

RICHMOND RAIL CONNECTOR

Located between Parr Boulevard and Richmond Parkway, City of Richmond

INITIAL STUDY with PROPOSED MITIGATED NEGATIVE DECLARATION



California Department of Transportation

September 2012



General Information About This Document

What's in this document?

The California Department of Transportation (Caltrans) has prepared this Initial Study, which examines the potential environmental impacts of alternatives being considered for the proposed project located in Contra Costa County, California. The document describes the proposed project, the existing environment that could be affected by the project, and potential impacts from the project, and the proposed avoidance, minimization, and/or mitigation measures.

What should you do?

- Please read this Initial Study. Additional copies of this document as well as the technical studies are available for review at the Caltrans District 4, 111 Grand Avenue, Oakland, CA 94612; the City of Richmond Central Library located at 325 Civic Center Plaza, Richmond, CA 94804; and the San Pablo Library located at 2300 El Portal Drive, Suite D, San Pablo, CA 94806.
- Attend the public information meeting in the Bermuda Room in the Richmond Convention Center located at 403 Civic Center Plaza, Richmond, California 94804. This meeting will be held on October 2, 2012 from 6 p.m. to 8 p.m.
- We welcome your comments. If you have any concerns regarding the proposed project, please attend the public information meeting, or send your written comments to Caltrans by the deadline. Submit comments via U.S. mail to Caltrans at the following address:

Mr. Howell Chan
Office of Environmental Analysis
California Department of Transportation
P.O. Box 23660
Oakland, CA 94623-0660

Submit comments via email to: howell_chan@dot.ca.gov

- Submit comments by the deadline: October 16, 2012.

What happens next?

After comments are received from the public and reviewing agencies, Caltrans may 1) give environmental approval to the proposed project, 2) do additional environmental studies, or 3) abandon the project. If the project is given environmental approval and funding is appropriated, Caltrans could design and construct all or part of the project.

For individuals with sensory disabilities, this document is available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please contact: Caltrans, Attn: Howell Chan, Office of Environmental Analysis, P. O. Box 23660, Oakland, CA 94623-0660, 510-286-5623.

Located between Parr Boulevard and Richmond Parkway
City of Richmond, California

RICHMOND RAIL CONNECTOR
INITIAL STUDY with Proposed Mitigated Negative Declaration

Submitted Pursuant to: (State) Division 13, California Public Resources Code

THE STATE OF CALIFORNIA
Department of Transportation

9/10/12
Date of Approval


Melanie Brent
Melanie Brent
Deputy District Director
Division of Environmental Planning and Engineering
California Department of Transportation

Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to install a new connector track between the BNSF Railway track and the UPRR tracks in the northern portion of the City of Richmond to facilitate movement of trains between the two tracks and to avoid train movements through downtown Richmond. The installation of the connection track, upgrade of existing siding, and related improvements will begin on the BNSF rail line approximately 364 feet south of the Giant Road/John Avenue crossing, at about Milepost (MP) 1185.9. The new construction and other proposed improvements will extend southwest, a distance of approximately 1.25 miles, to UPRR MP 14.2, just north of the intersection of the UPRR line and Parr Boulevard, within the City of Richmond. The project is located within the City of Richmond and an unincorporated portion of Contra Costa County.

Determination

This proposed Mitigated Negative Declaration (MND) is included to give notice to interested agencies and the public that it is Caltrans' intent to adopt a MND for this project. This does not mean that Caltrans' decision regarding the project is final. This MND is subject to change based on comments received by interested agencies and the public.

Caltrans has prepared an Initial Study for this project and, pending public review, expects to determine from this study that the proposed project would not have a significant effect on the environment for the following reasons.

The proposed project would have no effect on: Agricultural and Forestry Resources; Land Use and Planning; Mineral Resources; Population & Housing; Public Services; and Recreation.

In addition, the proposed project would have no significant effect on: Air Quality, Aesthetics, Geology and Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Noise, Transportation and Traffic, and Utilities and Service Systems.

