RICHMOND CENTRAL PROJECT
INITIAL STUDY CHECKLIST

Public Review Draft

City of Richmond

April 2014
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PROJECT DESCRIPTION

1. Project Title: Richmond Central Project

2. Lead Agency Name and Address:
   City of Richmond, Planning and Building Services Department
   450 Civic Center Plaza
   Richmond, CA 94804

3. Contact Person and Phone Number:
   Jonelyn Whales, Senior Planner
   (510) 620-6785, jonelyn_whales@ci.richmond.ca.us

4. Project Location:
   The project site is located at 5620 Central Avenue in the City of Richmond, Contra Costa County, California.

5. Project Sponsor’s Name and Address:
   City of Richmond
   Richmond Planning Department
   450 Civic Center Plaza
   Richmond, CA 94804
6. **General Plan Designation:**
   Regional Commercial Mixed-Use (City of Richmond) and High Density Residential (City of El Cerrito)

7. **Zoning:**
   C-3, Regional Commercial (City of Richmond) and Multi-family Residential (City of El Cerrito)

8. **Description of Project:**

   **Project Background**

   The project site comprises approximately 2.58 acres of land, located at 5620 Central Avenue in the City of Richmond and the City of El Cerrito. The property consists of three contiguous parcels, two within the City of Richmond (APNs 510-053-032 and 510-053-033) and one within the City of El Cerrito (APN 510-053-025). The parcel located in the City of El Cerrito is adjacent to Central Avenue and San Mateo Street and comprises the site’s northwest corner while the parcels located in the City of Richmond comprise the remainder of the site.

   While a small portion of the project site lies within the City of El Cerrito, the majority of the site is in the City of Richmond, and as such, the City of Richmond will serve as the lead agency for the California Environmental Quality Act (CEQA) review process. The City of Richmond is located in the western portion of Contra Costa County and is generally bordered by San Pablo Bay to the north, San Francisco Bay to the west, Richmond Inner Harbor to the south, and the City of El Cerrito and unincorporated Contra Costa County land to the east.

   The project site is bounded by Central Avenue to the north, Belmont Avenue to the east, San Mateo Street to the west, and commercial uses to the south. The site is within a ½ mile of the El Cerrito Plaza Bay Area Rapid Transit (BART) station and is within close proximity of numerous Alameda-Contra Costa (AC) Transit bus lines.

   The project site is currently vacant with no structural improvements and is located on the south side of Central Avenue between Belmont Avenue and San Mateo Street. It is surrounded by a chain-linked fence and is generally level and includes sparse vegetation, including some grass and weeds. A drainage channel runs along the eastern border of the site, parallel to Belmont Avenue, then redirects and runs along the property’s southern border. In connection with the project, a pedestrian bridge facilitating movement from the project site to Belmont Avenue is proposed.

   According to the Phase I Environmental Site Assessment, the site was previously developed in 1946 with one building and multiple areas of surface parking. In 1959,
approximately six additional buildings were constructed and the remainder of the site was used to store lumber and other supply materials. These building were demolished in 2012.

Project

The project includes the following elements:

- **Multi-Family Units** – A total of 172 apartments are proposed in a podium building with one level of above-ground parking and four levels of apartments, totaling five stories with an average building height of 61 feet and a maximum height (at the uppermost roof projection) of approximately 66 feet. The unit mix includes 127 2-bedroom, 35 3-bedroom, and 10 4-bedroom family-oriented apartments. Units would range in size from approximately 850 to 1,200 square feet. The first through the third story of the building would occupy the building’s entire floor plate while floors four and five would be stepped back from the intersection of Central Avenue and San Mateo Street. The fifth story would be stepped back incrementally further than the fourth story (approximately 83 feet), reducing the building’s mass on the upper floors. Thus, the building’s northwest corner would only be three stories tall while the other three corners would be five stories in height. According to the applicant, 90 percent of the total unit count, or 155 units, would be restricted to households that earn less than 60 percent of the area median income (AMI) in the County; the remaining 10 percent of the project (17 units) would be restricted to “very low income” households that earn less than 50 percent of AMI. Affordable rental units would be reserved at this affordability level for a period of 30 years.

- **Open Spaces and Community Amenities** – Common open spaces include a community space and office; public plazas and open spaces; and laundry and exercise facilities. In addition to common open spaces, private balconies would be provided in individual units. In addition to the landscaped and open space areas in the building, landscaped treatments would create green edges at the perimeters of the project site. Landscaping around the perimeter of the building is proposed to be a combination of trees, shrubbery, hardscape and other improvements.

- **Circulation and Parking** – Vehicle access to and from the site would be provided via an entry and exit onto San Mateo Street and an additional exit driveway onto Belmont Avenue via a new bridge that would cross the drainage channel from Belmont Avenue to the project site. No direct access to the project site would be provided from Central Avenue. All of the project’s parking would be provided in the ground-level garage. The project would include a variety of parking options including: individual standard-sized spaces, individual compact spaces, tandem spaces, and bicycle parking. The project’s parking supply would include 254 standard spaces, 48 compact spaces, and 7 ADA-compliant spaces, for a total of 309 total spaces.
The project uses are detailed in Table I-1. The building is proposed as a Mediterranean/Spanish style.

### TABLE I-1 PROPOSED USES

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>Units</td>
</tr>
<tr>
<td>Two-Bedroom Apartments</td>
<td>127</td>
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<tr>
<td>Three-Bedroom Apartments</td>
<td>35</td>
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<tr>
<td>Four-Bedroom Apartments</td>
<td>10</td>
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<tr>
<td>Total</td>
<td>172</td>
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<table>
<thead>
<tr>
<th>Common Open Spaces/Community Amenities</th>
<th>Square Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Space/Office</td>
<td>1,890</td>
</tr>
<tr>
<td>Laundry/Exercise Area</td>
<td>1,290</td>
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<tr>
<td>Public Plazas and Open Areas</td>
<td>18,150</td>
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<tr>
<td>Total</td>
<td>21,330</td>
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<table>
<thead>
<tr>
<th>Parking</th>
<th>Spaces</th>
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<tbody>
<tr>
<td>Standard</td>
<td>254</td>
</tr>
<tr>
<td>Compact</td>
<td>48</td>
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<tr>
<td>ADA</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>309</td>
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</tbody>
</table>


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**General Plan and Zoning Designations**

The City of Richmond General Plan land use classification for the parcels located in Richmond, as established by the Land Use and Urban Design Element of the City of Richmond’s General Plan,\(^1\) is Regional Commercial Mixed-Use. Properties designated as Regional Commercial Mixed-Use typically are improved with mid-rise, mixed-use development characterized by compact and pedestrian-friendly environments. In addition to medium-density residential uses at densities up to 50 units/acre, the Regional Commercial Mixed-Use category permits office and retail uses at intensities up to 2.0 floor area ratio (FAR). This designation has a height limit of 55 feet.

\(^1\) City of Richmond, 2012. General Plan, Land Use and Urban Design Element.
The City of Richmond’s zoning designation for the parcels is Regional Commercial (C-3) District. The C-3 District is intended to create, preserve, and enhance areas by encouraging retail and other pedestrian-oriented uses. The C-3 District is established to allow flexibility in use and permits a wide variety of commercial, retail, residential, and civic uses and certain agricultural, open space, and industrial uses. However, residential uses must be developed as part of a mixed-use development. The C-3 District permits building heights up to 65 feet and an FAR of up to 2.0 when residential uses are a component of a mixed-use development.\(^2\)

The project is generally within the height limit of the C-3 District, although at the uppermost roof projection extends to just above 66 feet. However, the project exceeds the General Plan height limit of for the Regional Commercial Mixed-Use, and, at residential density of 67 units per acre, also exceeds the density regulations. Additionally, the development does not include a mix of uses as required by the C-3 District. These inconsistencies are analyzed fully in Section X: Land Use and Planning.

For this project, the City of Richmond is the lead permitting agency and its designations will preside. For informational purposes, a description of El Cerrito’s General Plan and Zoning classifications are provided below.

The City of El Cerrito General Plan land use classification for the parcel, as established by the Community Development and Design Element of the City of El Cerrito’s General Plan,\(^3\) is High Density Residential. The High Density Residential land use classification permits the development of residential uses with densities up to 35 dwelling units per acre. The City of El Cerrito’s zoning designation for the parcel is RM, or Multi-family Residential. The RM zone contemplates the development of multi-family uses in well-designed environments at a density of 21 to 35 dwelling units per net acre.\(^4\)

The project, proposing 309 spaces, provides slightly less parking than what is required by the City’s Zoning Code. Section 15.04.850.060 of the Municipal Code requires 1.5 spaces per 2-bedroom unit, 2 spaces per 3- or more bedroom units, and 1 guest space per 5 units, resulting in a requirement of 315 parking spaces.

9. **Surrounding Land Uses and Setting:**
The project site is located in the southern area of the City and is surrounded by a variety of land uses. Residential uses occupy most of the land to the east of the project site across Belmont Avenue and include a mix of apartments and townhouses. Further east approaching Carlson Boulevard, residential development mixes with commercial and civic uses. Various commercial uses, including a climbing gym, roofing company, and self-

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\(^3\) City of El Cerrito, 1999. General Plan, Community Development and Design Element.

storage business are located south of the project site. Residential and commercial uses including single-family homes, apartment buildings, and gas stations are located west of the project site just across San Mateo Street.

The site is well served by public transit. AC Transit currently has six bus routes that provide transit access within the vicinity of the project site, including Route 25 which stops directly in front of the project site at Central and Belmont Avenues.Existing routes provide access to El Cerrito Plaza BART and destinations outside Richmond such as San Francisco, Berkeley and Oakland. The project site is approximately a ½ mile from the El Cerrito Plaza BART station.

The closest freeway to the project site is Interstate 80 (I-80) located about 800 feet to the west. Across Central Avenue northeast of the site is Central Park, an approximately 2.6-acre facility primarily comprised of a baseball diamond, playground, and lawn area. Across Central Avenue to the northwest residential uses dominate the area, including multi-family and single-family housing.

10. Requested Applications:

<table>
<thead>
<tr>
<th>TABLE I-2 APPLICATIONS</th>
</tr>
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<tbody>
<tr>
<td><strong>Lead Agency</strong></td>
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<tr>
<td>City of Richmond</td>
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<tr>
<th>Responsible Agencies</th>
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<tr>
<td>San Francisco Bay Regional Water Quality Control Board (RWQCB)</td>
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</tbody>
</table>

11. Other public agencies whose approval may be required (e.g., permits, financing approval, or participation agreement):

Siege Sanitary District, East Bay Municipal Water District
ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- Aesthetics
- Biological Resources
- Greenhouse Gas Emissions
- Land Use/Planning
- Population/Housing
- Transportation/Traffic
- Agriculture and Forestry Resources
- Cultural Resources
- Hazards & Hazardous Materials
- Mineral Resources
- Public Services
- Utilities/Service Systems
- Air Quality
- Geology/Soils
- Hydrology/Water Quality
- Noise
- Recreation
- Mandatory Findings of Significance

Determination. (To be completed by the Lead Agency.) On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a “potentially significant impact” or “potentially significant unless mitigated” impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

______________________  __________________________
Signature                        Date
ENVIRONMENTAL CHECKLIST

I. AESTHETICS

Would the project:

a) Have a substantial adverse effect on a scenic vista?
   - Potentially Significant Impact
   - Potentially Significant Unless Mitigation Incorporation
   - Less Than Significant Impact
   - No Impact

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?
   - Potentially Significant Impact
   - Potentially Significant Unless Mitigation Incorporation
   - Less Than Significant Impact
   - No Impact

c) Substantially degrade the existing visual character or quality of the site and its surroundings?
   - Potentially Significant Impact
   - Potentially Significant Unless Mitigation Incorporation
   - Less Than Significant Impact
   - No Impact

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?
   - Potentially Significant Impact
   - Potentially Significant Unless Mitigation Incorporation
   - Less Than Significant Impact
   - No Impact

The visual landscape surrounding the project site is heavily developed, consisting primarily of residential uses and accessory commercial uses in the nearby area. The project site is surrounded by a mix of one- and two-story single-family homes, townhouses, and apartments. Various one- and two-story commercial uses, including a climbing gym, roofing company, the Pacific East Mall, and a self-storage business are located south of the project site. The project would be constructed on previously disturbed land covered by gravel, dirt, and sparse vegetation.

Discussion

a) Have a substantial adverse effect on a scenic vista?

Less Than Significant. The General Plan states that surrounding hills and the San Francisco and San Pablo bays are prominent scenic areas in Richmond, but does not formally identify any specific scenic vistas or resources. As a result, construction of the project would not adversely affect any “scenic vistas” though it may change some views.

The General Plan does contain policies that protect views of hillsides and the San Francisco and San Pablo bays, which are considered the prominent scenic areas in Richmond, though not scenic vistas. Due to site’s flat topography, views of hillsides or the bays are limited from the site. The views in the project area consist largely of urban uses, such as residential buildings (single- and multi-family) and roadways. Views across the site to the north, south and west are impeded by residential and commercial development, and neighborhood trees. Looking east from San Mateo Street across the site, hillsides are visible.
Views from San Mateo Street to the hillsides would be obstructed by the project, but not significantly. Although some reduced private views would be unavoidable, any change in views would not exceed that commonly accepted in an urban setting. This loss or change of views would not affect a substantial number of people and would not rise to a level considered to be a significant impact on the environment. In addition, hillside views to the east would still be visible from Central Avenue, the main roadway in the vicinity of the project.

b) **Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway?**

**No Impact.** California’s Scenic Highway Program serves to protect and enhance California’s natural scenic beauty and to protect the social and economic values provided by the State’s scenic resources. I-80 and I-580 are not designated as Scenic Highways within the City of Richmond, according to California Scenic Highway mapping system.

The General Plan states that surrounding hills and bays are prominent scenic areas in Richmond, but does not formally identify any specific scenic resources. The project site is current a paved vacant lot with a limited number of trees along the perimeter of the site. The project would not result in the removal of a substantial number of trees, rock outcroppings or historic buildings and therefore would have a less-than-significant impact on scenic resources.

c) **Substantially degrade the existing visual character or quality of the site and its surroundings?**

**Less Than Significant.** The visual character of the site would change with the introduction of new residential development, vegetated setbacks and increased landscaping. The development would be consistent with the visual context of the surrounding neighborhood and create an appropriate visual transition from the site’s eastern commercial scale to its western neighborhood character. The project would be considered an improvement to the current visual quality of the unoccupied site. For these reasons, the project would not substantially degrade the existing visual character of the site or its surroundings.

d) **Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?**

**Potentially Significant Unless Mitigation Incorporation.** The site is currently vacant and does not contain on-site lighting. The project would increase the amount of lighting to provide for the comfort, safety, and security of residents and visitors. The project does not yet include a detailed lighting plan. Building materials include windows, but do not include substantial amounts of reflective materials. The following mitigation measure
would reduce the potential impact of a substantial light or glare source that would adversely affect views to a less-than-significant level.

Mitigation Measure AES-1 – Lighting Plan: Prior to issuance of a building permit, an exterior lighting plan including fixture and standard design, coverage and intensity, shall be reviewed and approved by the Director of Planning and Building Services. In its review of the lighting plan, the City shall ensure that any outdoor night lighting proposed for the project is directed downward and shielded to prevent light spill onto surrounding properties, sky glow, and glare. The City shall ensure that all development plans for the proposed project conform to the performance standards provided under Section 15.04.840.040 of the Zoning Code.
II. AGRICULTURAL AND FOREST RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California agricultural land evaluation and site assessment model (1997) prepared by the California Dept. of conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significantly environmental effects, lead agencies may refer to information compiled by the California department of forestry and fire protection regarding the state’s inventory of forest land, including the forest and range assessment project and the forest legacy assessment project; and forest carbon measurement methodology provided in forest protocols adopted by the California air resources board. Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to a non-agricultural use?

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Governmental Code section 51104(g))?

d) Result in the loss of forest land or conversion of forest land to non-forest use?

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

As described above, the project would be constructed on a site in an urbanized area of Richmond and a small portion in El Cerrito that has already been disturbed by previous development. These lands are classified as “Urban and Built-Up Land” by the California...
Department of Conservation Farmland Mapping and Monitoring Program.\(^{1}\) Urban and Built-Up Land is occupied by structures with a building density of at least 1 unit per 1.5 acres, or approximately 6 structures per 10 acre parcel. Common examples include residential, industrial, commercial, institutional facilities, cemeteries, airports, golf courses, sanitary landfills, sewage treatment and water control structures. The project site is not zoned for agricultural use and is not under a Williamson Act contract. No forest land or timberland is identified on or near the project site, and the project site is not zoned for forest or timber uses.

**Discussion**

a)  *Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to a non-agricultural use?*

**No Impact.** No farmland is mapped on or near the project site. Therefore, the project would not convert Farmland to a non-agricultural use.

b)  *Conflict with existing zoning for agricultural use, or a Williamson Act contract?*

**No Impact.** The project site is not zoned for agricultural use and is not under a Williamson Act contract. Therefore, the project would not conflict with existing zoning for agricultural use, or a Williamson Act contract.

c)  *Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?*

**No Impact.** The project area contains no forest or timberland and is not zoned for forest land, timberland, or timberland production.

d)  *Result in the loss of forest land or conversion of forest land to non-forest use?*

**No Impact.** See response II(c) above.

e)  *Involve other changes in the existing environment which, due to their location or mature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?*

**No Impact.** See response II(a) and II(c) above.

---

III. AIR QUALITY

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan? ☐ ☐ ☐ ☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation? ☐ ☐ ☐ ☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? ☐ ☐ ☐ ☐
d) Expose sensitive receptors to substantial pollutant concentrations? ☐ ☐ ☐ ☐
e) Create objectionable odors affecting a substantial number of people? ☐ ☐ ☐ ☐

Note: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.

The project site is located within the San Francisco Bay Area Air Basin (SFBAAB), which is currently designated as a nonattainment area for the ozone and particulate matter (PM) ambient air quality standards.

Discussion

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant. Under the Clean Air Act of 1970, the United States Environmental Protection Agency established national ambient air quality standards (NAAQSs) to protect public health for six criteria air pollutants: ozone, carbon monoxide (CO), sulfur dioxide, nitrogen dioxide, lead, and particulate matter (PM). The California Air Resource Board has also established ambient air quality standards (CAAQSs), which are equal to or more stringent than the NAAQSs. Therefore, the CAAQS are referenced in this initial study instead of NAAQS to evaluate applicable air quality impacts. There are currently no CAAQS for toxic air contaminants (TACs), because air quality impacts from TACs are localized and vary depending on site-specific conditions such as wind direction and the location of potential sensitive receptors.
The Bay Area Air Quality Management District (BAAQMD) prepares and implements air quality plans in order to attain CAAQSs in the SFBAAB. The most recent air quality plan adopted by BAAQMD is the Bay Area 2010 Clean Air Plan (CAP), which includes 55 control measures to reduce emissions of ozone precursors, PM, TACs, and greenhouse gases (GHGs) in the SFBAAB.\textsuperscript{6} The 2010 CAP was developed based on computer modeling and analysis of existing air quality monitoring data and emissions inventories. The 2010 CAP incorporated traffic and population growth projections prepared by the Metropolitan Transportation Commission and the Association of Bay Area Government, respectively. The project is consistent with the General Plan, which is consistent with these growth projections. The traffic and population growth projected for the project is thus generally accounted for in the 2010 CAP and would not conflict with or obstruct implementation of the plan. Therefore, the project would have a less-than-significant impact on implementation of the applicable air quality plan.

b) \textit{Violate any air quality standard or contribute substantially to an existing or projected air quality violation?}

**Potentially Significant Unless Mitigation Incorporation.** In accordance with the 2010 CAP, the BAAQMD developed and adopted thresholds of significance (Thresholds) that were incorporated into the 2010 CEQA Air Quality Guidelines.\textsuperscript{7} The purpose of the CEQA Air Quality Guidelines is to assist lead agencies in the evaluation and mitigation of air quality impacts generated from new developments during the construction and operational phases of a project. The 2010 Thresholds established levels at which air pollution emissions would cause significant environmental impacts. The 2010 Thresholds include emission values for ozone precursors (reactive organic gases [ROG] and nitrogen oxides [NO₃]), PM with a diameter less than 2.5 and 10 microns (PM₂.₅ and PM₁₀, respectively), local CO, TACs, and GHGs.

On March 5, 2012 the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA before adopting the 2010 Thresholds, because the 2010 Thresholds are considered a “project” subject to CEQA review. The court issued a writ of mandate ordering BAAQMD to set aside and cease dissemination of the adopted 2010 Thresholds until approved under CEQA. In view of the court’s order, the BAAQMD revised the CEQA Air Quality Guidelines in 2012 to exclude the recommended use of the 2010 Thresholds for CEQA analysis.

BAAQMD appealed the Alameda County Superior Court’s decision. The Court of Appeal of the State of California, First Appellate District, reversed the trial court’s decision, reinstating the BAAQMD’s significance thresholds for evaluating air quality impacts under

\textsuperscript{6} Bay Area Air Quality Management District (BAAQMD), 2010a. \textit{Bay Area 2010 Clean Air Plan}. September 15.

\textsuperscript{7} BAAQMD, 2010b. California Environmental Quality Act Air Quality Guidelines. May.
CEQA. The Court of Appeal's decision was appealed to the California Supreme Court, which granted limited review, and the matter is currently pending there.

Since the court did not challenge the scientific soundness of the 2010 Thresholds, lead agencies may continue to use the 2010 Thresholds for CEQA analysis at their discretion. The 2010 Thresholds are used in this initial study for the evaluation of air quality impacts from the project.

The BAAQMD recommends using the most current version of the California Emissions Estimator Model (CalEEMod) to estimate construction emissions and operational emissions of a project. The model calculates the daily maximum and annual average for criteria pollutants. CalEEMod utilizes widely accepted models for emission estimates combined with appropriate default data that can be used if site-specific information is not available. A copy of the CalEEMod report for the project, which summarizes the input parameters, assumptions, and findings, is included in Appendix A.

Construction Phase

Common pollutant emissions of concern during construction include ROG, NOx, exhaust PM$_{2.5}$ and PM$_{10}$ from equipment, and fugitive dust PM$_{2.5}$ and PM$_{10}$ from earth-moving activities. Emissions of ozone precursors and PM above applicable Thresholds could substantially contribute to existing violations of CAAQSs in the SFBAAB. Potential emission sources for the project would include grading, building construction, paving, and architectural coatings. Pollutant emissions during project construction were estimated using the CalEEMod default values for a mid-rise residential development, except as noted below.

- Demolition and site preparation activities would not be required for the project because the site is currently a vacant lot that is generally void of vegetation.
- The duration of grading was reduced from 8 to 2 weeks, because the project site is relatively flat.
- The area of grading was increased from 1.0 to 1.7 acres to equal the footprint of the project site.

Based on the size and type of development, CalEEMod estimated that project construction would likely last 268 days. The average daily emissions of criteria pollutants or precursors estimated over that time period are compared to applicable Thresholds in Table III-1. The estimated emissions for ROG, NOx, and exhaust PM$_{2.5}$ and PM$_{10}$ were below applicable Thresholds. The project’s criteria pollutant construction emissions would not be expected

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to violate any air quality standard or contribute substantially to an existing violation and, therefore, would be less than significant.

**TABLE III-1 SUMMARY OF AVERAGE CRITERIA POLLUTANT EMISSIONS DURING PROJECT CONSTRUCTION**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>ROG (lb/day)</th>
<th>NOx (lb/day)</th>
<th>Exhaust PM$_{10}$ (lb/day)</th>
<th>Exhaust PM$_{2.5}$ (lb/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emissions</td>
<td>10.0</td>
<td>31.5</td>
<td>2.1</td>
<td>2.0</td>
</tr>
<tr>
<td>Thresholds</td>
<td>54</td>
<td>54</td>
<td>82</td>
<td>54</td>
</tr>
</tbody>
</table>

Note: lb/day = pounds per day.


The BAAQMD recommends implementing Basic Construction Mitigation Measures for all construction projects to reduce ozone precursors and PM, regardless of whether or not the unmitigated estimates of emissions exceed applicable thresholds. Therefore, the Basic Construction Mitigation Measures shall be incorporated into the project under Mitigation Measure AQ-1, below. There are no quantitative Threshold values for fugitive dust PM$_{2.5}$ and PM$_{10}$; however, the BAAQMD considers implementation of the BMPs sufficient to reduce related air quality impacts from fugitive dust to a less-than-significant level.

