Plus Project* condition would worsen the operation of Intersection 2 (Arnold Industrial Way and SR 4 Westbound Ramps intersection) below the established standard of LOS D to unacceptable LOS E in the PM peak hour.
- **Impact TRANS-2:** The addition of project traffic to existing traffic in the *Existing Plus Project* condition would worsen the operation of Intersection 3 (Arnold Industrial Way and Laura Alice Way intersection) to unacceptable LOS E in the PM peak hour.
- **Impact TRANS-3:** The addition of project traffic to existing traffic in the *Existing Plus Project* condition would worsen the operation of the Intersection 8 (Arnold Industrial Place and SR 4 Eastbound Ramps intersection) to unacceptable LOS F in the PM peak hour.
- **Impact TRANS-4:** Intersection 4 (Arnold Industrial Way and Main Project Access intersection) would operate below an acceptable level of service in the *Cumulative Plus Project* condition due to project-related impacts.
• **Impact AIR-2:** Long-term project-related regional emissions would exceed the BAAQMD thresholds of significance for ozone precursors.

The reader should note that development under the Commercial Recreation alternative would not meet the project objectives of providing a shopping center, a “major commercial retail project,” a “retail power center” with two major commercial retail anchor tenants, or “stores that will contribute significant economic and other benefits to the City.”
VI. 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 involved in the project planning and review, consultants for the City, and the project applicant to preliminarily determine the scope of the Lowe’s Shopping Center Project EIR. In addition to these meetings, a Notice of Preparation (NOP) was circulated on April 9, 2008 to solicit comments from the public about the scope of this EIR. Written comments received on the NOP were considered in the preparation of the final scope for this document and evaluation of the proposed project and are included in Appendix A.

The environmental topics analyzed in Chapter IV, Setting, Impacts, and Mitigation Measures, represent those topics that were thought likely to result in adverse impacts by professional environmental analysts on the project team as well as members of the public. As noted in Chapter I, Introduction, five 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: aesthetics, minerals and energy, agricultural resources, recreation, and population and housing. 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 A] and Chapter I, 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 37,000 square feet of building area at an existing industrial site and develop an approximately 334,112-square-foot shopping center with two big-box anchor tenants (including Lowe’s), two smaller retail/restaurant tenant pads, and 1,617 parking spaces for the two big-box uses. As indicated, the project site is currently developed and is located in an urban area of the City of Concord. Development of the proposed project would redevelop the existing industrial site with a commercial shopping center. The Concord 2030 Urban Area General Plan designates additional areas to the west and southwest (i.e., south of Highway 4) for Regional Commercial development. Since this adjacent land is already developed, however, the project would
not necessarily induce future development in these areas, and assuming future development there would be speculative at this time. Any such future development would be subject to environmental review.

Utilities and infrastructure (i.e., water, sewer, storm drains, electricity, natural gas, cable and telephone) are readily available along or under Arnold Industrial Way to serve the proposed shopping center. No additional infrastructure is proposed nor would the existing facilities need to be expanded substantially to serve development of the proposed project. The project would include installation of a bus stop and restriping of Arnold Industrial Way to include a new center turning lane, but these changes would not be substantial enough to induce growth in the surrounding area.

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.

The type and scale of redevelopment of the industrial site with a commercial shopping center with a big-box warehouse home improvement store (i.e., Lowe’s), an additional big-box retail store, and small retail/restaurant pads does not represent an adverse or growth-inducing impact.

C. UNAVOIDABLE SIGNIFICANT ENVIRONMENTAL IMPACTS

After mitigation, the revised project would result in the following significant unavoidable impact:

- Long-term project-related regional emissions would exceed the BAAQMD thresholds of significance for ozone precursors.

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 industrial uses characterized by outdoor storage and construction material stockpiles. The proposed project would redevelop the industrial site with a 334,112-square-foot shopping center, 1,617 parking spaces, landscaping, and on- and off-site improvements. Just as the proposed project is redeveloping the existing industrial site 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 commercial project. Compliance with federal, State,
and local regulations, and the mitigation measures identified in Section IV.J, Public Health and Safety/ Hazardous Materials, would reduce the possibility that hazardous substances within the project site would cause significant irreversible environmental damage to a less-than-significant level.

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 lands 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 A of this EIR.) Section IV.L, Global Climate Change, of this EIR discusses 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 global climate change analyses, used year 2030 for the cumulative condition based on traffic modeling that includes assumptions for future land uses and development consistent with build-out of the City’s General Plan. The cumulative urban decay analysis is based on conditions in a market area defined in the economic impact analysis prepared for the project (see Section IV.K, Urban Decay, and Appendix F 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 VI-1, that have the potential to contribute to environmental impacts in the 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. Each of the environmental topic areas and their significance criteria analyzed in Chapter IV are considered below for cumulative impacts.