The proposed project would have no significantly adverse effect on Biological and Cultural Resources because the following mitigation measures would reduce potential effects to insignificance:

- IV-1** *Mitigation for impacts to jurisdictional waters of the United States and State shall be offset by either or both of the following measures: (a) acquisition of wetland mitigation credits from an authorized wetland mitigation bank in the general area of the project at a 2:1 ratio, or 2 acres for each acre lost; and (b) revegetating the area adjacent to the eastside of the new track, not directly adjacent to the track but within the new track alignment, with a comparable set of native wetland plants as presently occurs in the proposed alignment. This requirement shall be memorialized in the 1602 Streambed Alteration Agreement and 404 Permit obtained for this project prior to disturbing the wetland habitat that occurs within the project alignment.*

- V-1** *If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.*

Melanie Brent
Deputy District Director
Division of Environmental Planning and Engineering
California Department of Transportation

Date

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Abbreviations and Acronyms

APE	Area of Potential Effect
ARB	Air Resources Board
BAAB	Bay Area Air Basin
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
BMPs	Best Management Practices
BNSF	BNSF Railway Company
Caltrans	California Department of Transportation
CAP	Clean Air Plan
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
dB	decibel
db(A)	A-weighted decibel
DNL	day-night level
DTSC	Department of Toxic Substances Control
EPA	U.S. Environmental Protection Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
GHG	Greenhouse Gas
MP	milepost
MT	metric ton
NAAQS	national ambient air quality standards
NOA	Naturally occurring asbestos
OPR	Office of Planning and Research
POAQC	project of air quality concern
RWQCB	Regional Water Quality Control Board
SAAQS	state ambient air quality standards
SFBAAB	San Francisco Bay Area Air Basin
SIP	State Implementation Plan
SWPPP	Storm Water Pollution Prevention Program
SWRCB	State Water Resources Control Board
USDA	U.S. Department of Agriculture
WQMP	Water Quality Management Plan

Section 1 Project Information

INTRODUCTION

1. **Project Title:** RICHMOND RAIL CONNECTOR
2. **Lead Agency Name:** California Department of Transportation
Address: Caltrans District 4
111 Grand Avenue
Oakland, CA 94612
3. **Contact Person:** Howell Chan, Senior Environmental Planner
Phone Number: 510-286-5623
E-mail: howell_chan@dot.ca.gov
4. **Project Location:** The installation of the connection track, upgrade of existing siding, and related improvements will begin on the BNSF rail line approximately 364 feet south of the Giant Road crossing, at about Milepost (MP) 1185.9. The new construction and other proposed improvements will extend southwest, a distance of approximately 1.25 miles, to UPRR MP 14.2, just north of the intersection of the UPRR line and Parr Boulevard, within the City of Richmond. The project is located within the City of Richmond and an unincorporated portion of Contra Costa County. Please refer to Figures 1, 2 and 3.
5. **Project Sponsor's Name and Address:** BNSF Railway Company
2500 Lou Menk Drive
Fort Worth, TX 76131
6. **General Plan Designation:** Industrial, City of Richmond; however, this is a rail infrastructure project that is independent of local General Plan designations.
7. **Zoning:** Industrial, City of Richmond; however, this is a rail infrastructure project that is independent of local zoning designations.
8. **Surrounding land uses and setting:** Surrounding land uses include industrial uses to the south and west; Richmond Parkway and industrial uses to the north; and Giant Road and residential land uses to the east in the City of San Pablo.
9. **Project Description:** The proposed project would construct an at-grade connector track and related signal improvements between the BNSF Stockton Subdivision and UPRR's Martinez Subdivision.

Caltrans and BNSF are proposing to install the rail connector track as part of a program to improve freight train movements into the Port of Oakland. In turn this would reduce congestion, air emissions and noise in downtown Richmond.

The proposed project features include the following:

- a. Installing a new connection track with 15-foot centers adjacent to both BNSF and UPRR existing tracks
- b. Extending or upgrading existing sidings
- c. Upgrading track structure and special track work
- d. Upgrading signal systems
- e. Improving an at-grade crossing at John Avenue
- f. Constructing a bridge over Rheem Creek

- g. Installing a culvert along the south side of the UPRR and proposed connector track
- h. Realigning the UPRR tracks within the existing right-of-way to accommodate the connector track.

10. **Purpose of Project:** The primary purpose of this project is to provide more efficient rail operations along the BNSF Stockton Subdivision and UPRR Martinez Subdivision north of downtown Richmond.

Currently, BNSF trains have to travel through downtown Richmond to reach the Port of Oakland because there is no connector to the UPRR tracks that provides a more direct route to the Port. A connector rail allowing BNSF trains to access UPRR's Martinez subdivision without going through downtown Richmond would improve the efficiency and competitiveness of goods movement along this corridor. By substantially reducing the number of slow-moving intermodal trains in the center of the city, a connector would also relieve traffic congestion at nine at-grade crossings in downtown Richmond.