**Mitigation Measure AQ-1 – Basic Construction Best Management Practices:** The project shall comply with the following BAAQMD Basic Construction Mitigation Measures:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.

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All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.

All construction equipment shall be maintained and properly tuned in accordance with manufacturer’s specifications. All equipment shall be checked by a certified visible emissions evaluator.

Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD’s phone number shall also be visible to ensure compliance with applicable regulations.

Implementation of Mitigation Measure AQ-1 would satisfy the BMP Threshold requirement for fugitive dust emissions and reduce the potential impact on attainment of CAAQS to a less-than-significant level.

Operational Phase

Common pollutant emissions of concern during the operational phase of a project include ROG, NOx, exhaust PM$_{2.5}$ and PM$_{10}$ from equipment, and CO. Emissions of ozone precursors and PM above applicable Thresholds could substantially contribute to the existing violations of CAAQSs within the SFBAAB. Ambient CO concentrations in the SFBAAB do not currently violate CAQQS; however, the BAAQMD considers emissions of CO to be significant if localized concentrations (also known as “hot spots”) exceed the CAAQSs.$^{10}$

Pollutant emissions of concern during the operational phase of the project would primarily be from mobile sources (i.e., vehicle trips). Other common emission sources would include the use of consumer products, architectural coatings, and landscape maintenance equipment. Pollutant emissions during project operations were estimated using the CalEEMod default values for a mid-rise residential development, except as noted below.

- The weekday vehicle trip rate was reduced to 5.41 trips/dwelling unit/day based on the Transportation Impact Assessment conducted for the project site.$^{11}$

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$^{10}$ Ibid.  
The average daily emissions of criteria pollutants or precursors estimated during the operational phase of the project are compared to applicable Thresholds in Table III-2. The estimated emissions for ROG, NOx, and exhaust PM$_{2.5}$ and PM$_{10}$ were below applicable Thresholds. The project’s criteria pollutant operational emissions would not be expected to violate any air quality standard or contribute substantially to an existing violation and therefore, would be less than significant.

**TABLE III-2 SUMMARY OF AVERAGE CRITERIA POLLUTANT EMISSIONS DURING PROJECT OPERATION**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>ROG</th>
<th>NOx</th>
<th>Exhaust PM$_{10}$</th>
<th>Exhaust PM$_{2.5}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units</td>
<td>lb/day</td>
<td>lb/day</td>
<td>lb/day</td>
<td>lb/day</td>
</tr>
<tr>
<td>Emissions</td>
<td>11.4</td>
<td>12.3</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Thresholds</td>
<td>54</td>
<td>54</td>
<td>82</td>
<td>54</td>
</tr>
<tr>
<td>Exceedance</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>


The 2010 CEQA Air Quality Guidelines$^{12}$ provide a preliminary screening methodology to conservatively assess if a proposed project would result in CO emissions that would cause local CO concentrations to exceed the Thresholds, which are equivalent to the CAAQS. A project would result in a less-than-significant impact to localized CO concentrations if the following screening criteria are met:

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

The Contra Costa Transportation Authority (CCTA) serves as the Congestion Management Agency for Contra Costa County. The most recent CMP adopted by CCTA requires an analysis of any project that is expected to generate more than 100 peak hour vehicle

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$^{12}$ BAAQMD, 2010b. op. cit.
trips\textsuperscript{15}. Since the project would not generate more than 100 peak hour vehicle trips,\textsuperscript{14} the project is consistent with the CCTA CMP. Interstate 80 (I-80) is the most heavily congested traffic corridor near the project site with a peak traffic volume of 6,209 vehicles per hour reported near the project site in 2008. Based on CCTA traffic volume forecasts, the peak traffic volume near the project site would increase about 16 percent to 7,179 vehicles per hour by 2030\textsuperscript{15}. Therefore, additional traffic from the project (less than 100 trips per hour) would not increase traffic volumes to more than 44,000 vehicles per hour. Vertical and/or horizontal mixing of air is not substantially limited near the project site. Since the project meets the BAAQMD screening criteria, the project would have a less-than-significant air quality impact related to localized CO concentrations.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

**Less Than Significant.** Air pollution in the Bay Area is generally considered a cumulative impact and, therefore, future development projects contribute to the region’s adverse air quality impacts on a cumulative basis. In developing the 2010 Thresholds, the BAAQMD considered the emission levels for which an individual project’s emissions would be cumulatively considerable; including the emissions of criteria pollutants already exceeding CAAQSs. The Bay Area is currently designated a nonattainment area for ozone and PM. As discussed under Section III(b), above, emissions of ozone precursors and PM during the construction and operational phases of the project would not exceed applicable Thresholds; therefore, the cumulative impact of ozone precursors and PM from the project would be less than significant.

d) Expose sensitive receptors to substantial pollutant concentrations?

**Less Than Significant.** The project site would be a new receptor where residents could potentially be exposed to existing sources of TAC emissions. Unlike criteria pollutants which are regionally regulated based on the CAAQSs, TAC emissions are evaluated based on estimations of localized concentrations and risk assessments. For risk assessment purposes, TACs are separated into carcinogens and non-carcinogens. Carcinogens are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals over a lifetime of exposure. Non-carcinogenic substances are generally assumed to have a safe

\textsuperscript{15} Contra Costa County Transportation Authority (CCTA), 2011. 2011 Contra Costa County Congestion Management Program.


threshold below which health impacts would not occur. Acute and chronic exposure to non-carcinogens is expressed as a hazard index (HI), which is the sum of expected exposure levels divided by the corresponding acceptable exposure levels. In the Bay Area, adverse air quality impacts to public health from TACs are predominantly from diesel PM$_{2.5}$.

Common sources of TAC emissions include stationary sources, such as gasoline stations and dry cleaners, and mobile sources, which is predominately vehicle exhaust along high-volume roadways. The BAAQMD recommends using their online tools to evaluate TAC emissions from stationary and mobile sources within 1,000 feet of a new receptor (i.e., the project site). The screening tools provide conservative estimates of how much existing TAC sources would increase risk levels, HI, and/or PM$_{2.5}$ concentrations in a community based on worst-case assumption scenarios. Sources of TAC emissions identified near the project site included three gasoline stations, an automobile maintenance shop, Central Avenue traffic, and Interstate 80 (I-80) traffic. The BAAQMD’s Gasoline Dispensing Facility Distance Multiplier Tool was used to adjust the reported screening values for TAC emissions from gasoline stations to account for attenuation of concentrations over distance. According to the California Environmental Health Tracking Program’s Traffic Spatial Linage Web Service, the average traffic volume along Central Avenue is 25,700 vehicles per day. Based on the average traffic volume, the screening values for TAC emissions from Central Avenue were linearly interpolated from the screening table from the BAAQMD’s Roadway Screening Analysis Tool. The screening values for TAC emissions from I-80 were linearly interpolated from the screening table from the BAAQMD’s Highway Screening Analysis Tool.

Both individual and cumulative risks and hazards posed to the project site from nearby TAC sources are summarized and compared to the thresholds in Table III-3. The individual and cumulative estimates of cancer risk, HI, and PM$_{2.5}$ from nearby TAC sources were below applicable thresholds; therefore, air quality impacts from exposure to localized TAC emissions would be less than significant at the project site.

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17 Ibid.


19 BAAQMD, 2013, op. cit.

20 Ibid.
### TABLE III-3  SUMMARY OF RISKS AND HAZARDS FROM TAC EMISSIONS

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
<th>Cancer Risk (10^-6)</th>
<th>Chronic Hazard Index</th>
<th>PM$_{2.5}$ (μg/m$^3$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Ave Shell</td>
<td>5500 Central Avenue, Richmond</td>
<td>1.45</td>
<td>0.0016</td>
<td>NA</td>
</tr>
<tr>
<td>Central Valero</td>
<td>5430 Central Avenue, Richmond</td>
<td>1.27</td>
<td>0.0018</td>
<td>NA</td>
</tr>
<tr>
<td>101 Auto Body</td>
<td>5327 Jacuzzi St, Suite 3A, Richmond</td>
<td>0.00</td>
<td>0.0003</td>
<td>0.00</td>
</tr>
<tr>
<td>Unocal #4296</td>
<td>3160 Carlson Boulevard, El Cerrito</td>
<td>0.45</td>
<td>0.0063</td>
<td>NA</td>
</tr>
<tr>
<td>Central Avenue</td>
<td>10 feet north of the project</td>
<td>2.77</td>
<td>&lt; 0.02</td>
<td>0.13</td>
</tr>
<tr>
<td>Interstate 80</td>
<td>565 feet southwest of the project</td>
<td>9.81</td>
<td>0.0097</td>
<td>0.09</td>
</tr>
</tbody>
</table>

**Individual Thresholds:**

|            | 10.0 | 1.0  | 0.3  |

**Individual Exceedance:**

|            | No   | No   | No   |

**Cumulative Risks and Hazards:**

|            | 15.7 | 0.04 | 0.22 |

**Cumulative Thresholds:**

|            | 100  | 10.0 | 0.8  |

**Cumulative Exceedance:**

|            | No   | No   | No   |

Note: The 20-foot elevation exposure table (2nd floor exposures) was referenced to assess impacts from I-80. Source: BAAQMD, BASELINE Environmental Consulting, 2013.

TAC emissions during construction are typically limited to diesel PM from heavy-duty diesel vehicles and equipment. Construction-phase TACs, however, would be temporary, and cancer risk modeling methodologies are associated with longer-term exposure periods of 9, 30 and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities. Construction equipment would be required to comply with all of California Air Resource Board's regulations related to off-road equipment, including limits on emissions of PM. Mitigation Measure AQ-1 includes requirements that reduce construction exhaust emissions by limiting idle times for equipment when not in use and that construction equipment be maintained and properly tuned in accordance with manufacturer's specifications. Therefore, the temporary construction activities would not be expected to result in significant health risks to nearby receptors.

e) **Create objectionable odors affecting a substantial number of people?**

**Less Than Significant.** Odor impacts could result from creating a new odor source near existing sensitive receptors or exposing a new sensitive receptor to existing odor sources. Typical odor sources are generally associated with municipal, industrial, or agricultural land uses, such as wastewater treatment plants, landfills, confined animal facilities, composting stations, food manufacturing plants, refineries, and chemical plants. The
project is a residential development that would not be expected to generate significant odors. The project site is surrounded by mixed residential and commercial land uses, which would also not be expected to generate significant odors. Therefore, project impacts related to odors would be less than significant.
IV. BIOLOGICAL RESOURCES

Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

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

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan?

The project site is located in an infill setting on the southern portion of the City of Richmond. The site was previously developed with structures and pavement occupying most of the property. Structures have been demolished, but concrete and asphalt still occupy most of the site. A concrete-lined channel borders the eastern and southeastern edge of the site. Vegetation is largely absent on the site, including the concrete channel. Scattered clumps of invasive fennel (Foeniculum vulgare) and non-native weedy grasses
and forbs are scattered in broken openings of the concrete and asphalt paving. A few planted sapling trees occur along the southwestern edge of the site, including a small coast redwood (Sequoia sempervirens), plum (Prunus sp.), and ornamental species. A single pittosporum (Pittosporum sp.) grows along the west side of the channel about 150 feet south of Central Avenue. A clump of dense bamboo grows on the east side of the concrete channel in the southeastern corner of the site. Surface water conveyed through the concrete channel flows in a southwesterly direction into Cerritos Creek, which runs east to west approximately 800 feet south of the site, and flows into San Francisco Bay west of I-80.

**Discussion**

a) *Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

**Less Than Significant.** Special-status species are plants and animals that are legally protected under the State and/or federal Endangered Species Acts, or other regulations, as well as other species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning locations, communal roosts and other essential habitat.

A record search conducted of records contained in the California Natural Diversity Data Base (CNDDDB) of the California Department of Fish and Wildlife (CDFW), together with other relevant information, indicates that occurrences of numerous plant and animal species with special-status have been recorded or are suspected to occur in western Contra Costa County and the Richmond vicinity. Many of these occurrences are associated with the open waters and coastal salt marsh habitats found along San Francisco Bay. However, the site has been extensively disturbed by past development, and no longer contains suitable habitat for any special-status plant or animal species. As a result, the project would have a less-than-significant impact on special-status species.

b) *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?*

**Less Than Significant.** The site has been extensively disturbed by past development, eliminating all native plant species and natural communities that may have been previously present. No riparian habitat or other sensitive natural community types identified in local or regional plans, policies, regulations or by the CDFW or U.S. Fish and Wildlife Service (USFWS) are present on the site. The concrete channel contains no vegetation along the on-site segments, including absence of any marshland or riparian...
habitat. Due to the lack of any sensitive natural communities on the site, there would be
less-than-significant impact as a result of project implementation.

c) Would the project have a substantial adverse effect on federally protected wetlands as
defined by Section 404 of the Clean Water Act (including, but not limited to, marsh,
vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or
other means?

Potentially Significant Unless Mitigation Incorporation. Although definitions vary,
wetlands are generally considered to be areas that are periodically or permanently
inundated by surface or groundwater, and support vegetation adapted to life in saturated
soil. Wetlands are recognized as important features on a regional and national level due to
their inherent value to fish and wildlife, use as storage areas for storm and floodwaters,
and water recharge, filtration and purification functions.

Jurisdiction of the U.S. Army Corps of Engineers (Corps) is established through provisions
of Section 404 of the Clean Water Act, which prohibits the discharge of dredged or fill
material into “waters of the U.S.” below the Ordinary High Water Mark (OHWM) without a
permit. Regional Water Quality Control Board (RWQCB) jurisdiction is established through
Section 401 of the Clean Water Act, which requires certification or waiver to control
discharges in water quality whenever a Corps permit is required under Section 404 of the
Clean Water Act, and under the State Porter-Cologne Water Quality Control Act.
Jurisdictional authority of the CDFW is established under Sections 1600-1607 of the State
Fish and Game Code, which pertains to activities that would disrupt the natural flow or
alter the channel, bed or bank of any lake, river or stream.

No wetlands are present on the site, including the concrete channel. However, the channel
may be considered jurisdictional waters by the regulatory agencies, Corps, RWQCB, and
CDFW because it is hydrologically connected to downstream waters and may be the
remnants of a natural channel that could have flowed through the vicinity. The proposed
project generally would not alter the existing alignment or banks of the concrete channel.

The one exception to this is the proposed bridge crossing to Belmont Avenue. No details
have been prepared for the proposed bridge crossing, and it is unclear whether the bank
or bed of the concrete channel would be directly affected. The new bridge structure would
shade the bottom of the concrete channel, but this would not affect any wetland or
riparian habitat given the absence of vegetation along the channel. However, depending
on the design of the bridge and footings, the structure could technically affect regulated
waters and may require authorization from the CDFW, RWQCB and/or Corps. Further
review by these agencies would require that impacts be minimized and mitigation
provided, if necessary to reduce potential impacts to a less-than-significant level. Given
the potential presence of jurisdictional waters and possible need for agency
authorizations, this has been determined to be a potentially significant impact.
The following mitigation measure is recommended to mitigate potential impacts on jurisdictional waters and ensure appropriate authorizations are obtained by the applicant for any modifications to the concrete channel on the site.

**Mitigation Measure BIO-1 – Jurisdiction Waters:** If the project includes a bridge crossing to Belmont Avenue, as proposed, the applicant shall submit notification to the CDFW along with project plans and the CEQA Notice of Determination for determination of the presence of jurisdictional waters. Where jurisdiction waters of the United States and State are present and cannot be avoided, authorization for proposed modifications shall be obtained from the Corps, RWQCB, and/or CDFW. All conditions required as part of the authorizations by the Corps, RWQCB, and/or CDFW shall be implemented as part of the project. Even though no species have been identified on the project site, consultation or incidental take permitting may be required under the California and federal Endangered Species Acts, and, if required, all legally required permits or other authorizations for the potential “take” of species listed under the Endangered Species Acts shall be obtained. Copies of all authorizations shall be provided to the City of Richmond Community Development Department prior to issuance of a grading or other permit for the project to ensure that the applicant has adequately coordinated with jurisdictional agencies.

d) *Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

**Less Than Significant.** The lack of vegetative cover over most of the site limits its suitability as wildlife habitat or use as a migratory corridor or nursery area. Proposed development would eliminate the scattered clumps of invasive sweet fennel and few sapling trees, but landscaping would be provided around the perimeter, and would continue to provide limited roosting and foraging opportunities for bird species common in urban areas. The concrete channel continues upstream into a culvert system which limits its possible use as a wildlife movement corridor. However, the project does not propose to alter or affect the channel, with the exception of the bridge structure connecting to Belmont Avenue, and no substantial disruption of the possible use of the concrete channel for existing wildlife, fish or aquatic life is anticipated.

Given the urbanized conditions on the site and lack of important wildlife habitat features, potential impacts on wildlife movement opportunities are considered to be less than significant.

e) *Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*
Less Than Significant. The proposed project would not conflict with any relevant goals and policies in the City of Richmond related to protection of biological and wetland resources. Adequate mitigation is recommended to ensure that potential impacts on the concrete channel are addressed, and no wetlands or other sensitive resources are present on the site that would be affected by the proposed project.

The Conservation, Natural Resources and Open Space Element of the Richmond General Plan 2030 contain a number of policies and actions related to properties with creeks. Policy CN1.1 (Habitat and Biological Resources Protection and Restoration), Policy CN1.3 (Urban Creek Restoration), and Action CN1.H (Urban Creek Restoration) all call for restoring creeks currently diverted in culverts or hardened channels to their natural state, where feasible. The proposed project does not contain any provisions to restore the concrete channel on the site to a natural state, which would conflict with these provisions of the Richmond General Plan 2030. However, these are advisory, and compliance is not considered mandatory according to the policy and action language.

The City of Richmond protects landscape trees under the City of Richmond Municipal Code. Chapter 10.08 (Trimming, Pruning, Care, Planting, Removal and Moving of Trees, Shrubs or Plants) prohibits trimming or removing trees in or on any “street, park, pleasure ground, boulevard, alley or public place” without first obtaining a permit from the Recreation and Parks Director of the City of Richmond or any of his or her authorized deputies. Street trees are absent on the Central Avenue and San Mateo Street frontages of the site. A number of Street trees occur along Belmont Avenue, on the east side of the concrete channel which forms the eastern boundary of the site. No details have been prepared on the proposed bridge structure over the concrete channel, but one or more existing trees along Belmont Avenue could be affected or removed to accommodate the eastern access. Appropriate authorizations and replacement would be required under Chapter 10.08 if any street trees are affected by these improvements.

f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan?

No Impact. There is no applicable Habitat Conservation Plan or other approved local, regional, or state habitat conservation plan.
V. **CULTURAL RESOURCES**

Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

d) Disturb any human remains, including those interred outside of formal cemeteries?

<table>
<thead>
<tr>
<th>Potential Significance</th>
<th>Less Than Significant</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitigation</td>
<td>Impact</td>
<td>Impact</td>
</tr>
<tr>
<td>Incorporation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Background research and a field survey were done to identify whether historical resources were present within and adjacent to the project site. Record searches were conducted to identify cultural resources within and adjacent to the project site (within a ¼-mile). The results of these tasks are summarized below.

**Discussion**

a) *Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?*

**Less Than Significant.** There are no historical resources on the project site; as a result the potential impact related to changes to historic resources is less than significant.

**Background**

Records searches were conducted at the Northwest Information Center (NWIC) of the California Historical Resources Information System, Sonoma State University, Rohnert Park, and the California Native American Heritage Commission (NAHC), Sacramento. The NWIC, an affiliate of the State of California Office of Historic Preservation, is the official State repository of cultural resources’ records and reports for Contra Costa County. The NAHC maintains the Sacred Lands File, which includes the locations of sites with cultural significance to Native American groups.
As part of the records search, LSA Associates, Inc. (LSA) reviewed historical maps identified in the *Phase I Environmental Site Assessment*\(^{21}\) completed for the project. The following State and local inventories were also reviewed for cultural resources in, and immediately adjacent to, the project site:

- Five Views: An Ethnic Historic Site Survey for California;\(^ {22}\)
- California Inventory of Historic Resources;\(^ {23}\)
- *Directory of Properties in the Historic Property Data File.*\(^ {24}\) The directory includes the listings of the National Register of Historic Places, National Historic Landmarks, the California Register of Historical Resources, California Historical Landmarks, and California Points of Historical Interest; and
- Historic Resources Inventory Master Report.\(^ {25}\)

**Background Research Results**

The NWIC records search was conducted on October 14, 2013. There is no record of a previous cultural resources study of the project site, and there are no recorded cultural resources at the project site on file at the NWIC. Local and State cultural resource inventories do not identify cultural resources in or adjacent to the project site.

On October 11, 2013, LSA faxed a letter describing the project and a map depicting the project area to the NAHC requesting a review of their Sacred Lands File for any Native American cultural resources that might be affected by the project. LSA received a faxed response on October 16, 2013, from Debbie Pilas-Treadway, Environmental Specialist III with the NAHC, stating that a search of the Sacred Lands File “failed to indicate the presence of Native American cultural resources in the immediate project area.”

U.S. Geological Survey topographic maps from 1895 and 1915 indicate that the project site was once at the San Francisco Bay tidal margin. A Sanborn Fire Insurance map published in 1929 indicates that a residence and garage were once situated in the project site at the corner of Central Avenue and San Mateo Street. By 1950, the residence and garage had been removed, and Sanborn Fire Insurance maps indicate a variety of industrial uses at the project site until at least 1981.


Field Survey
LSA conducted a cultural resources survey of the project site on October 17, 2013. Most of the project site was paved with asphalt at the time of the survey, which precluded an effective archeological survey to be completed. Areas of exposed soils were present, however, and these were reviewed for archaeological materials, including midden soil, shell, heat-affected rock, and culturally flaked or ground stone.

Field Survey Results
No historical resources, including archaeological deposits or historic buildings, were identified during the survey. All buildings associated with industrial operations on the site have been removed. Marine shell was identified on the project site, but this material appears to have been imported with sand deposited on site and does not represent an archeological deposit.

Conclusion
There are no buildings or structures on the project site that qualify as historical resources under CEQA (CEQA Guidelines §15064.5(a)). Archaeological sites, which may be considered historical resources under CEQA (CEQA Guidelines §15064.5(c)), may be unearthed during the project’s ground-disturbing activities. Potentially significant impacts to archaeological deposits are discussed in further detail below.

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Potentially Significant Unless Mitigation Incorporation. Archaeological sites have been identified within a 1/4-mile of the project site. The presence of these sites indicates the general archaeological sensitivity of the vicinity, which includes environmental features conducive to habitation and use during prehistory, such as a nearby freshwater stream (Cerrito Creek) to the south and San Francisco Bay and tidal margin to the west. Nearby archaeological resources are briefly described below.

- **P-07-002582/P-07-003065.** This prehistoric archaeological site is described as a remnant of the Albany Shellmounds, a complex of prehistoric mounds comprising accumulations of dietary and habitation debris deposited over thousands of years, often containing human internments, as well. According to the record on file at the NWIC, this site includes small pieces of shell.

- **CA-CCO-29/P-07-000046.** This prehistoric archaeological site includes the remnants of a large shellmound and two bedrock mortars. Archaeological excavations at this site indicate a habitation site occupied during the Middle Archaic Period (4700 to 4620 years before present) to the Emergent Period (520 to 420 years before present).
Geotechnical excavations indicate the project site is underlain by 10 to 17 feet of “bay mud.” Although estuarine deposits are considered to be of low sensitivity for containing archaeological deposits, “Pre-Bay” Holocene-age land surfaces could underlie this mud, particularly in and along former Bay margins.

Conclusion

There are no recorded archaeological resources in the project site. The presence of nearby prehistoric archaeological sites, however, indicates the general archaeological sensitivity of the vicinity. Furthermore, although the project site is underlain by bay mud, there is a potential to encounter buried surfaces containing archaeological materials below the bay mud or archaeological materials that have been redeposited at the project site from nearby archaeological sites for use as fill. Therefore, in order to reduce potential impacts to archaeological resources, the following mitigation measure shall be implemented:

Mitigation Measure CULT-1 – Archaeological Deposits and Human Remains: The project applicant shall retain a qualified archaeologist to monitor project ground-disturbing activities. Prior to project ground-disturbing activities, the archaeologist shall prepare a Monitoring Plan that will guide the monitoring for the project. The Monitoring Plan shall describe the specific methods and procedures that will be used in the event that archaeological deposits are identified.