2. Cumulative Effects of the Proposed Project

Each of the environmental topic areas analyzed in Chapter IV of this EIR is considered below for cumulative impacts.
Table VI-1: Anticipated Cumulative Development in Project Site Vicinity

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Location</th>
<th>Status</th>
<th>Size (Sq. Ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Commercial</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lowe’s Shopping Center (Proposed Project)</td>
<td>1923-1985, 2001 Arnold Industrial Way (at Laura Alice Way)</td>
<td>Proposed</td>
<td>334,112</td>
</tr>
<tr>
<td>Concord Station</td>
<td>1611 Solano Way</td>
<td>Proposed</td>
<td>109,000</td>
</tr>
<tr>
<td>Gas station/mini-mart/car wash</td>
<td>Arnold Industrial Place, west of SR 4 off-ramp</td>
<td>Proposed</td>
<td>2,900</td>
</tr>
<tr>
<td><strong>Retail Total (Square Feet)</strong></td>
<td></td>
<td></td>
<td>446,012</td>
</tr>
<tr>
<td><strong>Office</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Port Chicago Plaza</td>
<td>Port Chicago Highway (at Bates Avenue)</td>
<td>Under Construction</td>
<td>66,000</td>
</tr>
<tr>
<td>John Muir Health Core Lab</td>
<td>5003-5015 Commercial Circle</td>
<td>Under Construction</td>
<td>57,000</td>
</tr>
<tr>
<td><strong>Office Total (Square Feet)</strong></td>
<td></td>
<td></td>
<td>123,000</td>
</tr>
<tr>
<td><strong>Industrial</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial Condominiums</td>
<td>Arnold Industrial Way (at Industrial Way)</td>
<td>Under Construction</td>
<td>54,272</td>
</tr>
<tr>
<td>The Moulding Co. Building</td>
<td>5117 Commercial Circle</td>
<td>Proposed</td>
<td>34,450</td>
</tr>
<tr>
<td>Conco Cement</td>
<td>5141 Commercial Circle</td>
<td>Approved</td>
<td>13,056</td>
</tr>
<tr>
<td><strong>Industrial Total (Square Feet)</strong></td>
<td></td>
<td></td>
<td>101,778</td>
</tr>
</tbody>
</table>

Note: Currently anticipated cumulative development does not include development on the recently closed US Naval Weapons Station site, located approximately 4 miles east of the project site. No plans for the Naval Weapons Station site have been prepared, and therefore assuming development on the site would be speculative. Development on the Naval Weapons Station site will be subject to future environmental review once a preferred alternative for the site has been selected. The City 2030 General Plan did not authorize or analyze any development on the Naval Weapons Station property. The current General Plan land use designation for the property is CNWS-Inland and CNWS-Tidal with no underlying land uses or densities.

Source: City of Concord, 2008.

a. Land Use. The proposed project is consistent with the General Plan designation for the site, as it would redevelop an existing, urbanized, industrial site designated Regional Commercial with retail stores, consistent with General Plan Policies LU-3.1.1, LU-3.1.4, and LU-3.1.5 (see Section IV.A, Land Use and Planning Policy, of this EIR). Development of the proposed project in concert with other development envisioned in the General Plan would allow for the efficient use of land and would not contribute to the division of an established community. The project would contribute to the “changes in land use and the character of neighborhoods and districts in the region” identified as a cumulative General Plan impact in the Concord General Plan EIR.1 Based on the findings in Section IV.A, however, the project would not make a cumulatively considerable contribution to any cumulative land use impacts.

b. Transportation and Circulation. The project would contribute to traffic at four intersections that would fail to meet acceptable service levels in the cumulative condition. Section IV.B, Transportation and Circulation includes a detailed analysis of the cumulative conditions (Cumulative Year 2025 condition) related to transportation and circulation. Please refer to that section for additional information.