The project would benefit the residents of Richmond by reducing air emissions and noise from train air horns and warning signals at the at-grade crossings. In addition, it would reduce the need for BNSF trains to use tracks north of Richmond on the Martinez Subdivision, freeing up capacity and reducing conflicts for both UPRR and passenger trains.

11. **Need for Project:** For the past several years, BNSF voluntarily ran its intermodal freight trains serving the Port of Oakland on the UPRR tracks between Port Chicago and Stege to avoid BNSF's own circuitous route through the center of Richmond. Stege is the point along the railroad tracks where the BNSF and UP tracks converge in east Richmond. Refer to Figure 2. In May 2008, a federal Surface Transportation Board (STB) ruling stated that BNSF does not have the authority to operate its intermodal trains on this segment of the UPRR route. The STB ruling required BNSF intermodal trains to travel through the center of Richmond accessing UPRR's Martinez Subdivision south of Richmond at Stege.

The BNSF Stockton Subdivision swings west through downtown Richmond to the Company's rail yard on the west side of the City. Refer to Figure 4. Then, the BNSF tracks swing back east and traverse the length of the City from west to east. At a location called Stege, the BNSF tracks intercept the UPRR Martinez Subdivision, which continues south into the Port of Oakland.

Trains using BNSF tracks through Richmond must travel at low train speeds (20 miles per hour (mph) or less) that often result in blocking traffic for extended periods of time at fourteen closely-spaced grade crossings within Richmond. Refer to Figures 5a and 5b for the location of at-grade crossings on both the BNSF and UPRR tracks. The longer route and slow speeds increase the amount of time it takes BNSF trains to reach the Port of Oakland. The slow-moving BNSF trains accessing the Martinez Subdivision at Stege also impact Capital Corridor and San Joaquin passenger and UPRR freight trains, reducing their on-time performance and reliability.

12. **Project Details:** The entire length of railway to be improved as part of the BNSF and UPRR Richmond Rail Connector Project is located within Contra Costa County. The project improvements are best illustrated on the aerial photo of the connector track alignment, Figure 2, and the Conceptual Track Alignment Schematic, which is provided in Figures 6a and 6b.

The location of the proposed project was selected based on the proximity of the two tracks and minimal development along the segment proposed for the rail connector. This will help achieve the purpose of the project, while avoiding or minimizing environmental impacts, such as effects on existing development.

The proposed BNSF and UPRR connection track closely follows the existing BNSF track at the north end of the alignment and closely follows the existing UPRR track at the south end of the alignment. The proposed alignment curves southwest across several industrial parcels for approximately 0.75 miles from just south of John Avenue and converges with the existing UPRR line at

about UPRR MP 14.2. The proposed connector track is being designed for a maximum allowable speed of 50 miles per hour (mph) for passenger trains and 45 mph for freight trains.

All connections to sidings and spur tracks from the new track will be made using minimum No. 24 turnouts. The type #24 turnout is the most durable/heavy duty switch used on BNSF that allows a train to move from one track to another. Speed through the diverging side is 50 MPH and is 79 MPH on the straight side. The proposed connector track will use BNSF standard mono-block concrete ties with a resilient fastening system. Running rail will be 136 Continuously Welded Rail (CWR, 136 lbs per foot of rail) on tangents and curves flatter than one degree. Sharper curves will be laid with 141#CWR rail. Cross ties through grade crossings, as well as transition ties, will be 10-foot-long wood ties.

The project will include the upgrade of approximately 0.2 mile of the BNSF siding and the upgrade of approximately 0.3 mile of the UPRR siding. Signal improvements, for train flow on the tracks, and the upgrade of turnouts will be installed along the whole approximate 1.25-mile alignment of the project. A feature required to install the new track within the UPRR alignment is a "Turnout Pad" that will be constructed to allow equipment to lift and move the UPRR tracks to meet the new configuration. This pad will remain after construction to facilitate future maintenance of the adjacent tracks.

Other Project Aspects

Land Acquisition

The existing BNSF and UPRR rights-of-way vary between approximately 100 feet and 125 feet along the Richmond connector track segment. A segment of the proposed connector track alignment is located outside of the existing BNSF and UPRR rights-of-way, as shown on the property acquisition map provided in Figure 7a and 7b. Approximately 8.30 acres of industrial land will be acquired for the project. This property contains one small storage structure, but no residences or other industrial facilities.