Archaeological monitors shall be empowered to halt construction activities at the location of a discovery to review possible archaeological material and to protect the resource while the finds are being evaluated. Monitoring shall continue until, in the archaeologist's judgment, cultural resources are not likely to be encountered.

If archaeological materials or human remains are encountered during project activities, all work within 25 feet of the discovery shall be redirected until the archaeologist assesses the finds, consults with agencies and Native American tribes as appropriate, and makes recommendations for the treatment of the discovery. If avoidance of the archaeological deposit is not feasible, the archaeological deposits shall be evaluated for their eligibility for listing in the California Register of Historical Resources. If the deposits are not eligible, mitigation is not necessary. If the deposits are eligible, adverse effects on the deposits shall be mitigated. Mitigation may include excavation of the archaeological deposit in accordance with a data recovery plan (see CEQA Guidelines §15126.4(b)(3)(C)) and standard archaeological field methods and procedures; laboratory and technical analyses of recovered archaeological materials; preparation of a report detailing the methods,

findings, and significance of the archaeological site and associated materials; and accessioning of archaeological materials and a technical data recovery report at a curation facility. Human remains shall be treated in accordance with California Health and Safety Code §7050.5.

Upon completion of the monitoring and any associated studies (i.e., archaeological excavation and laboratory analysis), the archaeologist shall prepare a report to document the methods and results of these efforts. The report shall be submitted to the City of Richmond and the Northwest Information Center at Sonoma State University upon completion of the resource assessment. Implementation of Mitigation Measure CULT-1 would reduce potential impacts on archaeological deposits and human remains to less-than-significant levels.

c) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

**Potentially Significant Unless Mitigation Incorporation.** A regional geologic map indicates the project site is underlain by Quaternary Holocene (present to 10,000 years) and Pleistocene (10,000 to 1.5 million years old) deposits.\(^2\) Holocene-age deposits are too recent to contain paleontological resources (fossils). Pleistocene deposits are sensitive for significant paleontological resources and could underlie the Holocene-aged deposits in the project site at an unknown depth. Pleistocene deposits can locally contain fossils of gastropods and bivalves, and such Pleistocene mega-fauna as horse, camel, bison, sloth, and mammoth. Project ground-disturbing activities have a potential to unearth fossils and would constitute a significant impact. In order to reduce the potential impact, the following mitigation measure shall be implemented:

**Mitigation Measure CULT-2 – Paleontological Resources:** Should paleontological resources be encountered during project subsurface construction activities, all ground-disturbing activities within 25 feet shall be redirected and a qualified paleontologist shall be contacted to assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. If found to be significant, and project activities cannot avoid the paleontological resources, adverse effects on paleontological resources shall be mitigated. Mitigation may include monitoring, recording of the fossil locality, data recovery and analysis, a final report, and accessioning the fossil material and technical report to a paleontological repository. Public educational outreach may also be appropriate. Upon completion of the assessment, a report documenting methods, findings, and recommendations shall be prepared and submitted to the City of Richmond for review. If paleontological

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materials are recovered, the report shall also be submitted to a paleontological repository, such as the University of California Museum of Paleontology.

The applicant shall inform its contractor(s) of the sensitivity of the project area for paleontological resources. The City shall verify that the following directive has been included in the appropriate construction documents:

“The subsurface of the construction site may be sensitive for paleontological resources. If paleontological resources are encountered during project subsurface construction, all ground-disturbing activities within 25 feet shall be redirected and a qualified paleontologist contacted to assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. Project personnel shall not collect or move any paleontological materials. Paleontological resources include fossil plants and animals, and such trace fossil evidence of past life as tracks. Ancient marine sediments may contain invertebrate fossils such as snails, clam and oyster shells, sponges, and protozoa; and vertebrate fossils such as fish, whale, and sea lion bones. Vertebrate land mammals may include bones of mammoth, camel, saber tooth cat, horse, ground sloth, dire wolf and bison. Paleontological resources also include plant imprints, petrified wood, and animal tracks.”

Implementation of Mitigation Measure CULT-2 would reduce potential impacts on paleontological resources to less-than-significant levels.

The project site does not contain a unique geologic feature and thus, the project would have no impacts.

d) **Would the project disturb any human remains, including those interred outside of formal cemeteries?**

**Potentially Significant Unless Mitigation Incorporation.** There are no human remains recorded at the project site. Prehistoric archaeological deposits along the bayshore frequently contain human internsments, however, and nearby archaeological site CA-CCO-29/P-07-000046, within a ¼-mile of the project site, is known to contain human skeletal remains. There is a potential that Native American human remains associated with archaeological deposits could be unearthed during project ground-disturbing activities. Disturbance of such remains would constitute a significant impact.

**Mitigation Measure CULT-3:** Implementation of Mitigation Measure CULT-1 would reduce potential impacts on archaeological deposits and human remains to less-than-significant levels.
VI. GEOLOGY AND SOILS

Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
   i. 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? Refer to Division of Mines and Geology Special Publication 42.  
   ii. Strong seismic ground shaking?  
   iii. Seismic-related ground failure, including liquefaction?  
   iv. Landslides?

b) Result in substantial soil erosion or the loss of topsoil?

c) 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?

d) Be located on expansive soil, as defined in Table 18-1-8 of the Uniform Building Code (1994), creating substantial risks to life or property?

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

This section analyzes impacts resulting from seismic activity on the Hayward Fault, located about 1.6 miles northeast of the project site. Soil conditions on the project site are also evaluated.

Discussion

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

   i. 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? Refer to Division of Mines and Geology Special Publication 42.
**Less Than Significant.** Surface rupture occurs when the ground surface is broken due to fault movement during an earthquake. Surface rupture is generally expected to occur along active fault traces that have exhibited signs of recent geological movement (i.e., within the past 11,000 years). Alquist-Priolo Earthquake Fault Zones mapped by the California Geological Survey (CGS) delineate areas around active faults with potential surface fault rupture hazards that would require specific geological investigations prior to approval of certain kinds of development within the delineated area. The Earthquake Fault Zone boundaries generally have about a ¼-mile buffer around the surface traces of active faults.\(^{29}\) The project site is not located within or adjacent to an Earthquake Fault Zone.\(^{30}\) Therefore the project would have a less-than-significant impact on people or structures related to surface fault rupture.

**ii. Strong seismic ground shaking?**

**Potentially Significant Unless Mitigation Incorporation.** Seismic ground shaking generally refers 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. According to a preliminary geotechnical investigation, the project site is underlain by 10 to 17 feet of soft to very soft wet clay, which is commonly referred to as “Bay Mud.”\(^{31}\) Bay Mud is a seismic hazard because it shakes much harder than bedrock and other geological units.\(^{32}\)

The extent of ground shaking is controlled by the magnitude and intensity of the earthquake, distance from the epicenter, and local geologic conditions. The magnitude of a seismic event is a measure of the energy released by an earthquake; it is assessed by seismographs that measure the amplitude of seismic waves. The intensity of an earthquake is a subjective measure of the perceptible effects of a seismic event at a given point. The Modified Mercalli Intensity scale (MMI) is the most commonly used scale to measure the subjective effects of earthquake intensity in values ranging from I to XII.

The Hayward Fault, located about 1.6 miles northeast of the project site, is the closest active fault that could trigger ground shaking at the project site. The Hayward Fault has a 31 percent probability of generating a 6.7 moment magnitude earthquake or higher in the next 30 years. Based on seismic shaking hazard maps prepared by the Association of Bay

\(^{29}\) California Geological Survey (CGS), 2008. Special Publication 117A; Guidelines for Evaluating the Mitigating Seismic Hazards in California.
Area Governments (ABAG), there is a 10 percent chance that an earthquake along the Hayward Fault could generate moderate to heavy ground shaking (VIII on the MMI) at the project site within the next 50 years, which could cause considerable damage to buildings not constructed in accordance with seismic-design criteria included in the current California Building Code. Mitigation Measure GEO-1, which requires the project applicant to include analysis of the potential for strong seismic shaking as part of the design-level geotechnical investigation to be prepared for the project, would reduce the potential strong seismic shaking impacts to a less-than-significant level.

Mitigation Measure GEO-1 – Geotechnical Investigation: Prior to the issuance of any site-specific grading permits, a design-level geotechnical investigation, in compliance with City of Richmond requirements, shall be prepared by a licensed professional and submitted to the City for review and confirmation that the proposed improvements fully comply with City requirements. The investigation shall determine the project’s geotechnical conditions, including seismic shaking and liquefaction hazard, unstable soils hazards, and destabilization and erosion hazards associated with the drainage channel and measures to address these hazards. In addition, the following guidance for the design-level geotechnical investigation shall be addressed:

- Analysis presented in the geotechnical investigation shall conform to the California Division of Mines and Geology recommendations presented in the Guidelines for Evaluating Seismic Hazards in California. Briefly, the guidelines recommend that the investigation include: a site screening evaluation; evaluation of on- and off-site geologic hazards; quantitative evaluation of hazard potential; detailed field investigation; estimation of ground-motion parameters; evaluation of drainage channel bank stability, liquefaction, lateral-spreading and ground-displacement hazards; and recommendations to reduce identified hazards.

- All design measures, recommendations, design criteria, and specifications set forth in the design-level geotechnical investigation shall be implemented as a condition of project approval.

- Design review for the project shall include evaluation of fixtures, furnishings, and the fasteners with the intent of minimizing collateral injuries to building occupants from falling fixtures or furnishings during the course of a violent seismic event.

iii. Seismic-related ground failure, including liquefaction?

Potentially Significant Unless Mitigation Incorporation. Liquefaction is the temporary transformation of loose, saturated, granular sediments (e.g., sand and silt) to a fluid-like

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state as a result of seismic ground shaking. In the process, the soil undergoes transient loss of strength, which commonly causes ground displacement such as lateral spreading and settlement. Areas most susceptible to liquefaction are generally located in low lying lands adjacent to rivers, creeks, beaches, and estuaries where granular sediments are saturated by ground or surface water.

The CGS has developed Seismic Hazard Zone Maps that delineate areas susceptible to liquefaction that require additional investigation to determine the extent and magnitude of potential ground failure prior to development. However, Seismic Hazard Zones have not yet been evaluated in the vicinity of the project site,\(^{34}\) and no mention of the liquefaction hazard at the site is included in the preliminary geotechnical report.\(^{35}\) According to ABAG mapping of liquefaction susceptibility, the liquefaction potential in the project vicinity is moderate to very high.\(^{36}\)

The combination of sediments with moderate to very high liquefaction potential in the project vicinity combined with the high potential for an earthquake along the Hayward Fault to cause moderate to heavy ground shaking at the project site (see Section VI.a.ii) poses a significant risk of seismically-induced ground failure from liquefaction.

**Mitigation Measure GEO-2:** Implement Mitigation Measure GEO-1, which requires the project applicant to include analysis of the potential liquefaction hazard as part of the design-level geotechnical investigation to be prepared for the project, would reduce the potential liquefaction impacts to a less-than-significant level.

**iv. Landslides?**

**Less Than Significant.** Seismically-induced landslides occur as the rapid movement of large masses of soil on unstable slopes during an earthquake. The CGS has developed Seismic Hazard Zone Maps that delineate areas susceptible to seismically-induced landslides that require additional investigation to determine the extent and magnitude of potential ground failure prior to development. As discussed in Section VI.a.iii, Seismic Hazard Zones have not yet been evaluated in the project vicinity.\(^{37}\) Since the project site is relatively flat, seismically-induced landslides would not likely occur at the project site. The project would have a less-than-significant impact on people or structures related to seismically-induced landslides.

**b) Result in substantial soil erosion or the loss of topsoil?**


http://quake.abag.ca.gov/earthquakes/.

\(^{37}\) CGS, 2003, op cit.
Less Than Significant. Erosion is the entrainment and movement of soil material by natural processes, such as wind and water. The rate of soil erosion, which is dependent on the local landscape, climate, and soil properties, can be accelerated by human activities such as construction grading and excavation. In the project vicinity, erosion from stormwater runoff is the dominant natural erosion process. The susceptibility of specific soils to water erosion is described by the K factor derived for the Universal Soil Loss Equation.38

According to United Stated Department of Agriculture, Natural Resources Conservation Service (USDA NRCS), soils on the project site have been mapped as Clear Lake Clay.39 Soils with a low susceptibility to water erosion have K factors less than 0.25.40 Based on K factors estimated by USDA NRCS, clay soils mapped on the project site have a low susceptibility to water erosion with a K factor of 0.20.41 Compliance with applicable regulations, which are described in detail in the Hydrology and Water Quality section of this Initial Study would ensure that impacts related to soil erosion are less than significant.

c) 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?

Potentially Significant Unless Mitigation Incorporation. Settlement is a common concern for new buildings, because the weight of newly constructed buildings can cause significant compaction of the underlying soils. A preliminary geotechnical report (report) was prepared for the project site to evaluate the bearing capacity of the soils. The report suggested that in the absence of special foundation designs, either driven steel H-piles or cast-in-drilled-hole foundation types, excessive settlements could occur. In addition, the report suggested over-excavation and replacement of soils in parking lot and driveway areas to mitigate settlement.42

Mitigation Measure GEO-3: Implement Mitigation Measure GEO-1. Mitigation Measure GEO-1 requires the project applicant to include analysis of the potential settlement hazard as part of the design-level geotechnical investigation to be prepared for the project, would reduce the potential settlement impacts to a less-than-significant level.

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41 USDA NRCS, 2013. op cit.

Subsidence is the settlement of organic soils and/or saturated mineral soils of low density following drainage. Near-surface clay soils mapped on the project site are not susceptible to subsidence. Landslides are primarily a function of the underlying soil or bedrock quality, the geometry of the slope (height and steepness), and rainfall. Since the project site is relatively flat, landslides would not likely occur at the project site. Soil collapse occurs as the result of unstable subsurface structures or geological voids, which are not likely present beneath the project site.

Soils susceptible to lateral spreading, sloughing, or caving pose a risk when located near a steep or vertical slope (e.g., basement foundation). Since the project site is relatively flat and there would be no subsurface structures, caving would only likely occur during excavation or trenching activities at the project site. Caving is always a potentially significant hazard for excavation or trenching greater than about 5 feet below ground surface. The clay soils mapped on the project site also have a high potential for caving during shallow excavation or trenching at depths less than 5 feet below ground surface. The California Division of Occupational Safety and Health (Cal/OSHA) requires adequate protection from potential caving during all excavation and trenching activities, such as the installation of protective barricades along trench walls. Compliance with Cal/OSHA requirements would reduce project impacts related to caving to a less-than-significant level.

It is possible that operation of heavy equipment and/or vibration associated with pile driving in close proximity to the drainage ditch located on the east side of the project site could cause cracking of the concrete liner and small bank failures. The drainage ditch has relatively steep banks that are 3 to 4 feet in height. Destabilization of the drainage channel could increase long-term erosion potential and bank failures which could eventually affect the structures and/or utilities proposed by the project. Mitigation Measure GEO-1, which requires the project applicant to include analysis of the potential effects on the drainage channel, including destabilization and long-term bank stability, as part of the design-level geotechnical investigation to be prepared for the project, would reduce the potential impacts related to the drainage channel to a less-than-significant level.

As discussed in Section VI.a.iii, there is a significant risk of seismically-induced ground failure from liquefaction in the project vicinity. Mitigation Measure GEO-1, which requires the project applicant to include analysis of the potential liquefaction hazard as part of the design-level geotechnical investigation to be prepared for the project, would reduce the potential liquefaction impacts to a less-than-significant level.

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43 USDA NRCS, 2013, op. cit.
44 Ibid.
d) 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?

**Potentially Significant Unless Mitigation Incorporation.** Expansive soils are characterized by the potential for shrinking and swelling as the moisture content of the soil decreases and increases, respectively. Shrink-swell potential is influenced by the amount and type of clay minerals present and can be measured as a percent change of the soil volume (referred to as the “linear extensibility”). Soils on the project site have a high expansion potential with estimated linear extensibility values ranging from 6.0 to 8.9 percent.46

**Mitigation Measure GEO-4**: Implement Mitigation Measure GEO-1. Mitigation Measure GEO-1, which requires the project applicant to include analysis of the potential for soil expansion impacts as part of the design-level geotechnical investigation to be prepared for the project, would reduce the potential expansive soils impacts to a less-than-significant level.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

**No Impact.** Septic tanks or alternative waste water disposal systems would not be located on the project site, because the project area is serviced by the East Bay Municipal Utilities District wastewater collection system and treatment plant. The project would have no impact related to septic tanks or alternative waste water disposal systems.

46 USDA NRCS, 2013, op cit.
VII. GREENHOUSE GAS EMISSIONS

Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? ☐ ☐ ■ ☐

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? ☐ ☐ ☐ ☐

Greenhouse gases (GHGs) emissions are analyzed to evaluate potential project impacts. The affected environment relative to greenhouse gases is described below.

Discussion

a) *Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*

**Less Than Significant.** In 2006, legislation passed the California Global Warming Solutions Act (AB 32), which requires the California Air Resource Board to develop and implement regulatory and market mechanisms that will reduce GHG emissions to 1990 levels by 2020. The primary GHGs of concern are carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Each GHG has a different global warming potential (GWP); therefore, GHGs are often expressed in terms of carbon dioxide equivalents (CO₂e) where each gas is weighted according to its GWP. Carbon dioxide emissions dominate the GHG inventory in the San Francisco Bay Area Air Basin (SFBAAB), accounting for more than 90 percent of the total CO₂e emissions reported.⁴⁷

In 2010, the Bay Area Air Quality Management District (BAAQMD) developed and adopted GHG thresholds of significance (thresholds) that were incorporated into the 2010 CEQA Air Quality Guidelines.⁴⁸ The GHG thresholds are designed to help the SFBAAB meet GHG emission reduction goals to comply with the AB 32. As discussed in the Air Quality Section III(b) above, although the process by which the 2010 Thresholds were adopted was challenged by the Alameda County Superior Court, the 2010 Thresholds are used in this initial study because scientific soundness has not been challenged.

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The GHG threshold for the operational phase of the project requires compliance with one of the following:

- Compliance with a qualified GHG Reduction Strategy;
- Annual emissions less than 1,100 metric tons per year (MT/yr) of CO\textsubscript{2}e; or
- Annual emissions less than 4.6 MT/yr of CO\textsubscript{2}e per service population.\textsuperscript{49}

If annual emissions of operational-related GHGs exceed all of these levels, the project would result in a cumulatively considerable contribution of GHG emissions and a cumulatively significant impact to global climate change.

The City of Richmond has not adopted a GHG Reduction Strategy though development of one as part of a Climate Action Plan was underway in 2013. The City of El Cerrito adopted a Climate Action Plan on May 21, 2013, which qualifies as a GHG Reduction Strategy. However, since only a small portion of the project site is located within the City of El Cerrito, it is assumed that the Climate Action Plan would not be applicable to the project and that GHG emissions need to be quantified to assess climate change impacts.

The BAAQMD recommends using the most current version of the California Emissions Estimator Model (CalEEMod)\textsuperscript{50} to estimate annual GHG emissions during the operational phase of a project. CalEEMod utilizes widely accepted models for emission estimates combined with appropriate default data that can be used if site-specific information is not available. A copy of the CalEEMod report for the project, which summarizes the input parameters, assumptions, and findings, is included in Appendix A.

GHG emissions during the operational phase of the project would primarily be from mobile sources (i.e., vehicle trips). Other common sources include onsite emissions from wood stoves, natural gas heating systems, and landscaping equipment, as well as offsite emissions related to energy production, water conveyance, wastewater treatment, and solid waste landfills. Both onsite and offsite GHG emissions during project operations were estimated using the CalEEMod default values for a mid-rise residential development, except as noted below.

- The weekday vehicle trip rate was reduced to 5.41 trips/dwelling unit/day based on the Transportation Impact Assessment conducted for the project site.\textsuperscript{51}
- No woodstoves or fireplaces were included in the building design.

\textsuperscript{49} Service population = residents + employees
\textsuperscript{51} Fehr & Peers, 2013a, op. cit.
Wastewater treatment processes were changed to 100 percent aerobic treatment and 100 percent anaerobic digestion with cogeneration, based on the design of the East Bay Municipal Utility District wastewater treatment plant that services the project area.

Based on the 2012 United States Census for the City of Richmond, there were 2.84 persons per household on average from 2007 to 2011. The project would build approximately 170 apartments, which would result in an average population of about 482 residents according to the census data. The residential population estimate for the project, which excludes employees, was used to conservatively estimate the project’s service population. The average emissions of GHGs calculated in CalEEMod for the operational phase of the project are compared to the GHG thresholds in Table VII-1. The project’s estimated GHG emissions exceeded the annual emissions threshold, but were below the efficiency-based threshold in terms of annual emissions per service population. Therefore, the project’s operational GHG emissions would have a less-than-significant impact on global climate change.

### Table VII-1 Summary of Average GHG Emissions during Project Operation

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>MT/CO₂e/yr</th>
<th>MT/CO₂e/yr/SP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emissions</td>
<td>1,291</td>
<td>2.7</td>
</tr>
<tr>
<td>Thresholds</td>
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<td>4.6</td>
</tr>
<tr>
<td>Exceedance</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Source: Baseline Environmental, 2013.

The BAAQMD has not developed thresholds for construction-related GHG emissions. Common GHG emissions sources during construction include construction equipment, truck traffic, and associated construction worker traffic. The BAAQMD recommends calculating the GHG emissions to disclose the emissions levels that would occur during construction. Based on the size and type of development, CalEEMod estimated that project construction would likely last 268 days. Over this time period, the total emissions of GHGs calculated in CalEEMod for the construction phase of the project would be about 478 MT of CO₂e. By conservatively comparing these emissions to the operational threshold of 1,100 MT/yr of CO₂e, the project’s construction GHG emissions would also have a less-than-significant impact on global climate change.

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b) **Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?**

**Less Than Significant.** As discussed in Section VII (a) above, the BAAQMD Thresholds were designed to ensure compliance with the AB 32 GHG reduction goals. Since the project’s GHG emissions would be below the efficiency-based GHG threshold in terms of annual emissions per service population (Table VII-1), it can be assumed that the project would comply with AB 32. Therefore, the project’s impact on applicable plans, policies, or regulations related to GHG emission reductions in the SFBAAB would be less than significant.
VIII. HAZARDS

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

b) 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?

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

f) For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

The project would construct a residential development and is not anticipated to create a significant hazard to the public. Potential sources of contamination associated with former land uses have been evaluated and remediated on the site as described in the discussion below. This section also reviews the project in terms of its impacts on airports, emergency plans, and wildfires.
Discussion
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less Than Significant. The project would construct a residential development, where small quantities of commercially-available hazardous materials, such as household cleaning and landscaping supplies, would routinely be handled and used. However, these materials would not be used in sufficient quantities to pose a threat to human health or the environment. The project would have a less-than-significant impact on the public or the environment related to the routine transport, use, and handling of hazardous materials.

b) 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? Project construction activities would include the use of hazardous materials such as motor fuels, oils, solvents, and lubricants. An accidental release of hazardous materials during fueling, maintenance, or improper operation of construction equipment could potentially occur and pose a risk to construction workers, the public, and the environment.

Less Than Significant. Under the National Pollutant Discharge Elimination System (NPDES) Program, the State Water Resource Control Board (SWRCB) requires a Stormwater Pollution Prevention Plan (SWPPP) to be prepared for all individual construction projects that disturb one or more acres of land. As detailed in Section XI, Hydrology and Water Quality, the SWPPP requires implementation of control measures for hazardous material storage and soil stockpiles, inspections, maintenance, training of employees, and containment of releases to prevent runoff into existing stormwater collection systems or waterways. The required SWPPP would include Best Management Practices used to contain hazardous materials and minimize the contact of hazardous materials (e.g., fuels, lubricants, paints, solvents, and adhesives) with stormwater. Compliance with these existing requirements would reduce hazardous materials releases during construction of the project to a less-than-significant level.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. Based on a review of school directories, there are no existing or proposed schools within one-quarter mile of the project.53 In addition, the construction and operation of the project would not store or use any acutely hazardous materials. Therefore, the project would have no impact to existing or proposed school facilities from the emission or handling of hazardous or acutely hazardous materials.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

**Potentially Significant Unless Mitigation Incorporation.** The provisions of Government Code 65962.5 require the Department of Toxic Substances Control, SWRCB, California Department of Health Services, and California Integrated Waste Management Board to submit information pertaining to sites associated with solid waste disposal, hazardous waste disposal, and/or hazardous materials releases to the Secretary of the California Environmental Protection Agency. A review of regulatory databases, including listed hazardous material release sites compiled pursuant to Government Code 65962.5, identified a release of diesel from an underground storage tank (UST) at the project site. In 2012, a Phase I Environmental Site Assessment was prepared for the project site to assess potential sources of contamination associated with former land uses, including the reported release of diesel. In 2013, a groundwater quality investigation was performed to evaluate potential petroleum hydrocarbon contamination in groundwater around the former buildings at the project site. The findings of these reports and potential environmental impacts associated with hazardous materials releases on the project site are summarized below.