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1 Dyett & Bhatia, 2006. Draft Environmental Impact Report, Concord 2030 Urban Area General Plan, State Clearinghouse No. 2006062093, December, Section 3.2 (Land Use) and page 5-5.
c. **Air Quality.** The BAAQMD has established thresholds of significance for ozone precursors and fugitive dust of 80 pounds per day. Proposed project emissions would exceed these thresholds of significance for ROG, NOx, and PM10. As explained in Section IV.C, Air Quality, the project’s PM2.5 impact is also assumed to be significant for purposes of conservative analysis, even though this conclusion is not required. There is no mitigation available with currently feasible technology to reduce the project’s regional air quality impact to a less-than-significant level. These emissions constitute cumulative and project-level impacts, as they contribute to the creation of ozone precursors and are considered cumulatively considerable. However, the potential for an individual project to significantly degrade regional air quality or contribute to significant health risk is small, even if the emission thresholds are exceeded by the project. Because of the overall improvement trend in the basin’s air quality, it is unlikely that regional air quality or health risk would worsen due to emissions from an individual project. Please refer to the analysis contained in Section IV.C, Air Quality, for a detailed discussion of cumulative air quality conditions.

d. **Noise.** Section IV.D, Noise, includes an analysis of the cumulative noise impacts associated with roadway noise based on year 2025 traffic volumes. The increase in noise over existing traffic volumes is attributable to cumulative development projects in the project’s vicinity and in the region. As indicated, the future roadway noise assessment concludes that roadway noise impacts associated with cumulative and cumulative-plus-project conditions would be less than significant. The noise analysis also provides an assessment of on-site noise level impacts on adjacent sensitive uses. The assessment concludes that the project would not produce a significant impact on sensitive land uses. When the NOP was distributed, there were no future development projects proposed in the project vicinity whose operations would add to the estimated noise levels at the residential neighborhoods located to the southeast of the site. Therefore, the project would not make a cumulatively considerable contribution to cumulative noise impacts.

e. **Cultural Resources.** The potential for cumulative cultural resource impacts on the project site is unlikely. As described in Section IV.E, Cultural Resources, the site does not contain any historic structures and is not known to contain or be underlain by any historic or paleontological resources. If resources are discovered during site demolition/construction ground disturbing activities, recommended mitigation measures would ensure that the resources are properly handled and the appropriate persons are contacted (e.g., Native American Heritage Commission). Further, implementation of Concord General Plan Policies POS-4.1.2, POS-4.1.3, and POS-4.1.4 would ensure that cultural resources are preserved. As a result, the proposed project would not make a cumulatively considerable contribution to cumulative impacts on cultural resources. This finding is consistent with the recent Concord General Plan EIR, which did not identify any cultural resources impacts that could not be mitigated, or any cumulative cultural resources impacts.2

f. **Geology, Soils, and Seismicity.** Since geological impacts are confined to discrete spatial locations and do not combine to create an extensive cumulative impact condition, the potential cumulative impacts for geology do not extend far beyond a project’s boundaries. The exception to this generalization would occur where a large geologic feature (e.g., fault zone, massive landslide) might affect an extensive area, or where the development effects from the project could affect the geology of an off-site location. These circumstances are not present on the project site and do not

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apply to the proposed project. The mitigation measures identified in Section IV.F, Geology, Soils and Seismicity (including appropriate grading and compliance with the Uniform Building Code), and remediation would reduce the cumulative effects from geology on the project site and surrounding area. The project would contribute to the “increased risk of people and property to the potentially damaging effects of strong seismic shaking, fault rupture, seismically-induced ground failure and slope instability” identified as a cumulative General Plan impact in the Concord General Plan EIR. Based on the findings in Section IV.F, however, development of the proposed project would not make a cumulatively considerable contribution to any cumulative geologic impacts.

g. Biological Resources. Because of the highly disturbed condition of the project site, cumulative impacts on biological resources would be less than significant as the site does not provide adequate habitat to support sensitive wildlife or plant species. Further, of the potentially occurring sensitive species on the project site (i.e., barn owl, pallid bat, and Townsend’s big-eared bat), none were observed during site surveys. If any of these species are discovered during site demolition activities, mitigation measures are available to ensure that they are not harmed or injured. Therefore, the project would not make a cumulatively considerable contribution to cumulative impacts on biological resources. This finding is consistent with the recent Concord General Plan EIR, which did not identify any significant biological resources impacts, nor any cumulative biological resources impacts other than conversion of open space and undeveloped land to urban uses.

h. Hydrology and Water Quality. The proposed project would adequately mitigate construction and operation project-related water quality impacts, and would not contribute to regional groundwater or surface water quality degradation. The project would redevelop an existing urbanized site and would comply with all local and regional water quality protection programs and requirements, as described in Section IV.H, Hydrology and Water Quality. Stormwater runoff from the proposed project would not exceed the capacity of existing stormwater drainage facilities that serve the project site. All projects must be developed in accordance with stormwater regulations, including C-3 requirements. For these reasons, other proposed projects that use the same stormwater drainage facilities would include mitigation measures to reduce impacts to less-than-significant levels. This finding is consistent with the recent Concord General Plan EIR, which did not identify any hydrology-related impacts that could not be mitigated to less-than-significant levels. Development of the proposed project in compliance with applicable regulations and required mitigation would not make a cumulatively considerable contribution to any cumulative impacts on hydrology or water quality (see discussion in Section IV.H).