Utility Crossings

There are utility lines that may be affected by construction of the project. Any utility lines located within the alignment will either be left in place and avoided by construction, or relocated within the existing BNSF or UPRR right-of-way. In a few instances, a utility line may no longer be in use and it will either be removed within the BNSF right-of-way or it will be closed and left in place. All utility relocations or closures will be implemented after close coordination with the owner of the utility line.

Staging Areas

The proposed project will have a number of staging areas to accommodate storage of equipment and material, and to provide parking for employees. The staging areas will occur along the BNSF and UPRR track rights-of-way at least 25 feet from the closest track. Any needed staging areas outside the railroad's right-of-way will be the responsibility of the contractor and cannot be identified at this time. The Turnout Pad (see discussion above) will serve as one staging area and another staging area will be located at the terminus of Collins Road, which parallels John Avenue in the project area. Where permits (entitlements or regulatory permits) are required for staging areas, such permits will be obtained by the contractor and any subsequent environmental documentation, if required, will be prepared and processed on a case-by-case basis by the contractor.

Construction Activities

The proposed project will be built in five steps and should be completed within 12 to 18 months. The first step in the construction process will be to install the fill to elevate the new track surface an average of about 8 feet above existing ground level. Approximately 13,300 cubic yards of fill and aggregate material will be imported to create the fill for the proposed track. Assuming 15 cubic yards per truck delivery, a total of about 900 truck trips will be required to import the required fill material. This equates to an estimated 100 truck trips per day for material import over a 2-week (10-day) period of time. Installation of the fill is expected to require approximately 2 to 4 months from the date construction begins.

During the same period that the fill is being installed, a separate work crew will be installing the proposed bridge over Rheem Creek, drainage pipes, and other support facilities for the track (shown on the Track Chart in Figures 6a and 6b. In addition, pipelines (such as water, natural gas, etc.) located under the railroad rights-of-way will have to be protected, either by encasement, relocation or other similar measures. It is anticipated that these facilities will be completed within 5 to 9 months. As part of this phase of the project, existing telephone poles within the BNSF and UPRR alignments will be removed by a contractor and the materials removed will be recycled for other uses.

The Turnout Pad will require about 4,000 cubic yards of fill material or 270 truck trips. This material will be delivered over a 5-day period, which equates to 54 truck trips per day. Construction of this feature is expected to require about 30 days from start to finish. The "Turnout Pad" will not be constructed concurrent with the new high fill to limit the maximum number of truck trips to 100 per day. It is anticipated that at the end of the project, the "Turnout Pad" will be retained to support future maintenance at this location.

The final step of construction has been allocated 3 to 5 months for completion. This stage involves laying the new track and installing the new track signal system to ensure safety along the new track. Track laying is carried out by BNSF personnel with material delivered by rail. On top of the fill, concrete rail cross ties and ballast rock will be installed. Then, the new rails will be installed on top of this new base. The new 136 lbs rail (the rail weighs 136 lbs per meter of rail) can be installed at a rate of approximately one mile per day once the track base has been completed. At the same time new signals required for operations and safety will be installed and hooked up to the BNSF and UPRR electrical system that parallels the existing track. Maximum depth of excavation associated with installation of the new signals is approximately 8 feet. Once the new track is installed, the road crossings will be installed. When the track is completed and tested and the signals have been installed and tested, the new track will be available to support operations.

Contracts for construction of new track are typically awarded on an incremental basis. Each construction phase or function may be awarded by separate contracts.

13. **Other agencies whose approval is required:** (e.g., permits, financing approval, or participation agreement.) Refer to the project description on the preceding pages.

At this stage of the review it is anticipated that the project will be required to obtain several permits including, but not necessarily limited to, those shown on Table 1-1.

**Table 1-1
PERMITS REQUIRED**

Agency	Permit / Approval
U.S. Army Corps of Engineers	<ul style="list-style-type: none"> • Section 404 Permit
Regional Water Quality Control Board	<ul style="list-style-type: none"> • Section 401 Water Quality Certification • SWPPP Enforcement
California Department of Fish and Game	<ul style="list-style-type: none"> • 1601 Streambed Alteration Agreement
State Water Resources Control Board	<ul style="list-style-type: none"> • Construction NPDES Permit
Contra Costa County	<ul style="list-style-type: none"> • Drainage Modification Permit • Flood Control Encroachment Permit
City of Richmond	<ul style="list-style-type: none"> • Roadway encroachment permit and business licenses

Various encroachment or construction permits from the County, UPRR, BNSF, the City of Richmond, and business licenses in the local jurisdictions may also be required.