**Phase I Environmental Site Assessment**

The project site was previously used as a lumber yard from about the 1950s to the mid-1990s. The main building, located near the middle of the property, was used for office and storage space. An auto repair shop was also located on the western portion of the project site from at least the 1970s to the mid-1990s (Figure VIII-1). A 1,000-gallon diesel UST and a fuel dispenser were formerly located along the north side of the main lumber yard building. In 2000, the diesel UST and about 135 cubic yards of petroleum-contaminated soil were excavated and removed from the site (Figure VIII-1). Groundwater was encountered at about 7 feet below ground surface. The excavation pit was backfilled with clean imported fill material and repaved. The excavation measured approximately 31 feet long by 19 feet wide by 7.5 feet deep. Concentrations of total petroleum hydrocarbons as diesel (TPH-d) as high as 230 milligrams per kilogram (mg/kg) were reported in six soil samples collected from the walls of the excavation at 6.5 feet below ground surface.

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57 P&D Environmental, Inc., 2011. Figure 2, Site Aerial Photograph Showing Borehole Locations, 5620 Central Avenue, Richmond, California.
**Figure VIII-1** Former Structures and Groundwater Sampling Locations

Legend
- **Red**: Approximate Project Boundary
- **Orange**: Approximate Location of Former Diesel UST Excavation
- **Blue**: Approximate Location of Former Buildings
- **Green**: Approximate Grab Groundwater Sample Location

Sources:
- Google Maps
- SOMA Environmental Engineering, Inc., 2012
- KCE Matrix, Inc., 2013
- P&D Environmental, Inc., 2011

Scale: 0 - 70 Feet

North Arrow
Approximately 2,200 gallons of contaminated groundwater was pumped from the excavation pit. Concentrations of TPH-d in groundwater samples collected from the pit before and after groundwater pumping were reported at 290,000 micrograms per liter (μg/L) and 20,000 μg/L, respectively. On June 15, 2001, the San Francisco Bay Regional Water Quality Control Board (Regional Water Board) issued a case closer letter for the project site, indicating that further response actions related to the release of diesel were not necessary.

In January 2012, all of the structures on the project site were demolished. In July 2012, two soil stockpiles of unknown origin and one rusted 55-gallon drum filled with soil were observed on the project site. The Phase I Environmental Site Assessment made the following recommendations to evaluate potential impacts to soil and groundwater:

- Soil and groundwater sampling in the vicinity of the former diesel UST to evaluate the levels of residual contamination;
- Soil sampling of the two soil stockpiles and abandoned soil drum observed on the project site for potential contaminants of concern; and
- Shallow soil sampling across the entire project site for potential heavy metal contamination.

**Groundwater Investigation**

On March 19 and April 11, 2013, groundwater samples were collected from five exploratory borings and analyzed for extended range hydrocarbons (carbon chains ranging from C1 to C44+), benzene, toluene, ethylbenzene, total xylenes, methyl-tert butyl ether, and other volatile organic compounds (Figure VIII-1). Concentrations of petroleum constituents were not reported above laboratory reporting limits in any of the groundwater samples. The borings were backfilled and resurfaced upon completion of the groundwater sampling.

**Environmental Impacts**

The potential environmental impacts and recommendations for further investigation identified in the Phase I Environmental Site Assessment have not been fully addressed at the project site. The potential environmental impacts include residual soil and/or groundwater contamination near the former diesel UST, potential contaminants of concern in a soil drum and two stockpiles, and potential metals contamination in shallow soils across the project site from former land uses.

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The Regional Water Board’s Environmental Screening Levels (ESLs) for TPH-d in soil and groundwater are 100 mg/kg and 100 μg/L, respectively, where land uses are residential and groundwater is a potential source of drinking water. Since previous soil and groundwater samples collected from the diesel UST excavation area exceed the current ESLs, residual soil and groundwater contamination may be present in the vicinity of the former diesel UST and fuel dispenser that could adversely impact human health and the environment (Figure VIII-1). The grab groundwater sampling (from soil borings) that was completed in 2013 did not include collection of a groundwater sample at the former diesel UST or dispenser area.

The soil stockpiles and drum on the project site, which were still present during an October 2013 site reconnaissance, may contain contaminants of concern that could adversely impact human health and the environment. In addition, shallow soils across the project site may contain elevated concentrations of metals from former auto repair and/or lumber yard activities that could adversely impact human health and the environment.

Direct contact, inhalation, or ingestion of hazardous materials in soil and/or groundwater at the project site, if present, could potentially cause adverse health effects to construction workers and future site users. The severity of health effects would depend on the contaminant, concentrations, exposure pathways, and duration of exposure. The disturbance of hazardous materials in soil and/or groundwater during earthwork activities, if present, could pose a hazard to construction workers, nearby receptors, and the environment. Future residents and trench workers who come into contact with contaminated soils, if present, could also experience adverse health effects.

The following mitigation measures are included as part of the project to minimize the potential Hazards and Hazardous Materials impacts during construction and operation of the project:

Mitigation Measure HAZ-1a – Phase II Site Investigation: The project applicant shall prepare a Phase II site investigation for the project which shall evaluate the potential environmental impacts identified during the Phase I Environmental Site Assessment. The Phase II site investigation shall be conducted and evaluated by a licensed professional prior to construction and earthwork activities. If soil and/or groundwater contamination is identified above the applicable Regional Water Board’s ESLs, the findings of the Phase II investigation shall be submitted to the local and state regulatory agency for determination of potential remediation requirements. Remediation shall be performed in accordance with the regulatory agency requirements for the protection of public health and the environment. Remediation for

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identified contamination could include, but is not be limited to, source removal of contaminated materials, in-situ treatment, and/or institutional or engineering controls.

The findings of the Phase II site investigation shall be used for development of a project-specific Construction Risk Management Plan (CRMP). The CRMP shall delineate specific soil and groundwater management and disposal procedures, construction worker health and safety requirements, and contingency measures in case unknown contamination is encountered during construction, as required in Mitigation Measure HAZ-1b.

**Mitigation Measure HAZ-1b - Construction Risk Management Plan:** Construction at the project site shall be conducted under a project-specific CRMP to protect construction workers, the general public, and the environment from hazardous materials previously identified in the Phase II site investigation (see Mitigation Measure HAZ-1a) or to address the possibility of encountering unknown contamination or hazards in the subsurface. The CRMP shall incorporate the soil and groundwater analytical data from the Phase II site investigation to ensure that soil and groundwater are stored, managed, and disposed of in a manner protective of human health and the environment, and in accordance with applicable laws and regulations.

The CRMP shall include measures for identifying, testing, and managing soil and groundwater suspected of containing hazardous materials that have not previously been identified at the site. The CRMP will: (1) provide procedures for evaluating, handling, storing, testing, and disposing of soil and groundwater during project excavation and dewatering activities, respectively; (2) describe required worker health and safety provisions for all workers potentially exposed to hazardous materials in accordance with state and federal worker safety regulations; and (3) designate personnel responsible for implementation of Mitigation Measures HAZ-1a and HAZ-1b would reduce impacts associated with potential hazardous materials in soil and groundwater at the project site to a less-than-significant level.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

**No Impact.** The Contra Costa County Airport Land Use Commission (ALUC) has adopted an Airport Land Use Compatibility Plan for areas surrounding public-use airports within the County. The project site is not located within any protected airspace zones for public-use airports defined by the ALUC.\(^{61}\) The project would have no impact on public safety related to aviation hazards around public-use airports.

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f) For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No Impact. Based on a review of Federal Aviation Administration records, there are no private airstrips in the vicinity of the project site. The project would have no impact on public safety related to aviation hazards around private airstrips.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less Than Significant. The Richmond Fire Department Office of Emergency Services (OES) is responsible for responding to and mitigating natural, manmade, and accidental disasters in the City of Richmond. Overall emergency response is governed by the City’s Emergency Operations Plan. In the event of an emergency response or evacuation, access to or from the project site could be available along I-80 or San Pablo Avenue. Development of the project would not be expected to interfere with emergency response or evacuation plans, because development would not restrict access to I-80 or San Pablo Avenue. The project would have a less-than-significant impact on emergency response and evacuation plans.

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

No Impact. The California Department of Forestry and Fire Protection (CAL FIRE) has mapped areas in Contra Costa County with significant fire hazards based on fuels, terrain, weather, and other relevant factors. These zones, referred to as Very High Fire Hazard Severity Zones, are classified by the CAL FIRE Director in accordance with Government Code Sections 51175-51189 to assist responsible local agencies, such as the Richmond Fire Department, identify measures to reduce the potential for losses of life, property, and resources from wildland fire. CAL FIRE has determined that there are no Very High Fire Hazard Severity Zones in the project vicinity. The project would have no impact on people or structures related to wildland fire hazards.

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IX. HYDROLOGY AND WATER QUALITY

Would the project:

a) Violate any water quality standards or waste discharge requirements? □ □ ■ □

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? □ □ ■ □

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site? □ □ ■ □

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? □ □ ■ □

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? □ □ ■ □

f) Otherwise substantially degrade water quality? □ □ ■ □

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? □ ■ □ □

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows? □ ■ □ □

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding of as a result of the failure of a levee or dam? □ □ □ ■

j) Inundation by seiche, tsunami, or mudflow? □ □ □ ■

The nearest surface water bodies to the project site are Cerritos Creek, which runs about 800 feet south of the project site, and San Francisco Bay, located approximately ½-mile to
the west. Federal Emergency Management Agency (FEMA) Flood Map data shows that nearly all of the project site is located within the mapped 100-year flood zone.

**Discussion**

a) **Violate any water quality standards or waste discharge requirements?**

**Less Than Significant.** The State Board and nine Regional Water Quality Control Boards regulate water quality of surface water and groundwater bodies throughout California. In the Bay Area, including the project site, the San Francisco Bay Regional Water Quality Control Board (Regional Water Board) is responsible for implementation the Water Quality Control Plan (Basin Plan). The Basin Plan establishes beneficial water uses for waterways and water bodies within the region. Runoff water quality is regulated by the National Pollutant Discharge Elimination System (NPDES) Program (established through the federal Clean Water Act). The NPDES program objective is to control and reduce pollutant discharges to surface water bodies. Compliance with NPDES permits is mandated by State and federal statutes and regulations. Locally, the NPDES Program is administered by the San Francisco Regional Water Board.

Operation of the project would be subject to the Regional Water Board’s Municipal Regional Permit (MRP), implemented in October 2009 by Order R2-2009-0074. Provision C.3 of the MRP addresses new development and redevelopment projects. As project construction would replace more than 10,000 square feet and more than 50 percent of the existing impervious surface at the project site, the entire project site, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire redevelopment project). A Stormwater Control Plan (SCP) must be prepared and submitted for the project site detailing design elements and implementation measures to meet MRP requirements. The project will be required to include Low Impact Development (LID) design measures, including a lining to prevent groundwater migration. A Stormwater Facility Operation and Maintenance Plan must be prepared to ensure that stormwater control measures are inspected, maintained, and funded for the life of the project.

Both the City of El Cerrito (Municipal Code Chapter 8.40) and the City of Richmond (Municipal Code Chapter 12.22) have adopted Stormwater Management Ordinances, which empowers the cities to ensure that these stormwater regulations are enforced. Proof of compliance with NPDES permits is required as a condition of approval for development projects. Any permit, variance, design review, or tentative map approval must be accompanied by a SCP that meets the criteria in the most recent version of the Contra Costa County Clean Water Program Stormwater C.3 Guidebook (Richmond Municipal Code, Section 12.22.050 (a)).
Potential stormwater impacts in development projects may occur during construction and operation phases. According to the water quality control plans of the Regional Water Board, any construction activity, including grading, that would result in the disturbance of one acre or more would require compliance with the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activity (Construction General Permit). The project site is approximately 2.5 acres in area, and would therefore be subject to the Construction General Permit. Under the Construction General Permit and City requirements, preparation of a Storm Water Pollution Prevention Plan (SWPPP) would be required. Under Construction General Permit and municipal requirements, the SWPPP would be required to include best management practices (BMPs) for erosion and sediment control, site management/housekeeping/waste management, management of non-stormwater discharges, runon and runoff controls, and BMP inspection/maintenance/repair activities, as consistent with the most recent version of the California Stormwater Quality Association Stormwater Best Management Handbook-Construction (Richmond Municipal Code Section 12.22.050 (g)).

A stormwater exhibit has been prepared for the project.⁶⁵ It shows that stormwater treatment areas would be constructed at the northwest and southwest corners of the project site. The stormwater treatment area at the northwest corner of the site would discharge to the existing City storm drain system at Central Avenue, while the southwest treatment area would discharge to the existing drainage channel.

Calculations on the stormwater exhibit indicate that under the project, impervious area would be reduced from 2.6 acres to 2.2 acres, which would result in a 10 percent reduction in peak stormwater flow. Additional information, including a preparation of a SCP, will be required to demonstrate that the project complies with El Cerrito, Richmond, and C.3 requirements. Compliance with these existing requirements will reduce potential stormwater quality impacts to a less-than-significant level.

b)  **Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?**

**Less Than Significant.** Groundwater would not be used during construction or operation of the project. Water supply is provided to the project area by the East Bay Municipal Water District (EBMUD). Although groundwater elevation at the project site is shallow, recently measured at 3.5 to 6.5 feet below ground surface (bgs),⁶⁶ no significant below-

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⁶⁵ Sandis, 2013, Stormwater Exhibit, 5620 Central Ave., October 24.
grade construction is proposed. Any groundwater dewatering that might be required during construction would be expected to be minor in both extent and duration. As development of the site would slightly reduce the amount of impervious surface at the site, and increase stormwater retention and treatment (see discussion above under Section XI.a), additional water from precipitation would have the potential to recharge groundwater underlying the project site, a small but positive benefit to groundwater resources. The SWPPP described in Section XI.a will require LID design measures, including a lining to prevent groundwater migration, which will reduce the potential impact of the project on groundwater recharge to a less-than-significant level.

c) **Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?**

**Less Than Significant.** Although drainage patterns would change after completion of the project, implementation of existing stormwater requirements (described above under Section XI.a) would prevent any significant impacts from erosion or siltation. Although the appearance of the concrete-lined drainage channel on the eastern site boundary would be aesthetically improved by the use of landscaping features, no functional alterations that could alter drainage patterns are proposed.

d) **Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?**

**Less Than Significant.** Although drainage patterns would change after completion of the project, implementation of existing stormwater requirements (described above under Section XI.a) would reduce the rate and amount of surface water runoff from the project site. As discussed above (under Section XI.c), no functional alterations to the concrete-lined drainage channel on the project site are proposed. The project would construct a bridge over the drainage channel, but as specified in the Project Description, this would be a free-span bridge. A free-span bridge would not include any encroachment into the channel, and therefore would not alter drainage patterns or flooding on-site or off-site.

e) **Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?**

**Less Than Significant.** Cerrito Creek is listed as an “impaired” waterbody, according to the Environmental Protection Agency, as a result of trash likely from illegal dumping and urban runoff.\(^{67}\) As discussed above (under Section XI.a), compliance with existing stormwater requirements will require treatment of stormwater and result in a reduction in

the volume of stormwater discharge to the City of Richmond storm drainage system. No significant impact would occur.

f) Otherwise substantially degrade water quality

Less Than Significant. The nearest surface water bodies to the project site are Cerritos Creek, which runs east to west approximately 800 feet south of the project site, and San Francisco Bay, located approximately ½-mile to the west. Implementation of existing stormwater requirements (discussed above under Section XI.a) would reduce any potential impacts to these water bodies to a less-than-significant level.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

Potentially Significant Unless Mitigation Incorporation. FEMA Flood Map data shows that nearly all of the project site is located within the mapped 100-year flood zone. When significant storm events and high tides coincide, Cerritos Creek may flood its banks and affect areas near the creek, including the project site.

No base flood elevation for the project site is shown on the FEMA flood map, but the area immediately to the east (from Belmont Avenue to Lassen Street) has base flood elevations ranging from 14 to 16 feet above mean sea level (amsl). As the project site elevation is approximately 20 feet amsl, this suggests that only low-lying or below-grade structures, such as the concrete drainage channel, would be affected by the 100-year flood event.

Both the City of El Cerrito (Municipal Code Chapter 8.35) and the City of Richmond (Municipal Code Chapter 12.56) have municipal ordinances to protect the public from flooding hazards. Among other features, these ordinances require that all residential construction shall be located at least one foot above the base flood elevation (Richmond Municipal Code 12.56.050.A.3). Upon completion of a structure in a flood hazard zone, the elevation of the lowest floor, including a basement, must be certified by a professional engineer or surveyor to be properly elevated. Other provisions require that structures do not create obstructions that might block flood waters and increase the base flood elevation in the vicinity of the structure. As described above under “d”, the bridge over the drainage channel would be a free-span bridge. A free-span bridge would not include any encroachment into the channel, and therefore would not block flood flows.

A recent concern is the effects of global climate change on flooding hazards. It is estimated that if current trends continue, the mean sea level will rise 18 inches by 2050

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68 Federal Emergency Management Agency (FEMA), 2009. Flood Insurance Rate Map, Contra Costa County, California and Incorporated Areas, Panel 245 of 602, Map Number 0613C0245F. Effective Date June 16.
69 City of El Cerrito, 1999. General Plan, Resources and HazardsElement.
and up to 55 inches by 2100.\textsuperscript{70} It is likely that project site structures will still be in use in 2050 and 2100, and are therefore potentially subject to the effects of sea level rise. Based on elevation and existing flood hazard, the project site is mapped as an area where sea level rise could result in exacerbated flood hazard during both the 2050 and 2100 scenarios.\textsuperscript{71}

To ensure that project design protects persons and property from flooding hazards in the event of sea level rise, Mitigation Measure HYD-1, below, has been drafted.

Mitigation Measure HYD-1: Base Flood Elevation: In compliance with El Cerrito Municipal Code Chapter 8.35 and Richmond Municipal Code Chapter 12.56, the project site structure shall be constructed so that all floors are elevated a minimum of one foot above the base flood level. This shall also include a certification by a professional engineer or surveyor that the base flood elevation used for this determination incorporates estimates for an 18-inch rise in mean sea level by 2050 and a 55-inch rise in sea level by 2100.

Implementation of the measure would reduce potential impacts from flooding to a less-than-significant level.

h) \textit{Place within a 100-year flood hazard area structures which would impede or redirect flood flows?}

Potentially Significant Unless Mitigation Incorporation. As the project site is located within a 100-year flood zone (see discussion above under Section XI.g), there may be a potential for structures constructed for the project to interfere with or divert flood waters within the 100-year flood hazard area. Adherence to City of El Cerrito and City of Richmond flood hazard ordinances and implementation of Mitigation Measure HYD-1, above, would reduce the potential impact from this hazard to a less-than-significant level.

i) \textit{Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding of as a result of the failure of a levee or dam?}

No Impact. No dam inundation areas are mapped at the project site.\textsuperscript{72} The nearest mapped nearest dam inundation area is for the San Pablo Clearwell dam, a 42-foot high earthen dam located slightly more than a mile east of the project site that is owned and

\textsuperscript{71} Ibid.
maintained by EBMUD. The mapped inundation area extends westward from the dam to approximately 850 feet east of the project site.\textsuperscript{73}

j) \textit{Inundation by seiche, tsunami, or mudflow?}

\textbf{No Impact.} Tsunamis and seiches are waves generated in the ocean and enclosed water bodies, respectively, that may create flooding impacts during a seismic effect. The project site is not located within a mapped tsunami inundation area.\textsuperscript{74} A study of tsunami effects on San Francisco Bay marine oil terminals, which examined 51 historic tsunamis recorded and observed in the San Francisco Bay Area, concluded that due to the geometry of the San Francisco Bay basin, non-tsunami induced seiches were not a significant hazard.\textsuperscript{75}

\begin{footnotesize}
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\item \textsuperscript{73} Ibid.
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X. LAND USE AND PLANNING

Would the project:

a) Physically divide an established community?
   - Potentially Significant Impact
   - Mitigation Incorporation
   - Less Than Significant Impact
   - No Impact

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?
   - Potentially Significant Impact
   - Mitigation Incorporation
   - Less Than Significant Impact
   - No Impact

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?
   - Potentially Significant Impact
   - Mitigation Incorporation
   - Less Than Significant Impact
   - No Impact

The project site is located within an urbanized area located in the southern portion of the City of Richmond. The land on each side of the project site has been disturbed and all surrounding parcels are developed with residential or commercial uses, or as parkland (i.e., Central Park). Specific surrounding uses include:

- **North**: Located directly across Central Avenue from the project site are primarily one and two-story residential buildings, including single-family homes and multi-family structures. Central Park is located slightly northeast, across Central Avenue, from the project site. Residential uses continue further north, and a few three-story, multi-family buildings are located close to the intersection of Yolo Avenue and El Dorado Street.

- **East**: Immediately east of the project site—west of Belmont Avenue and between Central Avenue and San Diego Street—are two single-family homes and three multi-family buildings. East of Belmont Avenue, one- to two-story single- and multi-family residential uses extend up to Carlson Boulevard where uses transition to commercial development.

- **South**: Directly south of the project site are one-story small commercial uses including an awning company, a climbing gym, a yoga studio, and a tax service office. Further south at the termination of San Diego Street is Pacific East Mall, a large commercial shopping center with an associated parking lot. Tenants of Pacific East Mall include 99 Ranch Market, Cathay Bank, and a variety of restaurants and small service businesses. Further south of Pacific East Mall are additional residential uses and Creekside Park in the City of Albany.
West: Located directly west of San Mateo Street from the project site are two and three-story residential buildings. Moving further west towards Pierce Street, land uses become more commercial in nature. One block west of Pierce Street is an on- and off- ramp for I-80.

Discussion

a) Would the project physically divide an established community?

Less Than Significant. The division of an established community usually refers to the construction of a physical boundary or element (such as a freeway) that hampers movement between or within existing communities. The project would reconnect a largely vacant infill site to the surrounding neighborhood. The site currently contains only residual pavement from the previous use, a perimeter fence, and minimal peripheral landscaping. The property is surrounded by residential development on three sides (Central Avenue, San Mateo Street, and Belmont Avenue), and commercial located south of the project site.

The applicant proposes to develop all residential frontages with architectural elements that would enhance the current property. The multi-family residential use proposed for the site would facilitate additional residents to locate in close proximity to other residences and neighborhood uses. The project would retain and improve all surrounding sidewalks with added landscaping, preserve all pedestrian and bicycle access in the site’s vicinity expand pedestrian and bicycle access via a new bridge from Belmont Avenue, but would not alter any established roadways. Therefore, the project would not physically divide an existing community, resulting in an less-than-significant impact.

b) Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Potentially Significant Unless Mitigation Incorporation. The project is proposed as a single-use residential development with a height and density higher than the base zoning district allows and without the mix of uses required. With implementation of a mitigation measure requiring approval of a density bonus given the proposed affordability levels or a rezoning, the potential impact will be reduced to a less-than-significant level.

For this project, the City of Richmond is the lead permitting agency and its designations will preside. For informational purposes, a description of El Cerrito’s General Plan and Zoning classifications are also provided.
General Plan Consistency

The City of Richmond’s General Plan assumes commercial and residential redevelopment will continue along Central Avenue. The project site is a designated Activity Center, which are intended to be pedestrian- and transit-friendly community hubs characterized by mixed-use and higher-density development. The Richmond General Plan designation for the project site is Regional Commercial Mixed-Use. The El Cerrito General Plan designation for the small portion of the site in the City of El Cerrito is High Density Residential.

The policies and strategies of the Richmond General Plan, in addition to those of the 2013 Housing Element, support the redevelopment of underutilized properties with mixed-use commercial/residential developments.

Specifically, the project addresses the following goals, policies, and actions from the Richmond General Plan:

*Goal LU-6: High-Quality and Sustainable Development* – Maintain a high standard of design, planning and construction of new and renovated public and private facilities, infrastructure and services. Continue committing to a comprehensive planning approach that supports a sustainable and healthy community and reduces impacts on the natural environment.