i. Public Services and Utilities. Similar to other development projects, the proposed project and cumulative development would increase demand for public services and utilities, including police, fire, emergency services, water, sanitary sewer, solid waste, telecommunications services, and power (e.g., electricity and gas). As noted in Section IV.I, Public Services and Utilities, however, the project would not have any significant impacts on public services or utilities. New facilities required to

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4 Dyett & Bhatia, 2006. Draft Environmental Impact Report, Concord 2030 Urban Area General Plan, State Clearinghouse No. 2006062093, December, Section 3.4 (Biological Resources) and page 5-5.

maintain adequate service ratios would be funded through developer fees, bond monies, and taxes on new development. Service providers regularly review growth trends and conduct long-range planning to adequately provide public services for future growth.

Based on findings of the recent General Plan EIR, sufficient water supply and wastewater treatment plant and interceptor system capacity are available to treat projected sewage flows from General Plan build-out, sufficient landfill capacity is available (with mandated source reduction and recycling programs), and police and fire protection facilities would be maintained at adequate levels through compliance with performance standards and fair-share contributions by new developments. The General Plan EIR did not identify any cumulative services or utilities impacts. For these reasons, the proposed project would not make a cumulatively considerable contribution to any cumulative impacts on public services or utilities.

j. Public Health and Safety/Hazardous Materials. To the extent that the proposed project would replace outdated buildings containing hazardous materials, and that implementation of the mitigation measures identified in Chapter IV.J, Public Health and Safety/Hazardous Materials, would mitigate the potential exposure of workers and site visitors to hazardous materials, there may be a cumulative beneficial impact of the project. Additionally, the use, storage, and disposal of hazardous materials is highly regulated by local, State, and federal laws. The handling of hazardous materials in accordance with these regulations would reduce cumulative hazardous materials risks to less-than-significant levels. As a result, the proposed project would not make a cumulatively considerable contribution to cumulative hazardous materials impacts. This finding is consistent with the recent Concord General Plan EIR, which did not identify any significant hazardous materials impacts.

k. Urban Decay. The potential for urban decay associated with development of the proposed project was evaluated in Section IV.K, Urban Decay, of this EIR. The economic impact analysis of the proposed project prepared by CBRE Consulting, Inc. also considered the potential for the project to contribute to cumulative urban decay impacts. As indicated in Section IV.K, the proposed project would not make a cumulatively considerable contribution to a significant cumulative urban decay impact.

l. Global Climate Change. As described in Section IV.L, Global Climate Change, of this EIR, project-related emissions of greenhouse gases would cumulatively contribute to the larger problem of global climate change. Incorporation of a select subset of water-, energy, land, and building material-conserving features into the proposed project would ensure that the project’s contribution to the cumulative climate change impact would be less than significant. Please refer to Section IV.L for details.

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6 Dyett & Bhatia, 2006. Draft Environmental Impact Report, Concord 2030 Urban Area General Plan, State Clearinghouse No. 2006062093, December, Section 3.6 (Energy & Utilities), Section 3.11 (Public Services & Safety), and page 5-5.

VI. REPORT PREPARATION

A. REPORT PREPARATION

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B. REFERENCES


California Department of Parks and Recreation, 1976. *California Inventory of Historic Resources*.
California Environmental Protection Agency, *Climate Action Team, Climate Action Team Report to Governor Schwarzenegger and the Legislature (Executive Summary)*, March 2006.
California Natural Diversity Database. 2005. Special-status species occurrences within the Richmond and San Quentin USGS 7.5-minute quadrangles. Wildlife and Habitat Data Analysis Branch, California Department of Fish and Game, Sacramento.


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Contra Costa County, 2000, Airport Land Use Compatibility Plan, Figure 3C, Safety Zones, Buchanan Field Airport.


San Francisco Bay Regional Water Quality Control Board (RWQCB), 2007, Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater, February, Table A.


Western Regional Climate Center, 2007. Website: http://www.wrcc.dri.edu/.


C. COMMUNICATIONS

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Cross, Lashun C., 2008. ALUC Planner, Contra Costa County Airport Land Use Commission, to Frank Abejo, City of Concord, re: “Lowe’s Shopping Center,” June 27.


Lowe’s representative, 2008. E-mail communication. May 23.