The project stakeholders (Caltrans, BNSF and UPRR) examined alternative locations for installation of the connector track between the BNSF and UPRR tracks. The primary criterion for selection of the connector track was a location that would allow BNSF intermodal trains to access the UPRR tracks at a location that would allow these trains to avoid traversing downtown Richmond and to not utilize capacity on the UPRR Martinez Subdivision east of the City of Richmond. The proposed location represents a site within the urbanized portion of the Bay Area where the two tracks are close together. No occupied structures occur within the proposed connector track alignment at this Richmond location. Since these three selection criteria for the connector site could not be met at any other location, a decision was made to eliminate alternative locations and limit the analysis to the proposed project. As previously discussed, there are no other locations north of Stege where a connector track can be installed that meets the site selection criteria. One additional site was considered north of the proposed site, west of the intersection of Giant Road and Banks Drive. Refer to the expanded aerial photo in Figure 4. However, after examination, a portion of this site is included in the Point Pinole Regional Shoreline Park and it does not have sufficient space to install a connector track. Therefore, this site was also rejected from further consideration.

Section 2 Environmental Factors Potentially Affected


The environmental factors checked below would be potentially affected by this project, involving at least one impact that requires mitigation as indicated by the checklist on the following pages. No impacts have been identified that meet the threshold of a "Potentially Significant Impact."

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

Section 3 **Determination**

On the basis of this initial evaluation, the following finding is made:

	The proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
X	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.
	The proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
	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.
	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.



 Melanie Brent
 Deputy District Director
 Division of Environmental Planning and Engineering
 California Department of Transportation

Date 9/10/12

Section 4 Impacts Checklist

The impacts checklist in this section identifies physical, biological, social, and economic factors that might be affected by the proposed project. Direct and indirect impacts are addressed in checklist items I through XVII. Mandatory Findings of Significance are discussed in item XVIII. The California Environmental Quality Act (CEQA) impact levels include “potentially significant impact,” “less than significant with mitigation incorporated,” “less than significant impact,” and “no impact.”

A brief explanation of each CEQA checklist determination follows each checklist item.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista?				X
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) Substantially degrade the existing visual character or quality of the site and its surroundings?				X
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				X

SUBSTANTIATION: Contra Costa County General Plan January 2005; Volumes One and Two, Richmond General Plan August 1994; and six field visits to the site beginning in 2009, with the most recent visit on March 20, 2012.

a. Have substantial adverse effect on a scenic vista?

No Impact – The project area is located within an industrial area surrounded by urban development. The project site and area does not contain any important scenic vistas that would experience a substantial adverse effect from implementing the proposed project.

b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact – A review of the City of Richmond and Contra Costa County General Plans determined that no local, regional or state scenic highways are located within the project area. Therefore, the proposed project has no potential to substantially damage such resources within a scenic highway corridor.

c. Substantially degrade the existing visual character or quality of the site or its surroundings?

No Impact – The visual setting for the project area includes urban uses and existing rail and major roadway transportation corridors. The BNSF and UPRR tracks bound the project area on the west and east. Industrial uses create the visual setting on the south side of the project site. Richmond

Parkway bounds the property on the north and serves as a substantial visual boundary due to its elevated road section. Giant Road and residential development establish the eastern boundary of the project alignment. The project area does not contain any scenic vistas or important scenic resources due to the surrounding urban land uses. The proposed project will extend a new connector track from the BNSF track adjacent to Giant Road to the UPRR tracks located on the western boundary of the project alignment. The new connector track will be elevated slightly above ground level, comparable to both of the existing track corridors.

The construction activities will be temporary and localized. The long-term visual change will be the addition of the connector track at the same elevation as the existing surrounding tracks. For views across the tracks (perpendicular to the track), the existing visual settings/vistas are forecast to remain the same as they are now, i.e., no substantial change in the existing visual setting. The only change in view will be along the track new alignment, but once installed the visual setting will remain comparable to and undistinguishable to the existing visual character of the site, i.e., an industrial area and a railroad track corridor. Based on the above analysis, it is concluded this project will have no substantial adverse impact on the visual character or quality of the project corridor

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

No Impact – The proposed project will not result in the installation of any linear light standards or the creation of any new sources of light in proximity to local residences. Any new signals adjacent to the new track will not be a source of substantial amounts of new light. Existing rail crossing lighting, such as that associated with crossing stop signs or signals, will receive more modern signals, but these will not alter the existing light environment based on the type of signal design standards used for safety purposes. No substantial new sources of light or glare are forecast to occur from implementing the proposed project.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
<p>II. AGRICULTURE AND FORESTRY 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 significant 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:</p>				
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 non-agricultural use?				X
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?				X
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))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
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?				X