Provide new development near transit and in areas with existing transportation infrastructure. Activate public areas and reduce the need for residents and employees to travel by automobile to access daily good by promoting the location of housing, jobs and recreation uses close to transit lines, bicycle route and pedestrian improvements. In support of a walkable and vibrant community, develop complete mixed-use streets that are safe for pedestrians, bicyclists and all modes of travel.

*Policy LU1.1: Higher Density and Infill Mixed-Use Development* – Provide higher-density and infill mixed-use development affordable to all incomes on vacant and underutilized parcels throughout the City.

*Goal H-1: A Balanced Supply of Housing* – Promote a balanced supply of housing types, densities, and prices to meet the needs of all income groups.

*Policy H-1.3: Supply of Affordable Housing* – Promote the development of homes that are affordable to extremely low, very low, and moderate-income households in all new residential developments as well as in existing single-family neighborhoods.

The proposed residential use is consistent with applicable General Plan policies, but it would require a density bonus and associated concession as discussed below. The

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78 City of Richmond, 2013. General Plan, Housing Element.
Regional Commercial Mixed-Use designation for the site allows 50 units per acre and limits building heights to 55 feet. At 67 units per acre and 66 feet at the uppermost roofline, the proposed project exceeds the density and height regulations for the Richmond General Plan designation and the High Density Residential designation of the El Cerrito General Plan (35 dwelling units per acre). However, the project may be eligible for a density bonus through the City’s Density Bonus Ordinance (Chapter 15.04.810.050) which allows for exceptions to zoning ordinance requirements, Land Use Element of the General Plan, or architectural design requirements that exceed the minimum building standards, such as density and building height.

The number of concessions permitted and the total bonus is determined based on the percentage of affordable units provided (currently, proposed as 100 percent) and on the level of affordability provided (90% at 60% of AMI and 10% at 50% of AMI). Under this proposal, the project would be eligible for a 35 percent density bonus, which would allow the project to build up to 174 units, and utilize up to three concessions to development standards, such as height and parking requirements. With 172 units proposed, the project would meet the density requirements of the Regional Commercial Mixed-Use designation, with a bonus density. A concession for the height exceedance would also be required.

Zoning Consistency

The subject property’s current designation and zoning reflect the City of Richmond’s intention to encourage higher-density commercial and residential uses. Permitted uses in Richmond’s C-3 zone include: retail sales; retail services; residential uses as part of a mixed-use development; civic, public, and semipublic uses; agricultural uses; open space and recreational uses; industrial uses; and temporary uses. Permitted uses in El Cerrito’s RM zone include single-family residential, multi-family residential, and residential care facilities.

The project does not propose a mix of uses as required by Richmond’s C-3 zone when residential uses are proposed. In order to be consistent with the Zoning Ordinance, implementation of the project will require a density bonus and/or rezoning to designate the project site a Planned Area. For a density bonus, a concession may be provided by the City to modify the allowable development standards and permit a residential-only development, in addition to the density bonus and height concession described above.

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79 Assuming 50 dwelling units/acre on a 2.58 site, consistent with the Regional Commercial Mixed-Use designation, the site could accommodate 129 units. A 35 percent density bonus would permit up to 174 units.


The project, proposing 309 spaces, provides slightly less parking than what is required by the City’s Zoning Code: 1.5 spaces per 2-bedroom unit, 2 spaces per 3- or more bedroom units, and 1 guest space per 5 units, which results in a requirement of 315 parking spaces. Parking space reductions of up to 10 percent may be permitted by the Planning Director or designee, if a rideshare, transit incentive program, or other transportation system management program is provided. Further parking space reductions up to a maximum of 25 percent may be permitted if approved by the Planning Commission, through a conditional use permit process. Alternatively, a density bonus concession could be made to reduce the parking requirement.

The following mitigation measure would reduce the potential impact to a less-than-significant level.

**Mitigation Measure LAND-1 – Rezoning and density bonus:** Prior to approval, the project sponsor shall apply for and receive a density bonus and are/or rezoning to a Planned Area Development in order to modify the allowable development standards, for height, density and mix of uses. For parking, the project sponsor must obtain approval for a reduction in the parking requirement through a transportation system management program, density bonus concession, or conditional use permit.

c) **Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?**

**No Impact.** Neither Richmond nor El Cerrito has approved a habitat conservation plan or natural community conservation plan. The site is not within an area that is subject to a habitat or natural community conservation plan. Since there are no such plans in place within the project area, the proposed development would not result in a conflict.  

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[82 City of Richmond, 2012. General Plan, Conservation and Natural Resources Element.]
XI. MINERAL RESOURCES

Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?

Minerals are any naturally occurring chemical element or compound, or groups of elements and compounds, formed from inorganic processes and organic substances including, but not limited to, coal, peat and oil-bearing rock, but excluding geothermal resources, natural gas and petroleum. Rock, sand, gravel and earth are also considered minerals by the Department of Conservation when extracted by surface mining operations. Mineral production in Richmond has been largely limited to sand, gravel and rock products. Mining for sandstone and crushed rock was, until recently, limited to one quarry on Canal Boulevard near the Port of Richmond and another at Point Molate. The Canal Boulevard quarry has been closed and remediated. The Point Molate quarry is focused on recycling and handling operations rather than extracting mineral resources. The City of Richmond does not anticipate any additional quarry operations in the future.

Discussion

a) Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?

No Impact. The project site is located on a geologic unit that consists of undocumented man-made fill material, sands, silt, and various clays. There are no known mineral resources present at the project site that would be of value to the region or State. Implementation of the project would not result in the loss of availability of a known mineral resource.

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83 City of Richmond, 2012. General Plan, Conservation, Natural Resources and Open Space Element.
b) *Would the project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?*

**No Impact.** The project site is not designated by the City of Richmond General Plan or other land use plans as a locally important mineral recovery site. According to the Conservation, Natural Resources and Open Space Element of the Richmond General Plan and the Department of Conservation, only three unidentified mining operations still exist in the City of Richmond or El Cerrito, all in the northwestern most portion of the City of Richmond.\(^4\) As such, implementation of the project would not have a significant impact on mineral resources.

http://maps.conservation.ca.gov/mol/mol-app.html
XII. NOISE

Would the project:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

This section examines the potential of the project to generate noise and vibration during operation and construction and the potential impacts, on residential tenants of the project and receptors in the vicinity of the project site.

Discussion

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Potentially Significant Unless Mitigation Incorporation. Implementation of the mitigation measure below will reduce the potential impact related to noise standards to a less-than-significant level.
**General Information on Noise**

Noise is commonly defined as unwanted sound that annoys or disturbs people and can have an adverse psychological or physiological effect on human health. Sound is measured in decibels (dB), which is a logarithmic scale. Decibels describe the purely physical intensity of sound based on changes in air pressure, but they cannot accurately describe sound as perceived by the human ear since the human ear is only capable of hearing sound within a limited frequency range. For this reason, a frequency-dependent weighting system is used and monitoring results are reported in A-weighted decibels (dBA). Technical terms used to describe noise are defined in Table XII-1.

It should be noted that because decibels are based on a logarithmic scale, they cannot be added or subtracted in the usual arithmetical way. For instance, if one noise source emits a sound level of 90 dBA, and a second source is placed beside the first and also emits a sound level of 90 dBA, the combined sound level is 93 dBA, not 180 dBA. When the difference between two co-located sources of noise is 10 dBA or more, the higher noise source dominates and the lower noise source makes no perceptible difference in what people can hear or measure. For example if the noise level is 95 dBA and another noise source is added that produces 80 dBA noise, the noise level would still be 95 dBA.

**Table XII-1 Definition of Acoustical Terms**

<table>
<thead>
<tr>
<th>Term</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decibel (dB)</td>
<td>A unit describing the amplitude of sound on a logarithmic scale. Sound described in decibels is usually referred to as sound or noise “level.” This unit is not used in this analysis because it includes frequencies that the human ear cannot detect.</td>
</tr>
<tr>
<td>Frequency (Hz)</td>
<td>The number of complete pressure fluctuations per second above and below atmospheric pressure.</td>
</tr>
<tr>
<td>A-Weighted Sound Level (dBA)</td>
<td>The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted.</td>
</tr>
<tr>
<td>Equivalent Noise Level (Leq)</td>
<td>The average A-weighted noise level during the measurement period. For this CEQA evaluation, Leq refers to a one-hour period unless otherwise stated.</td>
</tr>
<tr>
<td>Community Noise Equivalent Level (CNEL)</td>
<td>The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7 to 10 PM and after addition of 10 decibels to sound levels during the night between 10 PM and 7 AM.</td>
</tr>
<tr>
<td>Day/Night Noise Level (Ldn)</td>
<td>The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured during the night between 10 PM and 7 AM.</td>
</tr>
<tr>
<td>Ambient Noise Level</td>
<td>The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.</td>
</tr>
</tbody>
</table>

Source: Baseline Environmental, 2013.
Noise Exposure Standards

The Public Safety and Noise Element of the City of Richmond General Plan and the Resources and Hazards Element of the City of El Cerrito General Plan establish guidelines and standards that serve to avoid or reduce the noise impacts of proposed projects through site planning and project design. Tables XII-2 and XII-3 below summarize the applicable outdoor and indoor noise exposure standards for the cities of Richmond and El Cerrito.

### Table XII-2  OUTDOOR NOISE EXPOSURE STANDARDS (LDN OR CNEL, dB) OF THE CITIES OF RICHMOND AND EL CERRITO

<table>
<thead>
<tr>
<th></th>
<th>City of Richmond</th>
<th>City of El Cerrito</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normally Acceptable</td>
<td>&lt; 65</td>
<td>&lt; 60</td>
</tr>
<tr>
<td>Conditionally Acceptable</td>
<td>60 to 70</td>
<td>60 to 75</td>
</tr>
<tr>
<td>Normally Unacceptable</td>
<td>70 to 75</td>
<td>--</td>
</tr>
<tr>
<td>Unacceptable</td>
<td>&gt; 75</td>
<td>&gt; 75</td>
</tr>
</tbody>
</table>

Notes: -- = no equivalent standard

- c New construction or development is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
- d New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional constructions, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
- e 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.
- f New construction or development should generally not be undertaken because mitigation to comply with noise exposure standards is usually not feasible.
- g 60 Ldn is a goal that cannot necessarily be reached in all residential areas within the realm of economic or aesthetic feasibility. This goal will be applied where outdoor use, such as recreation areas in multi-family housing projects, is a major consideration. The outdoor standard will not normally be applied to the small decks associated with apartments, but these will be evaluated on a case-by-case basis. The City may increase the Ldn to 65 dB at the discretion of the Planning Commission.
- h The Zoning Administrator may require a noise study for all new uses with outdoor noise levels within the conditionally acceptable range.

Source: City of Richmond and City of El Cerrito Municipal Codes.
The dominant noise source in the vicinity of the project site is Interstate 80 (I-80), located approximately 600 feet west of the project site. Based on this distance, the noise level from I-80 traffic is estimated to be between 70 and 75 dB Ldn at the project site. However, the actual noise level is likely to be lower because there are several multiple story buildings located between the project site and Interstate 80 that deflect some of the highway noise. Other sources of noise in the vicinity of the project site would not be expected to generate noise levels above 60 dB Ldn, and consequently would not be expected cause a perceptible difference in the noise environment relative to I-80 (see description of the additive properties of decibels above).

Based on 70 to 75 dB Ldn noise levels generated by I-80 and the noise exposure standards presented in Table XII-2, the noise environment at the project site is considered “normally unacceptable” in the City of Richmond and “conditionally acceptable” in the City of El Cerrito. Under these conditions, both cities require a detailed analysis of noise reduction requirements to be conducted and noise insulation features to be included in the project design (Table XII-2). The existing noise environment could expose outdoor use areas (e.g., courtyards and patios) of the development to noise levels above 60 dB Ldn and could expose residents of the development to noise levels above the indoor standard of 45 dB Ldn. Implementation of Mitigation Measure NOI-1 below, which requires a detailed noise analysis and implementation of specialized building design to achieve interior and outdoor noise threshold standards, would reduce this impact to a less-than-significant level.

**Noise Generated by Construction Activities**

The primary noise impacts from construction would occur from the noise generated by the operation of heavy equipment on the project site. Noise impacts would also result from trucks arriving to and departing from the site, which would be an intermittent source of noise. The construction regulations of the cities of Richmond and El Cerrito pertaining to noise are summarized in Table XII-4.

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Additionally, the City of Richmond Community Noise Ordinance (Chapter 9.52) states that, where technically and economically feasible, maximum noise levels from temporary construction activity should not exceed the zoning district standards summarized in Tables XII-5 and XII-6, by zoning district. The project site is located in a commercial zoning district. The nearest residential zoning district is located approximately 200 feet northwest of the project site.
TABLE XII-5  CITY OF RICHMOND MAXIMUM NOISE LEVEL STANDARDS FOR MOBILE CONSTRUCTION EQUIPMENT (DBA)

<table>
<thead>
<tr>
<th></th>
<th>Single-Family Residential Zoning Districts</th>
<th>Multi-Family Residential Zoning Districts</th>
<th>Commercial and Industrial Zoning Districts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekdays, 7:00 a.m. to 7:00 p.m.</td>
<td>75</td>
<td>80</td>
<td>85</td>
</tr>
<tr>
<td>Weekends, including legal holidays 9:00 a.m. to 8:00 p.m.</td>
<td>60</td>
<td>65</td>
<td>70</td>
</tr>
</tbody>
</table>

Source: City of Richmond Municipal Code Chapter 9.52.110.

TABLE XII-6  CITY OF RICHMOND MAXIMUM NOISE LEVEL STANDARDS FOR STATIONARY CONSTRUCTION EQUIPMENT (DBA)

<table>
<thead>
<tr>
<th></th>
<th>Single-Family Residential Zoning Districts</th>
<th>Multi-Family Residential Zoning Districts</th>
<th>Commercial and Industrial Zoning Districts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekdays, 7:00 a.m. to 7:00 p.m.</td>
<td>60</td>
<td>65</td>
<td>70</td>
</tr>
<tr>
<td>Weekends, including legal holidays 9:00 a.m. to 8:00 p.m.</td>
<td>55</td>
<td>60</td>
<td>65</td>
</tr>
</tbody>
</table>

Source: City of Richmond Municipal Code Chapter 9.52.110.

Construction is performed in distinct phases, each with its own mix of equipment, workers, and activities. Consequently, each phase of construction has its own noise characteristics. Table XII-7 shows typical exterior noise levels at various phases of commercial construction. Construction activities associated with the project would potentially include pile driving, grading, installation of utilities, landscaping, and erection of the residential building. The primary construction related noise of concern is the short-term noise impact when pile driving, grading, and utility installation is conducted near existing residential and commercial property lines. Equipment typically used in these activities includes pile drivers, bulldozers, excavators, graders, backhoes, compactors, rollers, concrete trucks, loaders, and heavy-duty trucks. Table XII-8 shows typical noise levels associated with various types of construction-related machinery.
### TABLE XII-7  ESTIMATED NOISE LEVELS FROM CONSTRUCTION ACTIVITIES (dBA)

<table>
<thead>
<tr>
<th>Noise Source</th>
<th>Noise Level at 50 Ft</th>
<th>Noise Level at 100 Ft</th>
<th>Noise Level at 150 Ft</th>
<th>Noise Level at 200 Ft</th>
<th>Noise Level at 300 Ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground Clearing</td>
<td>83</td>
<td>75</td>
<td>71</td>
<td>68</td>
<td>64</td>
</tr>
<tr>
<td>Excavation</td>
<td>88</td>
<td>80</td>
<td>76</td>
<td>73</td>
<td>69</td>
</tr>
<tr>
<td>Foundations</td>
<td>81</td>
<td>73</td>
<td>69</td>
<td>66</td>
<td>62</td>
</tr>
<tr>
<td>Erection</td>
<td>81</td>
<td>73</td>
<td>69</td>
<td>66</td>
<td>62</td>
</tr>
<tr>
<td>Finishing</td>
<td>88</td>
<td>80</td>
<td>76</td>
<td>73</td>
<td>69</td>
</tr>
</tbody>
</table>

Notes: The following propagation adjustment was applied to estimate noise levels at 100, 200, and 300 feet assuming:

\[
dBA_2 = dBA_1 + 10 \times \log_{10} \left( \frac{D_1}{D_2} \right)^{2.5}
\]

Where:

- \(dBA_1\) reference noise level at a specified distance.
- \(dBA_2\) is the calculated noise level.
- \(D_2\) is the perpendicular distance from receiver.
- \(D_1\) is the reference distance.


### TABLE XII-8  TYPICAL NOISE LEVELS AT 50 FEET FROM CONSTRUCTION EQUIPMENT (dBA)

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Noise Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pile Driver</td>
<td>101</td>
</tr>
<tr>
<td>Dump Truck</td>
<td>88</td>
</tr>
<tr>
<td>Portable Air Compressor</td>
<td>81</td>
</tr>
<tr>
<td>Concrete Mixer (truck)</td>
<td>85</td>
</tr>
<tr>
<td>Jackhammer</td>
<td>88</td>
</tr>
<tr>
<td>Scraper</td>
<td>88</td>
</tr>
<tr>
<td>Dozer</td>
<td>87</td>
</tr>
<tr>
<td>Paver</td>
<td>89</td>
</tr>
<tr>
<td>Generator</td>
<td>76</td>
</tr>
<tr>
<td>Pump</td>
<td>76</td>
</tr>
<tr>
<td>Pneumatic Tools</td>
<td>85</td>
</tr>
<tr>
<td>Backhoe</td>
<td>85</td>
</tr>
</tbody>
</table>

The project would be required to comply with the limitations on construction activity included in the municipal codes of both the cities of Richmond and El Cerrito (Table XII-4 through XII-6). This would limit grading activities to the hours between 8 a.m. and 5 p.m., Monday through Friday, and would limit all other construction activities to the hours between 7 a.m. and 6 p.m., Monday through Friday, and 8 a.m. through 5 p.m. on Saturday. However, even when restricted to the allowable construction hours, construction noise can still be a nuisance when conducted in close proximity to residential and commercial receptors. Some phases of construction are anticipated to generate noise levels that would result in an increase in the ambient noise environment by 5 dBA Leq, which is the change required before any noticeable change in community response is expected. Additionally some phases of construction could cause maximum noise levels to exceed the City of Richmond thresholds (Tables XII-5 and XII-6). Therefore, the noise impact from construction would be considered a significant short-term impact. Implementation of Mitigation Measure NOI-2 below, which requires development of a construction noise control plan and provides for community notification and communication, would reduce adverse impacts associated with construction noise to a less-than-significant level.

Noise Generated upon Project Completion

The City of Richmond Community Noise Ordinance (Chapter 9.52) states that the impact of a project should be evaluated in terms of the increase in existing noise levels and potential for adverse community impact. The ordinance also states that the maximum noise level generated by a use or activity cannot exceed 60 dBA, 65 dBA, and 70 dBA for more than 30 minutes in any hour at the property line or district boundary of single-family residential, multi-family residential, or commercial uses, respectively. The project site is located adjacent to single family residential, multi-family residential, and commercial use properties. The City of El Cerrito evaluates the noise impacts of projects in residential areas where the $L_{da}$ already exceeds 60 dBA (City of El Cerrito Municipal Code Chapter 19.21.050(B)(4)) and may require specific practices to mitigate potential noise impacts of proposed development projects on adjacent properties. Examples of commonly required mitigation measures include:

- Screen and control noise sources such as parking, outdoor activities, and mechanical equipment.
- Increase setbacks for noise sources from adjacent dwellings.

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90 Ibid.
Wherever possible, do not remove fences, walls, or landscaping that serve as noise buffers, although design, safety and other impacts must be addressed.

- Use soundproofing materials and double glazed windows.
- Control hours of operation, including deliveries and trash pickup to minimize noise impacts.

The proposed long-term use of this project site would be residential, so the primary noise generation would occur from ventilation systems such as air conditioning units and from vehicular traffic, neither of which would be expected to generate noise levels above the City of Richmond thresholds. As a result of the project, peak vehicular traffic at the busiest intersection near the project site (Central Avenue/San Luis Street/ Pierce Street) is estimated to increase from 1,536 to 1,576 vehicles in the a.m. (an increase of 40 vehicles) and 2,123 to 2,174 vehicles in the p.m. (an increase of 51 vehicles). The addition of approximately 40 to 51 vehicles to existing traffic volumes of 1,500 to 2,000 vehicles would not result in a perceptible increase in noise levels. This is due to the nature of the additive properties of noise discussed above: traffic volumes would have to nearly double for a perceptible change in noise levels to occur.

Additionally, the speed limit on the roads surrounding the project site is 25 mph. Because a large portion of vehicular noise results from the interaction between the tires and the roadway surface, the noise generated by vehicles at low speeds is minimal. Lastly, because the project involves the development of a multi-family residence in an area characterized by single- and multi-family residences and commercial uses, the development of the project site would not introduce a land use that would substantially alter the surrounding noise environment. Consequently, the project would not substantially increase long-term noise levels in the surrounding area or result in the exceedance of existing noise level thresholds.

The following mitigation measures are included as part of the project to minimize the potential noise impacts during construction and operation of the project:

**Mitigation Measure NOI-1 – Noise Analysis:** The project applicant shall prepare a noise analysis that specifies the means and methods required to ensure that noise levels meet the indoor (Table XII-3) and outdoor (Table XII-2) standards of the cities of Richmond and El Cerrito. At a minimum, the analysis shall be carried out to meet the following City of El Cerrito Chapter 19.21.050(B) (5) Municipal Code noise study standards:

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91 Fehr & Peers, 2013b, op. cit.
The analysis shall be prepared by qualified person experienced in the fields of environmental noise assessment and architectural acoustics.

- Noise levels shall be documented with sufficient sampling periods and locations to adequately describe local noise conditions and noise sources.

- Existing and projected noise levels shall be estimated in terms of Leq and Ldn or CNEL. Levels shall be compared to existing ambient noise levels.

- Mitigation shall be recommended, giving preference to site planning and design rather than noise barriers, where feasible.

- Noise exposure after the prescribed mitigation measures have been implemented shall be estimated.

The project applicant shall coordinate with the cities of Richmond and El Cerrito to determine whether the outdoor noise exposure standards identified by each city (65 dBA in Richmond and 60 dBA in El Cerrito, though this may be increased to 65 dBA at the discretion of the Planning Commission) shall be applicable to any private patios, decks, or balconies on the apartment units or whether it shall only apply to courtyards and other community open spaces that are part of the project.

In order to control indoor noise levels, building sound insulation requirements may need to include the provision of forced-air mechanical ventilation, so that windows could be kept closed at the occupant’s discretion to control noise. Because the exterior noise levels generated by I-80 may be between 70 and 75 dBA, special building construction techniques may be required. These techniques include, but are not limited to, sound-rated windows and doors, sound-rated exterior wall assemblies, and acoustical caulking. The specific determination of what treatments are necessary to achieve the indoor noise performance standards of 45 dBA Ldn, with maximum instantaneous noise levels of 50 dBA in bedrooms and 55 dBA in other rooms, shall be conducted on a unit-by-unit basis during project design.

Results of the noise analysis, including a detailed description of all necessary noise control measures required to meet the indoor and outdoor noise standards shall be submitted to the cities of Richmond and El Cerrito along with the building plans and approved prior to issuance of a building permit. The implementation of this mitigation measure would reduce the noise exposure levels of residents of the proposed land use to a less-than-significant level.

**Mitigation Measure NOI-2 – Noise Control Plan:** The project applicant shall prepare a construction noise control plan that identifies technically and economically feasible measures to reduce the noise levels generated by the use of construction equipment, particularly pile drivers, below the maximum noise level standards specified in
Chapter 9.52.110 of the City of Richmond Municipal Code (Tables XII-5 and XII-6). The control plan shall be prepared by a qualified noise professional and approved by the cities of Richmond and El Cerrito prior to issuance of grading permits by the cities. A qualified professional is defined as a Board Certified Institute of Noise Control Engineering member or other qualified consultant or engineer approved by the project engineer. The construction noise control plan would include, but not be limited to, the following measures:

a) Muffle and maintain all equipment used on-site. All internal combustion engine-driven equipment shall be fitted with mufflers that are in good condition. Good mufflers shall result in non-impact tools generating a maximum noise level of 80 dB when measured at a distance of 50 feet.

b) Use “quiet” air compressors and other stationary noise sources where technology exists.

c) Locate all stationary noise-generating equipment, such as air compressors and portable power generators, as far away as possible from adjacent land uses.

d) Schedule construction activities to have the least impact on noise sensitive receptors (existing residents) in the area. In accordance with the municipal codes of the cities of Richmond and El Cerrito, this shall be accomplished with the following measures:

   i. Limit grading operations to Monday through Friday between 8 a.m. and 5 p.m. (City of Richmond Municipal Code Chapter 12.44.060(h)(1)).

   ii. All other construction operations shall be limited to 7 a.m. to 6 p.m., Monday through Friday, and 8 a.m. to 5 p.m. on Saturday. Work is prohibited on Sundays and Holidays (City of El Cerrito Municipal Code Chapter 16.02.080 Section 117).

e) Notify all adjacent residents and commercial properties of the construction schedule in writing.

f) Designate a “disturbance coordinator” who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented.
g) Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule.

h) Route truck traffic away from residential streets to the extent possible. For example, have truck traffic enter and leave the project site via Central Avenue and avoid San Mateo Street.

i) Combine noisy operations so that they occur in the same time period. The total noise level produce with not be significantly greater than the level produced if the operation were performed separately.

j) Avoid impact pile driving, if possible. Drilled piles or the use of a sonic or vibratory pile driver are a quieter alternative where the geological conditions permit their use.

**Mitigation Measure NOI-3- Vibration Impact Assessment:** The project applicant shall prepare a vibration impact assessment to determine potential vibration levels at structures located in the vicinity of the project site generated by the pile driving activities proposed on the project site. The vibration impact assessment shall be prepared by a qualified professional and approved by the cities of Richmond and El Cerrito prior to issuance of grading permits by the cities. A qualified professional is defined as a Board Certified Institute of Noise Control Engineering member or other qualified consultant or engineer approved by the project engineer. Detailed recommendations shall be made to reduce vibration levels below the damage criteria of 0.2 PPV (in/sec) (Table XII-11) in order to ensure that the pile driving activities would not damage nearby commercial and residential buildings. All recommendations in the impact assessment shall be incorporated into construction plans for the project.

Compliance with existing City of Richmond and City of El Cerrito construction ordinances (Table XII-4) and the implementation of the above mitigation measures would reduce the impact of construction noise to a less-than-significant level.

b) **Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?**

**Potentially Significant Unless Mitigation Incorporation.** Implementation of the mitigation measure below would reduce the potential impact related to vibration and noise to a less-than-significant level.

Vibration is an oscillatory motion through a solid medium (versus noise which is an oscillatory motion through air). Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive
receptors to vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick), and vibration-sensitive equipment. Vibration amplitudes are usually expressed as either peak particle velocity (PPV) or the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous peak of the vibration signal. The RMS of a signal is the average of the squared amplitude of the signal.

Table XII-9 summarizes the vibration standards of the cities of Richmond and El Cerrito. Tables XII-10 and XII-11 summarize the vibration criteria to prevent disturbance of residents and to prevent damage to structures. In contrast to airborne noise, groundborne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads.

### Table XII-9  Vibration Standards of the Cities of Richmond and El Cerrito

<table>
<thead>
<tr>
<th>City of Richmond</th>
<th>City of El Cerrito</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work must be controlled to prevent causing a public nuisance such as noise and vibration.</td>
<td>Work must be controlled to prevent causing a public nuisance such as noise and vibration.</td>
</tr>
<tr>
<td>--</td>
<td>No use, activity or process shall produce vibrations that are perceptible without instruments by a reasonable person at or beyond the property line of the site on which they are situated.</td>
</tr>
</tbody>
</table>

Notes: -- = no defined standard  
\(^a\) City of Richmond Municipal Code Chapter 12.44.060(h)(1).  
\(^b\) City of El Cerrito Municipal Code Chapter 16.02.080 Section 117.  
\(^c\) City of El Cerrito Municipal Code Chapter 19.21.050(E).  
Source: City of Richmond and City of El Cerrito Municipal Codes.

### Table XII-10  Vibration Criteria to Prevent Disturbance of Residents – VDB RMS

<table>
<thead>
<tr>
<th>Frequent Events</th>
<th>Occasional Events</th>
<th>Infrequent Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>72</td>
<td>75</td>
<td>80</td>
</tr>
</tbody>
</table>

\(^a\) More than 70 vibration events of the same kind per day.  
\(^b\) Between 30 and 70 vibration events of the same kind per day.  
\(^c\) Fewer than 30 vibration events of the same kind per day.  
TABLE XII-11  VIBRATION CRITERIA TO PREVENT DAMAGE TO STRUCTURES

<table>
<thead>
<tr>
<th>Type of Situation</th>
<th>PPV (in/sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Historic sites or other critical locations</td>
<td>0.1</td>
</tr>
<tr>
<td>Residential buildings, plastered walls</td>
<td>0.2 – 0.3</td>
</tr>
<tr>
<td>Residential buildings in good repair with gypsum board walls</td>
<td>0.4 – 0.5</td>
</tr>
<tr>
<td>Engineered structures, without plaster</td>
<td>1.0 – 1.5</td>
</tr>
</tbody>
</table>


Construction activities can result in varying degrees of ground vibration, depending on the equipment, activity, and relative proximity to sensitive receptors. The vibration levels for construction equipment that could be used at the project site are summarized in Table XII-12. Although the table provides one vibration level for each piece of equipment, it should be noted that there is considerable variation in reported ground vibration levels from construction activities, primarily due to variation in soil characteristics.

Vibration generated during construction activities could have the potential to disturb residents and cause damage to buildings. The nearest residences are located adjacent to the project site; consequently, the vibration generated when construction equipment is operated in close proximity to these receptors could exceed the vibration impact criteria for the disturbance of residents (Table XII-10). However, the vibration would be temporary since the locations of grading, soil compaction, and pile driving activities would vary over time across the site and therefore the impacts of these activities to any given receptor would not be expected to last more than a few days.

In addition, the City of Richmond limits grading activities to the hours between 8 a.m. and 5 p.m. Monday through Friday. The City of El Cerrito limits all construction activities to the hours between 7 a.m. and 6 p.m., Monday through Friday, and 8 a.m. through 5 p.m. on Saturday. This regulation restricts any impact to normal daytime hours, thereby reducing the likelihood of the disturbance of residents. As a result, the potential vibration impact on residents in the vicinity of the project site from the use of earthmoving and pile driving equipment would be less than significant.

The vibration levels generated by the use of an impact pile driver or sonic pile driver have the potential to exceed the 0.2 PPV in/sec vibration threshold above which damage to buildings may occur, depending on how close the building is to the construction activity. For instance, based on the upper range of vibration from impact pile driving in Table XII-
12 (1.518 PPV), if the building is located within 100 feet of the construction activity the vibration levels could exceed 0.2 PPV. The implementation of Mitigation Measure NOI-3 below, which requires a vibration impact assessment and the implementation of practices that reduce vibration to levels which would not damage nearby residential and commercial buildings, would reduce this impact to a less-than-significant level.

**Table XII-12 Vibration Source Levels for Construction Equipment**

<table>
<thead>
<tr>
<th>Equipment</th>
<th>PPV at 25 ft (in/sec)</th>
<th>Approximate RMS (VdB) at 25 ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pile Driver (impact)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>upper range</td>
<td>1.518</td>
<td>112</td>
</tr>
<tr>
<td>typical</td>
<td>0.644</td>
<td>104</td>
</tr>
<tr>
<td>Pile Driver (sonic)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>upper range</td>
<td>0.734</td>
<td>105</td>
</tr>
<tr>
<td>typical</td>
<td>0.170</td>
<td>93</td>
</tr>
<tr>
<td>Large bulldozer</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.089</td>
<td>87</td>
</tr>
<tr>
<td>Caisson drilling</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.089</td>
<td>87</td>
</tr>
<tr>
<td>Loaded trucks</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.076</td>
<td>86</td>
</tr>
<tr>
<td>Jackhammer</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.035</td>
<td>79</td>
</tr>
<tr>
<td>Small bulldozer</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.003</td>
<td>58</td>
</tr>
</tbody>
</table>


Substantial groundborne vibration that disturbs residents and damages buildings located near the project site could be generated by the use of heavy equipment during construction (Tables XII-10 through XII-12). Construction hour limitations specified in the Municipal Codes of the cities of Richmond and El Cerrito (Table XII-4) limit the likelihood of the disturbance of nearby residents.

**Mitigation Measure NOI-4**: Implement Mitigation Measure NOI-3. Implementation of Mitigation Measure NOI-3 would reduce the potential of vibration generated during construction activities to damage nearby residential and commercial buildings to a less-than-significant level.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

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n4 PPVequip = PPVref x (25/D) \(^n\) where: PPV (equip) is the peak particle velocity in in/sec of the equipment adjusted for distance PPV (ref) is the reference vibration level in in/sec at 25 feet from Table XII-12 D is the distance from the equipment to the receiver.
Less Than Significant. The proposed long-term use of this project site would be residential, and the surrounding area is characterized by single- and multi-family residences and commercial uses. Therefore, the development of the project site would not introduce a land use that would substantially alter the surrounding noise environment. The primary noise generation from the project would occur from ventilation systems such as air conditioning units and from vehicular traffic, neither of which would result in a substantial permanent increase in ambient noise levels, as discussed above. Therefore, no substantial permanent increase in ambient noise levels is expected as a result of project implementation.

d)  A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Potentially Significant Unless Mitigation Incorporation. The use of construction equipment on the project site could result in a substantial temporary and periodic increase in ambient noise levels (Tables XII-7 and XII-8).

Mitigation Measure NOI-5: Implement Mitigation Measure NOI-2. Implementation of Mitigation Measure NOI-2 would decrease noise generated by construction activities to a less-than-significant level.

e)  For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Less Than Significant. The project site is not located within an airport land use plan or within two miles of a public or private airport. The nearest airport is Oakland International Airport, which is located approximately 12 miles south of the project site. The noise generated by aircraft from Oakland International Airport is below the 65 dBA CNEL in Richmond area. Therefore, the project would not expose people residing or working in the project area to excessive aircraft noise.

f)  For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

Less Than Significant. The project site is not located within the vicinity of a private airstrip. The nearest private airstrip is the San Rafael Airport, located approximately 14 miles northwest of the project site. Consequently, the project would not expose people residing or working in the project area to excessive aircraft noise from a private airstrip.

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95 City of Richmond, 2012, op. cit.
XIII. POPULATION AND HOUSING

Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

The project would add up to 172 units to the housing stock in the City of Richmond. This section analyzes the potential impact of the project on existing uses in the vicinity due to the potential displacement of housing or people.

Discussion

a) Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Less Than Significant. Plan Bay Area, jointly adopted by the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG) Executive Board in July 2013, is the regional framework for coordinating local and regional land use and transportation planning. The Plan identifies Priority Development Areas (PDAs) as the implementing framework for where new housing and job development should be located. The “El Cerrito – San Pablo” PDA includes the project site. The PDA is envisioned as an attractive, thriving, vibrant, mixed-use transportation corridor with nodes of medium- to high-density residential uses at all levels of affordability, supported by civic and cultural opportunities and jobs.66

Following the Draft Plan Bay Area process, much of Richmond, including the project site, was identified as a “community of concern” meaning a location within a PDA where existing lower-income neighborhoods could be displaced by new growth and investment.

The addition of multi-family housing units, including below-market rate housing, provides an opportunity to increase the housing stock and prevent potential displacement.

The City of Richmond Housing Element adopted in January 2013 expresses four goals:97

Goal H-1: A Balanced Supply of Housing – Promote a balanced supply of housing types, densities, and prices to meet the needs of all income groups.

Goal H-2: Better Neighborhoods and Quality of Life – Improve the quality of life for all residents and preserve and enhance Richmond’s residential neighborhoods; specifically promote high quality living environments, address substandard conditions, preserve and modernize public housing, and conserve affordable housing at risk of converting to market rates.

Goal H-3: Expanded Housing Opportunities for Special Needs Groups – Promote the expansion of housing opportunities for all special needs groups, including seniors, female-headed households, persons with disabilities, first-time homebuyers, large families, and homeless individuals and families.

Goal H-4: Equal Housing Access for All – Strive to achieve equal housing access for all people regardless of race, religion, gender, marital status, age, ancestry, national origin, color, sexual orientation, familial status, source of income, or disability.

The project would replace a vacant lot with 172 residential units, adding approximately 492 residents98 at an infill development lot located within a PDA, and proximate to transit facilities and neighborhood-oriented uses, as well as other citywide and regional amenities. The site’s development would thus contribute toward regional and City goals of increasing the supply of housing in appropriate locations and would therefore have a less-than-significant impact on housing and population growth.

b) Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. The project site consists of a vacant previously-developed commercial property. There are no residential units on the site. As a result, development of the project would not result in the displacement of residential units nor necessitate construction of replacement housing elsewhere.

97 City of Richmond, 2013. General Plan, Housing Element.

98 According to the 2010-2012 American Community Survey, the average household size in the City of Richmond is 2.86 persons per household. With 172 units proposed, the project could result in approximately 492 residents. However, the project’s unit mix contains units targeted for families: 74% 2-bedroom units, 20% 3-bedroom units, and 6% 4-bedroom units. Thus, the average persons per household rate will likely be higher—especially if it is operated as rental—as opposed to ownership units.
c) Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

**No Impact.** The project site consists of a vacant previously-developed commercial property. As a result, development of the project would not result in the displacement of people nor necessitate construction of replacement housing elsewhere.
XIV. PUBLIC SERVICES

Would the project:

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

   - Fire protection?  □  □  ■  □
   - Police protection? □  □  ■  □
   - Schools?        □  □  ■  □
   - Parks?          □  □  ■  □
   - Other public facilities? □  □  ■  □

The project site is in an urban area served by existing infrastructure and public services. This section evaluates the potential impact of the project, which includes 165 residential units, on the provision of services.

Discussion

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: fire protection, police protection, schools, parks, or other public facilities?

Fire Protection – Less Than Significant. Fire protection to the project site is provided by the Richmond Fire Department (RFD). RFD operates seven fire stations within the city limits. The RFD station nearest to the project site is Station #64, located at 4801 Bayview Avenue, approximately 1.4 miles from the project site.

To reduce the impact of new development on the existing RFD facilities, equipment, and personnel, the City requires that the buildings, access, and water supply meet the California State Fire Code and City building requirements. In addition, project developers
are required to pay development impact fees as established by City ordinance to mitigate impacts on the existing RFD facilities, equipment, and personnel.

The RFD goal is to respond to 85 percent of emergency calls in 6 minutes or less, as described in the Richmond General Plan EIR. Average response times to the area around the project site are between 4 and 5 minutes. Implementation of the project may result in an incremental increased demand for fire protection services. However, the project is located on an urban site in a highly-developed area, in close proximity to existing fire protection services. The project would not require the provision of or need for new or physically altered facilities to continue to serve the project site. As a result, the project would not result in a substantial adverse physical impact nor would it substantially affect response times for fire services. The project’s impact related to the provision of fire services would be less than significant.

**Police Protection – Less Than Significant.** Police protection, 911 emergency dispatch, and investigative services throughout the city are provided by the Richmond Police Department (RPD). The City is geographically divided into three districts (Northern, Central, and Southern) with three beats per district. The project site is located in Beat 3 in the Southern Section (City of Richmond General Plan Map 12.6). The main police station is located at 1701 Regatta Boulevard, approximately 3.5 miles from the project site.

The Department’s current authorized strength is 198 sworn personnel, which represents 1.9 officers per 1,000 residents. Depending on availability of personnel and the type of call, the Police Department’s response to calls is based on a system of priorities. It maintains a response time of three to five minutes or less for top priority calls (robberies in progress, imminent danger to life, etc.).

Implementation of the project may result in an incremental increased demand for police services. However this increase would not be substantially greater than the existing demand for police services in the area, and thus meeting this additional demand would not require the provision of or need for new or physically altered facilities to continue to serve the project site. The project would therefore have a less-than-significant impact on police protection services.

**Schools – Less Than Significant.** The City Richmond is part of the West Contra Costa County Unified School District (WCCUSD). The project site lies within the school boundaries for Harding Elementary School (kindergarten through 6th grade), Portola Middle School (7th through 8th grade), and El Cerrito High School (9th through 12th grade).

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100 City of Richmond, 2012. General Plan, Public Safety and Noise Element.
Table XIV-1 describes capacity and current (2012) enrollment for each of the schools serving the project site. To determine the number of students that the project could generate, WCCUSD uses students per household factors, by grade level, of to estimate student enrollment. For multi-family housing, the factors are: 0.333 (K-6th grade), 0.154 (7th through 8th grade), and 0.185 (9th through 12th). Based on these factors (and assuming 165 units and a 5 percent vacancy rate), an increase of approximately 54 elementary school students, 25 middle school students, and 30 high school students could result from the project.

**TABLE XIV-1  PROJECTED POPULATION GROWTH AND CAPACITY, BY SCHOOLS SERVING THE PROJECT SITE**

<table>
<thead>
<tr>
<th>School</th>
<th>(A) Capacity</th>
<th>(B) Actual (2012)</th>
<th>(C) Estimate from Proposed Project</th>
<th>Remaining Capacity (A-B+C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harding Elementary</td>
<td>413</td>
<td>251</td>
<td>+54</td>
<td>216</td>
</tr>
<tr>
<td>Portola Middle</td>
<td>600</td>
<td>565</td>
<td>+25</td>
<td>60</td>
</tr>
<tr>
<td>El Cerrito High</td>
<td>1,600</td>
<td>1,275</td>
<td>+30</td>
<td>355</td>
</tr>
</tbody>
</table>


The final column of Table XIV-1 identifies the remaining capacity at each of the three schools assuming existing enrollment, plus enrollment that could be expected from the project. All three schools would continue to have adequate capacity with the project. The project would cause an incremental increased demand for school services within the WCCUSD. However, the capacity for all three schools accommodates the project’s potential student enrollment.

In addition, the project would be subject to school impact fees for residential development constructed within the city to be paid to the district, as defined in Chapter 15.10 (School Fees and Dedications).

The project would not result in a substantially increased demand for school facilities, and would not require new or expanded school facilities. The project would thus result in a less-than-significant impact on school facilities.

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Parks – Less Than Significant. Parks in the vicinity of the project area (with distances from the project shown in parentheses) include: Central Park (0.01 mi, just across Central Avenue), Creekside Park in Albany (0.3 mi), Richmond Annex Senior Center (0.5 mi), Huntington Park (0.6 mi), Fairmont Park in El Cerrito (0.7 mi), Point Richmond Regional Shoreline (0.7 mi), Mendocino Park (1.1 mi), and Monterey Play Lot (1.2 mi).

The project includes private on-site open space and recreation including a tot lot, courtyards, patios, landscaped areas, a community room, and a fitness room that would provide residents with space to support active and passive recreation.

As described in the General Plan, the City has established a goal of providing 3 acres of community or neighborhood parkland per 1,000 residents. Currently, the City has 270 acres of community and neighborhood parkland and a population of 106,516, resulting in a ratio of 2.54 parks/1,000 residents, somewhat lower than the standard. The project would add approximately 492 residents, as described in the Population and Housing section and would not add community or neighborhood parkland Citywide. As a result, the ratio would decrease slightly to 2.53 community and neighborhood parks per 1,000 persons.

The City mitigates impacts created from additional demands on existing park and recreation services due to the increase in new residential development by imposition of development impact fees. As a condition of approval of a final map or parcel map, the developer is either required to dedicate land or pay a fee for park or recreational purposes as defined in Chapter 15.08.400 (Park and Recreation Dedication and Fees).

Residents of the project would not be expected to increase the use of existing neighborhood parks and recreation facilities to such extent that these facilities would be physically degraded or their substantial physical deterioration would be accelerated. The incremental residential growth that would result from the project would not require the construction of new recreational facilities or the expansion of existing facilities. The impact on recreational facilities would therefore be less than significant.

Other Public Facilities – Less Than Significant. The City of Richmond maintains a main library at the Downtown Civic Center and two branches, the Bayview Branch Library and the West Side Library. The City of Richmond also owns a 750-boatslip marina in the Marina Bay Yacht Harbor. The increase in population that would be caused by the project is not anticipated to create adverse physical impacts to any other public facilities.

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XV. RECREATION

Would the project:

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? □ □ ■ ■□

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? □ □ ■ ■□

The City of Richmond is served by an extensive network of 86 parks and open space areas totaling 6,528 acres, ranging from large regional parks to small compact play lots and parks. In addition, the City owns and operates a range of recreation facilities including: eight community centers; two senior centers; a swim center; an indoor recreation complex; and a municipal natatorium. In addition to publicly owned and operated recreational facilities, several private facilities are located in Richmond including the Richmond Country Club, Marina Bay Yacht Harbor, Richmond Yacht Club Harbor, YMCA, Police Activities League, the Boys and Girls Club and Red Rock Marina.

Discussion

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Less Than Significant. As described in the preceding Public Services section, residents of the project would not be expected to increase the use of existing neighborhood parks and recreation facilities to such extent that these facilities would be physically degraded or their substantial physical deterioration would be accelerated. Moreover, the project would be subject to a citywide development impact fee for parks and recreation. The incremental residential growth that would result from the project would not result in substantial or accelerated physical deterioration. The impact on recreational facilities would therefore be less than significant.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Less Than Significant. The project does not propose the construction or expansion of any new recreational facilities that might have an adverse physical effect on the
environment, although the project does include on-site open space and recreation facilities including a tot lot and a fitness room. In addition, the project would be subject to a citywide development impact fee for parks and recreation. The incremental residential growth that would result from the project would not require the construction of new recreational facilities or the expansion of existing facilities. The impact on recreational facilities would therefore be less than significant.
XVI. TRANSPORTATION/TRAFFIC

Would the project:

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?  

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?  

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?  

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?  

e) Result in inadequate emergency access?  

f) Conflict with adopted polices, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

As described above, the project would be constructed on a site in an urbanized area of Richmond and small portion of El Cerrito. The project site is bounded by Central Avenue to the north, Belmont Avenue to the east, and San Mateo Street to the west, which provides primary access to the site. Secondary access for bicyclists and pedestrians only would be provided by a bridge from Belmont Avenue, across the drainage channel, to the project site. The project would reconstruct sidewalks adjacent to the site. Along Central Avenue, improvements would include street trees and upgraded corner ramps that comply with Americans with Disabilities Act (ADA) regulations. The project does not propose any other modifications to the existing street configuration. The analysis evaluated existing conditions, the contribution of the project, and contribution of the project along with other approved projects (e.g., the I-80/Central Avenue Operational Improvement Project).
Discussion
The following discussion is based on the “Transportation Impact Assessment for Central Avenue Residential” prepared by Fehr & Peers in December 2013, which analyzed the revised project proposal with 178 apartment units and one entry and one exit driveway on San Mateo Street, and one entry on Belmont Avenue. Note that this unit count is slightly higher than the current proposed project of 172. However, this difference is not anticipated to change the outcome of the analysis or conclusions below.

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Less Than Significant. The City of Richmond does not have a level of service policy for vehicles, but according to the General Plan, the city strives to balance modes of travel and provide equitable access, recognizing that people travel by a variety of modes—not just in vehicles—and that the use of an auto-focused level of service standard does not address the mobility needs for non-auto roadway users.

General Plan Consistency
The project is consistent with the circulation policies of the City of Richmond General Plan and helps to implement the following policies and actions though sidewalk improvements, the proposed pedestrian/bicycle bridge, and on-site bicycle parking. (The summary text of each policy/action is listed below; see the complete General Plan for details.105)

Policy CR1.5 Safe and Convenient Walking and Bicycling. Promote walking and bicycling as a safe and convenient mode of transportation.

Policy CR1.8 Place-Based Circulation Approach. Promote the place-based planning approach and classification system.

Policy CR2.2 Complete Streets. Promote mixed-use urban streets that balance public transit, walking and bicycling with other modes of travel.

Action CR2.C Streetscape Improvements. Continue to implement streetscape improvements to enhance access, lighting, safety and experience for pedestrians, bicyclists, transit users, and motorists.

Additionally, the number of trips projected by the project was contemplated in the General Plan and the General Plan EIR analysis for the relevant traffic analysis zone, even with the density increase over and above what this General Plan designation would typically allow. The project does not suggest new significant impacts or substantially more severe impacts than those contemplated in the General Plan EIR.

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Significance Threshold

For the purposes of this checklist question and analysis, a significant impact is identified if:

- A signalized intersection is projected to operate within expected delay ranges (i.e., level of service [LOS] D or better with an average control delay of equal to or less than 55 seconds per vehicle) without the project and the project is expected to cause the facility to operate at an unacceptable LOS (LOS E or F);
- An intersection is projected to operate at or over capacity (i.e., LOS E or F) without the project, and the project is expected to increase the average control delay by more than 5 seconds; or
- The operation of an unsignalized study intersection is projected to decline with the addition of project traffic, and if the installation of a traffic signal based on the Manual on Uniform Traffic Control Devices (MUTCD) Peak Hour Signal Warrant (Warrant 3) would be warranted.

The “Transportation Impact Assessment for Central Avenue Residential” report analyzed trip generation, distribution, and assignment to evaluate potential impacts on the surrounding roadway network. The report analyzes trip generation using rates from the Institute of Transportation Engineers Trip Generation (9th Edition) for residential apartments. Fehr & Peers then applied a 20 percent trip reduction adjustment to take into account the lower auto trip rates expected in this dense infill community with existing transit, retail, and other nearby services. Fehr & Peers estimated that the project would generate 962 daily vehicle trips and 241 daily walking or biking trips.

The findings, organized by the three thresholds defined above, follow:

Signalized Intersection and Delay

As shown in Table XVI-1, during the weekday AM and PM peak hour all signalized intersections operate at LOS C or better with the exception of the I-80 Westbound Ramps/Jacuzzi Street/Central Avenue intersection which operates at LOS E. During the Saturday midday peak hour, study intersections operate at LOS D or better with the exception of the I-80 Westbound Ramps/Jacuzzi Street/Central Avenue intersection which operates at LOS F.

Signalized intersections would continue to operate at LOS D or better with the project (right-hand columns in Table XVI-1), with the exception of the I-80 Westbound Ramps/Jacuzzi Street/Central Avenue intersection which is project to operate at LOS E during the weekday AM and PM peak hour and LOS F during the Saturday midday peak hour. Project traffic would slightly increase average signal delay at the Jacuzzi Street, Pierce Street, San Mateo Avenue and Belmont Avenue intersections along Central Avenue.
### TABLE XVI-1  PEAK HOUR INTERSECTION LOS AND DELAY SUMMARY, SIGNALIZED INTERSECTIONS

<table>
<thead>
<tr>
<th>Signalized Intersection</th>
<th>Peak Hour</th>
<th>Existing</th>
<th>Existing + Project</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AM</td>
<td>PM</td>
<td>Sat.</td>
</tr>
<tr>
<td>Jacuzzi Street/San Joaquin Street I-80 Westbound Ramps/Central Avenue&lt;sup&gt;a&lt;/sup&gt;</td>
<td>57.7 E</td>
<td>56.9 E</td>
<td>&gt;100 F</td>
</tr>
<tr>
<td></td>
<td>61.6 E</td>
<td>61.2 E</td>
<td>&gt;100 F</td>
</tr>
<tr>
<td>I-80 Eastbound Ramps/Central Avenue</td>
<td>12.3 B</td>
<td>31.6 C</td>
<td>17.1 B</td>
</tr>
<tr>
<td></td>
<td>11.8 B</td>
<td>30.4 C</td>
<td>17.9 B</td>
</tr>
<tr>
<td>Pierce Street/San Luis Street/Central Avenue</td>
<td>19.4 B</td>
<td>19.1 B</td>
<td>36.4 D</td>
</tr>
<tr>
<td></td>
<td>18.7 B</td>
<td>24.3 C</td>
<td>40.2 D</td>
</tr>
</tbody>
</table>

<sup>a</sup> AM peak period: 7:00-9:00am; PM peak period: 4:00-6:00pm; Saturday peak period: 11:00am-2:00pm.

<sup>b</sup> Average intersection delay is calculated for all signalized intersections using the 2000 Highway Capacity Manual (HCM) methods.

<sup>c</sup> Jacuzzi Street / I-80 Westbound Ramps / Central Ave operate with a single traffic controller and operate as one intersection, therefore a single delay and LOS is reported for both intersections.


Central Avenue is a designated route of Regional Significance and LOS D or better must be maintained at intersections along the roadway. The I-80 Westbound Ramps/Jacuzzi Street/Central Avenue intersection currently operates below LOS D during the weekday and Saturday midday peak hours. With the project, this intersection would continue to operate below LOS D with the project during the weekday and Saturday midday peak hours. The project would contribute to deficient operations (particularly the Jacuzzi Street/San Joaquin Street I-80 Westbound Ramps/ Central Avenue intersection), but it would not add 5 or more seconds of delay, the threshold for a project-related impact. As a result, the impact is considered to be less than significant.

**Unsignalized Intersection and Delay**

In Table XVI-2, the average intersection delay is reported followed by the delay for the worst approach for each side-street stop controlled intersection. At the San Mateo Street and Yolo Avenue intersections with Central Avenue, the southbound stop controlled approach operates at a maximum of LOS F during the AM and Saturday midday peak hour. During the PM peak hour, the side street operates at an acceptable level of service. At Belmont Avenue, the northbound stop controlled approach operates at LOS F during the
Saturday midday peak hour but at an acceptable level of service during the AM and PM peak hour.

**TABLE XVI-2 PEAK HOUR INTERSECTION LOS AND DELAY SUMMARY, UNSIGNALIZED INTERSECTIONS**

<table>
<thead>
<tr>
<th>Side-Street Stop Controlled Intersection</th>
<th>Peak Hour</th>
<th>Existing</th>
<th>Existing + Project</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Delay</td>
<td>LOS</td>
</tr>
<tr>
<td>San Mateo Street/Central Avenue</td>
<td>AM</td>
<td>10.3 (SB &gt;100)</td>
<td>B (F)</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>1.2 (NB 16.4)</td>
<td>A (C)</td>
</tr>
<tr>
<td></td>
<td>Sat.</td>
<td>12.7 (SB &gt;100)</td>
<td>B (F)</td>
</tr>
<tr>
<td>Yolo Avenue/Central Avenue</td>
<td>AM</td>
<td>2.6 (SB 51.6)</td>
<td>A (F)</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>0.4 (SB 6.1)</td>
<td>A (A)</td>
</tr>
<tr>
<td></td>
<td>Sat.</td>
<td>3.5 (SB &gt;100)</td>
<td>A (D)</td>
</tr>
<tr>
<td>Belmont Avenue/ Central Avenue</td>
<td>AM</td>
<td>3.4 (NB 15.9)</td>
<td>A (C)</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>0.8 (NB 14.7)</td>
<td>A (B)</td>
</tr>
<tr>
<td></td>
<td>Sat.</td>
<td>15.1 (NB &gt;100)</td>
<td>C (F)</td>
</tr>
</tbody>
</table>

*For side-street stop controlled intersections, average delay is listed first followed by the delay for the worst approach.

* AM peak period: 7:00-9:00am; PM peak period: 4:00-6:00pm; Saturday peak period: 11:00am-2:00pm.


With the addition of project traffic, side street stop controlled intersections would have little to no change with exception to the San Mateo at Central Avenue intersection during the AM peak hour. Without the project, existing traffic conditions are expected to have poor operations for the southbound stop controlled approach. With the project, the northbound approach deteriorates as the worst stop controlled approach. However, overall intersection operations show little change.

To assess the need for signalization of stop-controlled intersections, the MUTCD (Federal Highway Administration 2012) presents eight signal warrants. The Peak Hour Volume Warrant was used in this study as a supplemental analysis tool to assess operations at unsignalized intersections. Based on this analysis, none of the unsignalized intersections currently meet peak hour signal warrants. Although several side-street stop movements are projected to operate below LOS D, signal warrants would not be met so the project impact to this intersection is less than significant.
As a result of the project’s consistency with General Plan policies and objectives, and study thresholds, the project’s impact is determined to be less than significant.

b) **Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?**

**Less Than Significant.** The Contra Costa Transportation Authority (CCTA) serves as the Congestion Management Agency (CMA) for Contra Costa County. CCTA’s most recent Congestion Management Program (CMP), referred to as the 2011 CMP, requires an analysis of any project that is expected to generate more than 100 peak hour vehicle trips. Since the project does not generate more than 100 trips during the AM, PM or Saturday midday peak hour, it does not trigger a consistency analysis.

The General Plan EIR identified significant and unavoidable impacts on three roadway segments, though not in the vicinity of the project:

- 23rd Street between Sanford and Grant
- San Pablo Dam Road between Barranca and El Portal
- I-580 between Western Drive and the San Rafael Bridge

These segments would exceed capacity in both the No Project condition and with implementation of the General Plan. The project would not contribute considerably to the General Plan’s cumulative impact for the following reasons. Project generated traffic would not likely travel substantially through 23rd Street and San Pablo Dam Road above due to the lack of proximity to the project site and the availability of alternate routes. The project’s contributions to traffic volumes on I-580 are minimal percentages of the total traffic volumes on this freeway segment. The proposed project would add a small increment to the cumulative long-term traffic increase on the local roadway network in the neighborhood. However, the volume of additional trips would not result in considerable contributions to any unacceptable intersection service levels. Thus, the project would not contribute considerably to any cumulative traffic impacts. The relative small size of the project results in a less-than-significant impact to the CMP.

c) **Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?**

**No Impact.** The project site is not located within an airport land use plan area or in the vicinity of a private airstrip. The proposed new residential building, at a maximum of 66 feet tall, would not interfere with air traffic patterns. As a result, the project would not result in a change in air traffic patterns, including either an increase in traffic levels, obstructions to flight, or a change in location, that results in substantial safety risks.
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less Than Significant. The project would not interfere with existing traffic circulation or cause major traffic hazards, nor would it have a significant effect on traffic-related hazards. Primary vehicle access to and from the site would be provided from Belmont Avenue, with secondary bicycle and pedestrian access via a new bridge that would cross the drainage channel from Belmont Avenue to the project site. No direct access to the project site would be provided from Central Avenue. All of the project’s parking would be provided in the ground-level garage, accessed from San Mateo Street. As a result, the project would have a less-than-significant impact on a roadway or from a project related design feature.

The following project improvement measures are recommended to promote safe conditions within and immediately adjacent to the project site:

Project Improvement Measure Trans-1: City Engineering staff will review site plan designs to assure that safe and comfortable pedestrian conditions are constructed with the Project. This includes assuring that all adjacent sidewalks and curb ramps meet the American’s with Disability Act (ADA) guidelines. At the City’s discretion, it may also require that far-side curb ramps are upgraded wherever near-side (adjacent to the Project) ramps are modified. Driveways should be designed to minimize cross-slopes within the sidewalks and with good visibility between entering/exiting vehicles and pedestrians on the sidewalks such that no audible (buzzers) and visual (flashing lights) alarms are necessary.

Project Improvement Measure Trans-2: The property manager should maintain landscaping on the western corners of Belmont Avenue/project driveway intersection to avoid sight distance conflicts (shrubs should not be higher than approximately 30 inches and tree canopies should be approximately six feet from the ground).

Project Improvement Measure Trans-3: The project should restrict on-street parking on Belmont Avenue for approximately 20 feet on either side of the Project driveway to limit sight distances issues.

Project Improvement Measure Trans-4: The applicant should provide way-finding signs in the garage directing drivers to the Belmont Avenue exit.

Project Improvement Measure Trans-5: The developer should providing traffic calming measures, such as speed humps on drive aisles, to reduce speeds through the parking garage.

e) Result in inadequate emergency access?
**Less Than Significant.** Emergency vehicle access to the project site would be via San Mateo Street or Belmont Avenue, such that if one entrance is blocked, alternative access would be available. The project would not interfere with emergency access to the project site or to other sites in the vicinity. Emergency vehicles would be able to reach the project site from along existing city streets. The project would be required to meet the standards contained in the Building and Fire Codes, and the Richmond Building and Fire Departments would review the final building plans to ensure sufficient access and safety. As a result, the project would have less-than-significant impact on emergency access to the project site or any surrounding sites.

f)  *Conflict with adopted polices, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?*

**Less Than Significant.** The project would not conflict with adopted programs for transit, pedestrian, or bicycle facilities, nor would it substantially decrease the performance or safety of these facilities as detailed below.

**Public Transit Facilities**

AC Transit currently has six bus routes that provide transit access within the vicinity of the project site. Route 25 stops directly in front of the project site at Central Avenue and Belmont Avenue. The five additional routes in the project vicinity stop along Central Avenue or at El Cerrito Plaza. Existing routes provide access to El Cerrito Plaza BART and destinations outside Richmond such as San Francisco, Berkeley and Oakland.

The addition of new transit users from the project to the existing transit network would have little to no effect on the system; therefore the project would have a less-than-significant transit impact.

One project improvement measure is recommended to promote the performance and safety of transit facilities:

**Project Improvement Measure Trans-6:** The applicant should upgrade the existing bus stop fronting the project at the Central Avenue at Belmont Avenue intersection to include a transit shelter with bench.

**Bicycle Facilities**

Bicycle facilities are currently provided on Belmont Avenue, south of Lassen Street and on Carlson Boulevard, east of the project site. The General Plan proposes Class II bicycle facilities along Central Avenue between the Bay Trail and San Pablo Avenue in, creating a potential connection between the project and multiple facilities including El Cerrito Plaza, the BART station and the Bay Trail. However, these proposed bicycle facilities were not
included in the Richmond Bicycle Master Plan, adopted after the General Plan. Therefore, this analysis does not consider the proposed bicycle facility plans.

The addition of new bicycle users from the project to the existing network would have little to no effect on the system; the project would not interfere with any existing bikeways; conflict with proposed bikeways or contradict any bicycle-related policies, therefore the project would have a less-than-significant bicycle impact.

One project improvement measure is recommended to promote the performance of bicycle facilities:

**Project Improvement Measure Trans-7:** The applicant should provide one bicycle parking space for every four units in a secured bicycle cage within the parking garage or provide a similarly safe and accessible bike parking.

**Pedestrian Facilities**

The project would reconstruct sidewalks adjacent to the site. Along Central Avenue, improvements would include street trees and upgraded ADA corner ramps. Driveways would be constructed such that they maintain good site distance to pedestrians on the sidewalks and minimize cross-slopes within the sidewalk. Existing pedestrian facilities, including sidewalks, crosswalks, pedestrian signals, and multi-use trails near the site, would serve the expected pedestrian demand from the project.

The addition of new pedestrians from the project to the existing network would have little to no effect on the system; the project would not interfere with any existing walkways; conflict with proposed walkways or contradict any pedestrian-related policies, therefore the project would have a less-than-significant pedestrian impact.

Project improvement measures are recommended to promote the safety of pedestrian facilities:

**Project Improvement Measure Trans-8:** The applicant should provide striped walkways across drive aisles to enhance pedestrian connectivity.

**Project Improvement Measure Trans-9:** Prior to building occupancy, and as a condition of project approval, the applicant should provide a pedestrian hybrid beacon (also known as a HAWK signal) at the existing marked, uncontrolled crosswalk at the east leg of the intersection of Central Avenue at Belmont Avenue, in order to reduce potential conflicts between vehicles traveling on Central Avenue and residents of the project using the existing crosswalk to access Central Park.
XVII. UTILITIES AND SERVICE SYSTEMS

Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? □ □ ■ □

b) 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? □ □ ■ □

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? □ □ ■ □

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? □ □ ■ □

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project’s projected demand in addition to the provider’s existing commitments? □ ■ □ □

f) Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs? □ □ ■ □

g) Comply with federal, State, and local statutes and regulations related to solid waste? □ □ ■ □

The project site is in an urban area and would be served by existing public services. Three districts collect and treat wastewater in Richmond: the Richmond Municipal Sewer District, West County Wastewater District, and Stege Sanitary Sewer District. The project site is located within the Stege Sanitary Sewer District. Wastewater collected in the District system flows to the Special District #1 Interceptor sewer and is then conveyed to the East Bay Municipal Utility District (EBMUD) Wastewater Treatment Facility in Oakland.

EBMUD provides water service to Richmond. Potable water is supplied via the San Pablo Reservoir from the Mokelumne River Basin in the Sierra Nevada and from local rain-fed reservoirs. Groundwater is utilized only for a portion of irrigation demand.

The City of Richmond contracts with Veolia Water North America to operate and maintain its storm drainage facilities throughout the City.
Richmond Sanitary Services, an affiliate of Republic Services, Inc., provides residential and commercial municipal solid waste, recycling and green waste collection services in the city.

**Discussion**

a) *Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?*

**Less Than Significant.** The City of Richmond is located within the jurisdiction boundaries of the San Francisco Bay Regional Water Quality Control Board (SF Bay RWQCB). The SF Bay RWQCB provides groundwater protection, wastewater discharge regulation, site cleanups, brownfields cleanups, stormwater basin planning, water quality information, enforcement, and stream and waterway protection. Under the SF Bay RWQCB National Pollutant Discharge Elimination System permit system, all existing and future municipal and industrial discharges to surface waters within the City would be subject to regulation.

To control sanitary sewer overflows, the regional and State water boards have developed detailed requirements for sewer collection agencies, including preparation of sewer system management plans every five years. The Stege Sanitary District revised its Sewer System Management Plan in October 2013. The District reports that stoppages and overflows have declined since 1992 when the District focused its efforts on aggressive line cleaning, continuous video inspection, and began to dedicate funds to repair or rehabilitate every line defect that could potentially result in a service interruption.\(^{105}\)

Wastewater from the project would be directed to existing facilities, which would continue to comply with all provisions of the NPDES program, as enforced by the SFBRWQCB. Therefore, the project would not result in an exceedance of wastewater treatment requirements and the impact is less than significant.

b) *Would the project 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?*

**Less Than Significant.** The project would have less-than-significant impacts on the construction of water and wastewater facilities.

Project-related wastewater would continue to flow into the sewer system and flow to the EBMUD Wastewater Treatment Plant, which is located in Oakland near the entrance of San Francisco Oakland Bay Bridge. The Stege Sanitary District began a sewer system rehabilitation plan in 1997, following the hydraulic upgrades to some of its major main lines subsequent to the East Bay Inflow/Infiltration (I/I) Study. As of 2012, a total of

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156,000 feet of main lines have been replaced. District engineering staff use condition assessment data to determine the priority in which main lines are rehabilitated. The project would not necessitate major new sewer facilities to serve the project. Moreover, sewer service charges would cover the cost of the operation, maintenance, and capital improvements to the sanitary sewer system. The Stege Sanitary District is responsible for the collection of sanitary sewer flows. EBMUD charges a separate fee for wastewater treatment. As a result, the project would have a less-than-significant impact on the construction of wastewater treatment facilities.

For planning purposes and looking to the year 2040, EBMUD’s current water supply is sufficient to meet customer needs during normal years, but insufficient to meet demand during single- and multi-year droughts. EBMUD is pursuing a range of strategies to reduce demand and increase supply, including through public outreach, leak fixes, water storage, infrastructure improvements and water conservation measures. In 2012, EBMUD completed a Water Supply Management Program (WSMP 2040) to address these challenges. Although the project would have an incremental increase on water demand, this level of increase was contemplated in the General Plan. The project would not require new water facilities and therefore would have a less-than-significant impact on the construction of water facilities.

c) Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

**Less Than Significant.** Stormwater passes into the City’s storm drain system and into local streams and channels, and ultimately enters San Francisco and San Pablo Bays.

The project would add new residential units to the site as well as landscaping. With the exception of some landscaped spaces, the project would largely cover the site with impervious surfaces. However, given that the existing site is covered by impervious asphalt paving, the project would not substantially change the amount of impervious coverage and associated volume of stormwater runoff. The project, therefore, would not substantially increase the stormwater runoff nor require new or expanded facilities, and would result in a less than significant impact on the storm drainage system.

d) Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

**Less Than Significant.** The WSMP 2040 estimates water supply needs for EBMUD to the year 2040 as well as updated demand projections. The demand projections rely on a land use-based method to forecast water demand. EBMUD met with staff at local jurisdictions

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107 Ibid.
to determine future growth trends, as stated in the Richmond General Plan EIR. As a result, the 2040 Demand Study (part of the WSMP 2040) acknowledges the recently updated Richmond General Plan and takes into consideration increased growth that would occur under the proposed General Plan.

The project would develop new residential uses on the site, thus increasing the amount of water necessary to serve the site, which is currently a vacant lot. However, the project would not result in an increase in water use beyond that assumed for planning purposes by the City of Richmond General Plan nor the EBMUD WSMP 2040. In summary, the project would have a less-than-significant impact on water supply capacity.

e) Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project’s projected demand in addition to the provider’s existing commitments?

Potentially Significant Unless Mitigation Incorporation. In general, wastewater generation is approximately 70 to 90 percent of water consumption, according to the General Plan EIR analysis, the variance being largely attributed to the amount of landscaping on site. In order to provide a conservative analysis, the Richmond General Plan EIR analysis assumed that 90 percent of the water demand would become wastewater.

The contribution to the daily wastewater received by the treatment facilities resulting from the project would incrementally increase from the current City’s daily wastewater flow. However, the residential units and additional population estimated from the project would not result in an increase in wastewater generation beyond that assumed for planning purposes by the City of Richmond General Plan. However, since the project is located in the Stege Sanitary District and not the Richmond Municipal Sewer District, it must comply with the Stege Sanitary District’s requirements including preparation of a sewer capacity study, which is triggered by a development of 10 or more residential units.

Mitigation Measure UTL-1 – Sanitary Sewer Capacity Study. The applicant shall analyze the impact of the project on the capacity of the existing sanitary sewer system, the post-development capacity, and the percent of pipe full at peak flow, and shall confirm the adequacy of existing local and trunk lines for existing and anticipated future flows. The study shall include the following analyses/assumptions:

- At a minimum, two manhole locations shall be flow monitored for a two-week wet weather period to determine existing flow characteristics. The locations shall be at the sewer line nearest the project site, and at the nearest trunk line. The monitoring shall be dynamic, continuous and be recorded at 15-minute intervals.
- The analysis of this data will use the following peaking factors for dry weather flow: 4.5 for local lines, 1.5 trunk lines.
• In lieu of wet weather monitoring, wet weather flow will be calculated at 400% of peak dry weather flow.
• Fixture unit equivalents shall be used to determine the amount of proposed project flow.
• The average family unit shall be 3 persons per residences and 100 gallons/day for proposed residential flows.

The study shall be submitted to the Stege Sanitary District for review and acceptance. A letter from the Stege Sanitary District documenting its capacity to serve the project must be provided to the Richmond Planning Department before a building permit is issued.

With implementation of Mitigation Measure UTL-1, the potential impact on wastewater capacity would be less than significant.

f) Would the project be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs?

Less Than Significant. As established by Assembly Bill 939, the City is required to divert 50 percent of its solid waste through recycling, reuse, composting, and other activities. The Per Capita Disposal Measurement System Act (SB 1016) further specifies the way to measure progress toward meeting the statutory waste diversion mandates. The California Department of Resources Recycling and Recovery (CalRecycle) now has an individual disposal target (expressed as pounds per person per day) to represent their 50 percent diversion equivalent: for 2012, this rate is 4.3 pounds/resident/day.

According to the Richmond General Plan EIR, the City’s, including the project’s solid waste would be diverted to the Golden Bear Transfer Facility before being disposed of at the Potrero Hills Landfill. This landfill has a permitted capacity of 4,330 peak tons/day and a total permitted design capacity of 83.1 million cubic yards; its estimated closure date is 2048.110

While the increased use of the site through residential development would add incrementally to total waste generation at the project site, because of the long-term capacity available at the Potrero Hills Landfill the project would be adequately served by the landfill and thus would have a less-than-significant impact on solid waste facilities.

g) Would the project comply with federal, State, and local statutes and regulations related to solid waste?

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Less Than Significant. State law requires a 50 percent diversion of solid waste from landfills. The West Contra Costa Integrated Waste Management Authority, of which Richmond is a part, met the 50 percent waste diversion goal in 2006, and continues to work to maintain this level of diversion. Assembly Bill 341, which went into effect in 2012 requires that multi-family housing with 5 or more units must recycle. On a local level, the city regulates solid wastes (Chapter 9.20: Solid Waste) and recycling (Chapter 9.21: Collection of Recyclables) within the City of Richmond in order to reduce recyclables in the solid waste stream. The project would divert construction debris, and provide on-site recycling and composting receptacles in compliance with statues and regulations relating to solid waste. The project would comply with all federal, State, and local statutes and regulations related to solid waste, resulting in a less-than-significant impact.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

<table>
<thead>
<tr>
<th>Potentially Significant Impact</th>
<th>Potentially Significant Unless Mitigation Incorporation</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Discussion

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

Potentially Significant Unless Mitigation Incorporation. The above analysis identifies potentially significant impacts to aesthetics, air quality, biological resources, cultural resources, geology, hazards, hydrology, land use, noise, and utilities, which would all be mitigated to less-than-significant levels through implementation of mitigation measures identified within each section.

The site has been extensively disturbed by past development, eliminating all native plant species and natural communities that may have been present at one time. It does not contain suitable habitat for any special-status plant or animal species. The concrete
channel contains no vegetation along the on-site segments—no marshland or riparian habitat. No wetlands are present on the site, including the concrete channel. However, the channel may be considered jurisdictional waters by regulatory agencies because it is hydrologically connected to downstream waters and may be the remnants of a natural channel that could have flowed through the vicinity. However, the site is located in an urban area and is completely covered by impervious surfaces. The project does not propose to alter or affect the channel or vegetation and therefore would not affect or interfere with any resident or migratory fish or wildlife species. Mitigation Measure BIO-1 requires the project proponent to obtain the appropriate authorizations for any modifications to the concrete channel on the site.

There are no recorded archaeological resources in the project site. The presence of nearby prehistoric archaeological sites, however, indicates the general archaeological sensitivity of the vicinity. It is possible that archaeological sites, which may be considered historical resources under CEQA, may be unearthed during the project’s ground-disturbing activities. Any potential adverse effect to CEQA-significant archeological or paleontological resources resulting from soil disturbance from the project would be reduced to a less-than-significant level by implementation of Mitigation Measures CULT-1 through CULT-2, described in Section V: Cultural Resources. Accordingly, the project would not result in a significant impact to archeological resources through the elimination of examples of major periods of California history or prehistory.

b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

Less Than Significant. The impacts of the project would be individually limited and not cumulatively considerable. The project would result in the development of 165 residential units on the border of Richmond and El Cerrito. The Richmond General Plan does not designate this area as an “Area of Change,” suggesting substantial amounts of redevelopment, but does anticipate it as an “Activity Center” which is intended to be pedestrian and transit-friendly community hub characterized by mixed-use and higher-density development. Similarly, the El Cerrito General Plan designates the Central Avenue area for high-density residential development, anticipating “a small increase in residential units over time as older single-family houses are replaced by new multifamily structures (duplex, three- and four-unit apartments, condos, and townhouses).”

Cumulatively, the project combined with other past, present, and reasonably foreseeable future projects would result in a physical change to the neighborhood by increasing the

\[112\] City of El Cerrito, 1999. General Plan, Community Development and Design Element.
number of residential units in the surrounding area and adding population density. However, these changes would not create adverse neighborhood impacts, as the land uses of the project and other proposed projects are compatible with the land use zoning of the neighborhood, and the intensity and density of approved and reasonably foreseeable development were not found to exceed the level of development compatible with the neighborhood and community. As a result, all environmental impacts that could occur as a result of the project would be reduced to a less-than-significant level.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less Than Significant. The project would be generally consistent with local land use and zoning requirements, as well as State and federal requirements, as described in the preceding sections. The following mitigation measures have been incorporated into the project to reduce adverse effects on human beings:

- Mitigation Measure AES-1 addresses potential impacts related to adverse effects due to light and glare.
- Mitigation Measure AQ-1 provides construction best management practices to reduce ozone precursors and PM.
- Mitigation Measure BIO-1 requires the project proponent to obtain the appropriate authorizations for any modifications to the concrete channel on the site and any jurisdictional wetlands.
- Mitigation Measure CULT-1 addresses potential adverse effect on accidentally discovered archeological resources or human remains.
- Mitigation Measure CULT-2 addresses potential impacts related to the accident discovery of paleontological resources.
- Mitigation Measure GEO-1 requires a design-level geotechnical investigation to reduce the potential of strong seismic shaking, liquefaction, settlement, expansive soils and drainage channel impacts.
- Mitigation Measure HAZ-1a calls for preparation of a Phase II site investigation and Mitigation Measure HAZ-1b calls for preparation of a Construction Risk Management Plan to reduce potential hazard impacts.
- Mitigation Measure HYD-1 requires elevation of all floors above the base flood level to reduce potential flood and sea level rise impacts.
- Mitigation Measure LAND-1 requires a density bonus and/or rezoning to assure consistency with the City of Richmond Zoning Ordinance
- Mitigation Measure NO-1 requires preparation of a noise analysis to ensure that noise levels meet indoor and outdoor standards.
- Mitigation Measure NO-1 requires preparation of a noise control plan to reduce noise levels during construction.
- Mitigation Measure NO-1 requires preparation of a vibration impact assessment to address vibration impacts during construction.
- Mitigation Measure UTL-1 requires preparation of a sewer capacity study.

These mitigation measures reduce the environmental effects which could cause substantial adverse effects on human beings, either directly or indirectly, to a less-than-significant level.
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Susan Smith, Word Processing

Additional Project Consultants

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James Martin, Principal

Cultural Resources
LSA Associates, Inc.
157 Park Place
Point Richmond, CA 94801
Tim Jones, Cultural Resources Planner
REFERENCES


City of Richmond, 2013. General Plan, Housing Element.


Federal Emergency Management Agency (FEMA), 2009. Flood Insurance Rate Map, Contra Costa County, California and Incorporated Areas, Panel 245 of 602, Map Number 0613C0245F. Effective Date June 16.


P&D Environmental, Inc., 2011. Figure 2, Site Aerial Photograph Showing Borehole Locations, 5620 Central Avenue, Richmond, California.


Sandis, 2013, Stormwater Exhibit, 5620 Central Ave., October 24.


APPENDIX A:

CalEEMod Report
1.0 Project Characteristics

1.1 Land Usage

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<tr>
<th>Land Uses</th>
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1.3 User Entered Comments & Non-Default Data
Project Characteristics -

Land Use -

Construction Phase - No demolition or Site Preparation (vegetation removal) required, because the lot is vacant. Default grading reduced from 8 to 2 weeks, because the lot has previously been graded.

Trips and VMT -

Demolition -

Grading - Assumed that no materials imported or exported for grading.

Total acres = 1.7

Architectural Coating - According to the District's Compliance Advisory on 15 February 2011, the maximum VOC content for flat coatings is 50 g/L. The exterior VOC content was left at the default 150 ug/L, which corresponds to the threshold limit for nonflat-high gloss coatings.

Vehicle Trips - Updated trip rate based on Fehr Peers (2013) Addendum to the Central Avenue Residential Transportation Impact Assessment:

WkDy Trip = 920/170 units/day = 5.41/day

Woodstoves - No woodstoves or fireplaces expected, all values changed to zero.

Area Coating - According to the District's Compliance Advisory on 15 February 2011, the maximum VOC content for flat coatings is 50 g/L. The exterior VOC content was left at the default 150 ug/L, which corresponds to the threshold limit for nonflat-high gloss coatings.

Water And Wastewater - EBMUD services the project site, and applies 100% aerobic process and 100% cogeneration.

Construction Off-road Equipment Mitigation -
### Emissions Summary

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## 2.1 Overall Construction

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### Percent Reduction

- ROG: 0.00%
- NOx: 0.00%
- CO: 0.00%
- SO2: 0.00%
- Fugitive PM10: 2.56%
- Exhaust PM10 Total: 0.89%
- Fugitive PM2.5: 4.55%
- Exhaust PM2.5 Total: 0.62%
- Bio-CO2: 0.00%
- NBio-CO2: 0.00%
- Total CO2: 0.00%
- CH4: 0.00%
- N2O: 0.00%
- CO2e: 0.00%
2.2 Overall Operational

**Unmitigated Operational**

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### 2.2 Overall Operational

#### Mitigated Operational

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| Percent Reduction | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.01 | -0.09 | 0.00 |

### 3.0 Construction Detail

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Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.7

Acres of Paving: 0

Residential Indoor: 334,125; Residential Outdoor: 111,375; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment
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**Trips and VMT**
### 3.1 Mitigation Measures Construction

**Water Exposed Area**

Reduce Vehicle Speed on Unpaved Roads

### 3.4 Grading - 2014

**Unmitigated Construction On-Site**

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<th>Worker Vehicle Class</th>
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**Date:** 11/22/2013 1:30 PM  
**Page:** 9 of 26
### 3.4 Grading - 2014

#### Unmitigated Construction Off-Site

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<th>Exhaust PM10</th>
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<th>Fugitive PM2.5</th>
<th>Exhaust PM2.5</th>
<th>PM2.5 Total</th>
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<th>NBio- CO2</th>
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<th>CH4</th>
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#### Mitigated Construction On-Site

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3.4 Grading - 2014

Mitigated Construction Off-Site

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3.5 Building Construction - 2014

Unmitigated Construction On-Site

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### 3.5 Building Construction - 2014

#### Unmitigated Construction Off-Site

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<th>CO (tons/yr)</th>
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<th>NBio-CO2 (MT/yr)</th>
<th>Total CO2 (MT/yr)</th>
<th>CH4 (MT/yr)</th>
<th>N2O (MT/yr)</th>
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#### Mitigated Construction On-Site

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<th>CO (tons/yr)</th>
<th>SO2 (tons/yr)</th>
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<th>Exhaust PM10 (tons/yr)</th>
<th>PM10 Total (tons/yr)</th>
<th>Fugitive PM2.5 (tons/yr)</th>
<th>Exhaust PM2.5 (tons/yr)</th>
<th>PM2.5 Total (tons/yr)</th>
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<th>NBio-CO2 (MT/yr)</th>
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<th>CH4 (MT/yr)</th>
<th>N2O (MT/yr)</th>
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### 3.5 Building Construction - 2014

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### 3.6 Paving - 2015

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### 3.6 Paving - 2015

**Unmitigated Construction Off-Site**

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**Mitigated Construction On-Site**

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### 3.6 Paving - 2015

#### Mitigated Construction Off-Site

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### 3.7 Architectural Coating - 2015

#### Unmitigated Construction On-Site

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### 3.7 Architectural Coating - 2015

#### Unmitigated Construction Off-Site

| Category   | ROG   | NOx    | CO     | SO2    | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2  | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|------------|-------|--------|--------|--------|---------------|--------------|------------|----------------|--------------|------------|-----------|-----------|-----------|-----------|-----|-----|------|
| Hauling    | 0.0000| 0.0000 | 0.0000 | 0.0000 | 0.0000        | 0.0000       | 0.0000     | 0.0000         | 0.0000       | 0.0000     | 0.0000    | 0.0000    | 0.0000    | 0.0000    |     |
| Vendor     | 0.0000| 0.0000 | 0.0000 | 0.0000 | 0.0000        | 0.0000       | 0.0000     | 0.0000         | 0.0000       | 0.0000     | 0.0000    | 0.0000    | 0.0000    | 0.0000    |     |
| Worker     | 9.1000e-004 | 1.3300e-003 | 0.0131 | 2.0000e-005 | 1.9700e-003 | 2.0000e-005 | 1.9800e-003 | 5.2000e-004 | 2.0000e-005 | 5.4000e-004 | 0.0000 | 1.8389 | 1.8389 | 1.1000e-004 | 0.0000 | 1.8411 |
| Total      | 9.1000e-004 | 1.3300e-003 | 0.0131 | 2.0000e-005 | 1.9700e-003 | 2.0000e-005 | 1.9800e-003 | 5.2000e-004 | 2.0000e-005 | 5.4000e-004 | 0.0000 | 1.8389 | 1.8389 | 1.1000e-004 | 0.0000 | 1.8411 |

#### Mitigated Construction On-Site

| Category    | ROG   | NOx    | CO     | SO2    | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2  | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------|-------|--------|--------|--------|---------------|--------------|------------|----------------|--------------|------------|-----------|-----------|-----------|-----------|-----|-----|------|
| Archit. Coating | 0.7743 |         |        |        | 0.0000       | 0.0000       | 0.0000     | 0.0000         | 0.0000       | 0.0000     | 0.0000    | 0.0000    | 0.0000    | 0.0000    |     |
| Off-Road    | 3.6600e-003 | 0.0231 | 0.0171 | 3.0000e-005 | 1.9900e-003 | 1.9900e-003 | 1.9900e-003 | 1.9900e-003 | 1.9900e-003 | 1.9900e-003 | 0.0000 | 2.2979 | 2.2979 | 3.0000e-004 | 0.0000 | 2.3042 |
| Total       | 0.7780 | 0.0231 | 0.0171 | 3.0000e-005 | 1.9900e-003 | 1.9900e-003 | 1.9900e-003 | 1.9900e-003 | 1.9900e-003 | 1.9900e-003 | 0.0000 | 2.2979 | 2.2979 | 3.0000e-004 | 0.0000 | 2.3042 |
### 3.7 Architectural Coating - 2015

#### Mitigated Construction Off-Site

<table>
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<tr>
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<th>ROG</th>
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<th>CO</th>
<th>SO2</th>
<th>Fugitive PM10</th>
<th>Exhaust PM10</th>
<th>PM10 Total</th>
<th>Fugitive PM2.5</th>
<th>Exhaust PM2.5</th>
<th>PM2.5 Total</th>
<th>Bio- CO2</th>
<th>NBio- CO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
<th>tons/yr</th>
<th>MT/yr</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
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<td>0.0000</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Worker</td>
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<td>1.3300e-003</td>
<td>0.0131</td>
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<td>1.9700e-003</td>
<td>2.0000e-005</td>
<td>1.9800e-003</td>
<td>5.2000e-004</td>
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<td>2.0000e-005</td>
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### 4.0 Operational Detail - Mobile

#### 4.1 Mitigation Measures Mobile

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<th>ROG</th>
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<th>SO2</th>
<th>Fugitive PM10</th>
<th>Exhaust PM10</th>
<th>PM10 Total</th>
<th>Fugitive PM2.5</th>
<th>Exhaust PM2.5</th>
<th>PM2.5 Total</th>
<th>Bio- CO2</th>
<th>NBio- CO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
<th>tons/yr</th>
<th>MT/yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitigated</td>
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<td>1.5700</td>
<td>7.4130</td>
<td>0.0112</td>
<td>0.7887</td>
<td>0.0210</td>
<td>0.8096</td>
<td>0.2112</td>
<td>0.0192</td>
<td>0.2304</td>
<td>0.0000</td>
<td>933.3546</td>
<td>933.3546</td>
<td>0.0486</td>
<td>0.0000</td>
<td>934.3752</td>
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<tr>
<td>Unmitigated</td>
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<td>1.5700</td>
<td>7.4130</td>
<td>0.0112</td>
<td>0.7887</td>
<td>0.0210</td>
<td>0.8096</td>
<td>0.2112</td>
<td>0.0192</td>
<td>0.2304</td>
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<td>933.3546</td>
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### 4.2 Trip Summary Information

<table>
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<th>Land Use</th>
<th>Average Daily Trip Rate</th>
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<th>Mitigated</th>
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<tr>
<td></td>
<td>Weekday</td>
<td>Saturday</td>
<td>Sunday</td>
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<tr>
<td>Apartments Mid Rise</td>
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</tr>
<tr>
<td></td>
<td>892.65</td>
<td>1,181.40</td>
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<tr>
<td>Total</td>
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<td>1,181.40</td>
<td>1001.55</td>
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### 4.3 Trip Type Information

<table>
<thead>
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<th>Miles</th>
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<th>Trip Purpose %</th>
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<td>H-S or C-C</td>
<td>H-O or C-NW</td>
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### 5.0 Energy Detail

#### 5.1 Mitigation Measures Energy
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<tr>
<th>Category</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>Fugitive PM10</th>
<th>Exhaust PM10</th>
<th>PM10 Total</th>
<th>Fugitive PM2.5</th>
<th>Exhaust PM2.5</th>
<th>PM2.5 Total</th>
<th>Bio- CO2</th>
<th>NBio- CO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity Mitigated</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
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<td>0.0000</td>
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<td>173.5382</td>
<td>174.2063</td>
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<tr>
<td>Electricity Unmitigated</td>
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<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
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<td>0.0000</td>
<td>0.0000</td>
<td>173.5382</td>
<td>173.5382</td>
<td>174.2063</td>
<td></td>
</tr>
<tr>
<td>NaturalGas Mitigated</td>
<td>7.8800e-03</td>
<td>0.0673</td>
<td>0.0286</td>
<td>4.3000e-04</td>
<td>5.4400e-003</td>
<td>5.4400e-003</td>
<td>5.4400e-003</td>
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<td>5.4400e-003</td>
<td>5.4400e-003</td>
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<td>77.9568</td>
<td>78.4313</td>
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<tr>
<td>NaturalGas Unmitigated</td>
<td>7.8800e-03</td>
<td>0.0673</td>
<td>0.0286</td>
<td>4.3000e-04</td>
<td>5.4400e-003</td>
<td>5.4400e-003</td>
<td>5.4400e-003</td>
<td>5.4400e-003</td>
<td>5.4400e-003</td>
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<td>5.4400e-003</td>
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<td>77.9568</td>
<td>78.4313</td>
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5.2 Energy by Land Use - NaturalGas
Unmitigated

<table>
<thead>
<tr>
<th>Land Use</th>
<th>NaturalGas Use</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>Fugitive PM10</th>
<th>Exhaust PM10</th>
<th>PM10 Total</th>
<th>Fugitive PM2.5</th>
<th>Exhaust PM2.5</th>
<th>PM2.5 Total</th>
<th>Bio- CO2</th>
<th>NBio- CO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apartments Mid Rise</td>
<td>1.46086e+06</td>
<td>7.8800e-03</td>
<td>0.0673</td>
<td>0.0286</td>
<td>4.3000e-04</td>
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<td>5.4400e-003</td>
<td>5.4400e-003</td>
<td>5.4400e-003</td>
<td>5.4400e-003</td>
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<td>77.9568</td>
<td>78.4313</td>
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<tr>
<td>Total</td>
<td>7.8800e-03</td>
<td>0.0673</td>
<td>0.0286</td>
<td>4.3000e-04</td>
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<td>77.9568</td>
<td>78.4313</td>
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### 5.2 Energy by Land Use - Natural Gas

**Mitigated**

<table>
<thead>
<tr>
<th>Land Use</th>
<th>NaturalGas Use (kBTU/yr)</th>
<th>ROG (tons/yr)</th>
<th>NOx (tons/yr)</th>
<th>CO (tons/yr)</th>
<th>SO2 (tons/yr)</th>
<th>Fugitive PM10 (tons/yr)</th>
<th>Exhaust PM10 (tons/yr)</th>
<th>Total PM10 (tons/yr)</th>
<th>Fugitive PM2.5 (tons/yr)</th>
<th>Exhaust PM2.5 (tons/yr)</th>
<th>Total PM2.5 (tons/yr)</th>
<th>Bio-CO2 (MT/yr)</th>
<th>NBio-CO2 (MT/yr)</th>
<th>Total CO2 (MT/yr)</th>
<th>CH4 (MT/yr)</th>
<th>N2O (MT/yr)</th>
<th>CO2e (MT/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apartments Mid Rise</td>
<td>1.46086e+006</td>
<td>7.8800e-003</td>
<td>0.0673</td>
<td>0.0286</td>
<td>4.3000e-004</td>
<td>5.4400e-003</td>
<td>5.4400e-003</td>
<td>5.4400e-003</td>
<td>5.4400e-003</td>
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<td>78.4313</td>
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<tr>
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<td>0.0673</td>
<td>0.0286</td>
<td>4.3000e-004</td>
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<td>78.4313</td>
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### 5.3 Energy by Land Use - Electricity

**Unmitigated**

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<tr>
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<th>Electricity Use (kWh/yr)</th>
<th>Total CO2 (MT/yr)</th>
<th>CH4 (MT/yr)</th>
<th>N2O (MT/yr)</th>
<th>CO2e (MT/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apartments Mid Rise</td>
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<td>7.8500e-003</td>
<td>1.6200e-003</td>
<td>174.2063</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>173.5382</td>
<td>7.8500e-003</td>
<td>1.6200e-003</td>
<td>174.2063</td>
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</table>
5.3 Energy by Land Use - Electricity

**Mitigated**

<table>
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<tr>
<th>Land Use</th>
<th>kWh/yr</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
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</thead>
<tbody>
<tr>
<td>Apartments Mid Rise</td>
<td>59633</td>
<td>173.5382</td>
<td>7.8500e-003</td>
<td>1.6200e-003</td>
<td>174.2063</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>173.5382</strong></td>
<td><strong>7.8500e-003</strong></td>
<td><strong>1.6200e-003</strong></td>
<td><strong>174.2063</strong></td>
</tr>
</tbody>
</table>

6.0 Area Detail

6.1 Mitigation Measures Area

<table>
<thead>
<tr>
<th>Category</th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>Fugitive PM10</th>
<th>Exhaust PM10</th>
<th>PM10 Total</th>
<th>Fugitive PM2.5</th>
<th>Exhaust PM2.5</th>
<th>PM2.5 Total</th>
<th>Bio-CO2</th>
<th>NBio-CO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
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<td>1.2551</td>
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<td>6.6600e-003</td>
<td>6.6600e-003</td>
<td>6.6600e-003</td>
<td>6.6600e-003</td>
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<tr>
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<td>6.6600e-003</td>
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<td>6.6600e-003</td>
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### 6.2 Area by SubCategory

**Unmitigated**

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<th>CO</th>
<th>SO2</th>
<th>Fugitive PM10</th>
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<th>Fugitive PM2.5</th>
<th>Exhaust PM2.5</th>
<th>PM2.5 Total</th>
<th>Bio- CO2</th>
<th>NBio- CO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
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### 6.2 Area by SubCategory

**Mitigated**

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<th>CO</th>
<th>SO2</th>
<th>Fugitive PM10</th>
<th>Exhaust PM10</th>
<th>PM10 Total</th>
<th>Fugitive PM2.5</th>
<th>Exhaust PM2.5</th>
<th>PM2.5 Total</th>
<th>Bio- CO2</th>
<th>NBio- CO2</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
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<td>Consumer Products</td>
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<tr>
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<tr>
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<td>6.6600e-003</td>
<td>6.6600e-003</td>
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</table>

### 7.0 Water Detail

#### 7.1 Mitigation Measures Water

<table>
<thead>
<tr>
<th>Category</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitigated</td>
<td>26.0505</td>
<td>0.0142</td>
<td>8.4900e-003</td>
<td>28.9812</td>
</tr>
<tr>
<td>Unmitigated</td>
<td>26.0505</td>
<td>0.0141</td>
<td>8.4800e-003</td>
<td>28.9752</td>
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</table>
7.2 Water by Land Use

**Unmitigated**

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Indoor/Outdoor Use</th>
<th>Total CO₂</th>
<th>CH₄</th>
<th>N₂O</th>
<th>CO₂e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apartments Mid Rise</td>
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<td>26.0505</td>
<td>0.0141</td>
<td>8.4800e-003</td>
<td>28.9752</td>
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<tr>
<td>Total</td>
<td></td>
<td>26.0505</td>
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<td>8.4800e-003</td>
<td>28.9752</td>
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**Mitigated**

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Indoor/Outdoor Use</th>
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<th>CH₄</th>
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<td>0.0142</td>
<td>8.4900e-003</td>
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</table>

8.0 Waste Detail

8.1 Mitigation Measures Waste
### Category/Year

<table>
<thead>
<tr>
<th></th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mitigated</strong></td>
<td>15.4070</td>
<td>0.9105</td>
<td>0.0000</td>
<td>34.5281</td>
</tr>
<tr>
<td><strong>Unmitigated</strong></td>
<td>15.4070</td>
<td>0.9105</td>
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<td>34.5281</td>
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### 8.2 Waste by Land Use

#### Unmitigated

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Waste Disposed</th>
<th>Total CO2</th>
<th>CH4</th>
<th>N2O</th>
<th>CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apartments Mid Rise</td>
<td>75.9</td>
<td>15.4070</td>
<td>0.9105</td>
<td>0.0000</td>
<td>34.5281</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>15.4070</td>
<td>0.9105</td>
<td>0.0000</td>
<td>34.5281</td>
</tr>
</tbody>
</table>
8.2 Waste by Land Use

Mitigated

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Waste Disposed</th>
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<td>75.9</td>
<td>15.4070</td>
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<td>15.4070</td>
<td>0.9105</td>
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<td>34.5281</td>
</tr>
</tbody>
</table>

9.0 Operational Offroad

10.0 Vegetation