SUBSTANTIATION: Contra Costa County General Plan January 2005; Volumes One and Two, Richmond General Plan August 1994; USDA, Natural Resources Conservation Service Web Soil Survey, Contra Costa County Soil Survey, 1971 and 1980.

a-e. *No Impact* – The proposed project is located in an urban area with no agricultural or forest/timberland resources or agricultural activities.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
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?			X	
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			X	
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)?			X	
d) Expose sensitive receptors to substantial pollutant concentrations?			X	
e) Create objectionable odors affecting a substantial number of people?			X	

SUBSTANTIATION: The analysis in this section is based on the Air Quality and Greenhouse Gas (GHG) Impact Analysis (June 2012).

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

Less Than Significant Impact – The BAAB’s current attainment status with respect to federal standards is summarized in Table III-1. In general, the Bay Area experiences low concentrations of most pollutants when compared to federal standards, except for ozone and particulate matter (PM-10 and PM-2.5), for which standards are exceeded periodically. The Bay Area’s attainment status for ozone has changed several times over the past decade, first from “nonattainment” to “attainment” in 1995, then back to “unclassified nonattainment” in 1998 for the 1-hour federal ozone standard. In June 2004, the Bay Area was designated as “marginal nonattainment” for the 8-hour ozone standard. In 2008, the U.S. Environmental Protection Agency (EPA) lowered the 8-hour ozone standard from 0.08 part per million (ppm) to 0.075 ppm. Whereas the air basin only marginally exceeded the 0.08 ppm standard, the 0.075 ppm standard is exceeded more frequently.

On June 2, 2010, the U.S. EPA established a new 1-hour SO₂ standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The existing 0.030 ppm annual and 0.14 ppm 24-hour SO₂ National Ambient Air Quality Standards (NAAQS) however must continue to be used until one year following U.S. EPA initial designations of the new 1-hour SO₂ NAAQS. EPA expects to designate areas by June 2012.

With a marginal non-attainment designation of the federal 8-hour ozone standard, and with attainment of the federal PM-10 standard, no federal attainment planning as part of a State Implementation Plan (SIP) was required over the last several years. EPA lowered the 24-hour PM-2.5 standard from 65 µg/m³ to 35 µg/m³ in 2006. EPA designated the Bay Area as nonattainment of the PM-2.5 standard on October 8, 2009. The effective date of the designation is December 14, 2009 and the Air

District has three years to develop a plan, called a State Implementation Plan (SIP) that demonstrates the Bay Area will achieve the revised standard by December 14, 2014. The SIP for the new PM-2.5 standard must be submitted to the US EPA by December 14, 2012.

In September 2005, the Bay Area Air Quality Management District (BAAQMD), in cooperation with the Metropolitan Transportation Commission and Association of Bay Area Governments, prepared the *Bay Area 2005 Ozone Strategy*. The Ozone Strategy is a roadmap showing how the San Francisco Bay Area will achieve compliance with the state 1-hour ozone standard as expeditiously as practicable, and how the region will reduce transport of ozone and ozone precursors to neighboring air basins. An update of the 2005 Ozone Strategy was adopted in 2010. The 2010 Clean Air Plan (CAP) has the following objectives:

- Comply with California Clean Air Act requirements
- Develop an integrated plan that addresses multiple pollutants
- Adopt control strategies to minimize public health risk
- Achieve state standards as soon as practical
- Update previously adopted control strategies
- Reduce transport to downwind air basins and
- Report on progress and update baseline and trends.

The 2010 CAP, and associated CEQA documents, was adopted in June, 2010. The 2010 CAP is not a SIP document and does not respond to federal requirements for PM-2.5 or ozone planning. However, the CAP control strategies to reduce PM emissions will be mirrored in any mandated federal planning requirements.

The proposed project consists of the installation of a connector track between the existing BNSF track and the UPRR tracks in the northern portion of the City of Richmond. The purpose of this connector track is to allow BNSF intermodal trains serving the Port of Oakland to transfer from the BNSF track, which wind their way through the City of Richmond (refer to Figures 6a and 6b), to the UPRR tracks, which provide a more direct route to the Port. The effect of this rail system infrastructure improvement will be to enhance flow of freight (goods movement) through the community of Richmond and points east. It will reduce emissions associated with the longer route through the City on the BNSF tracks and also reduce vehicle emissions and adverse effects on the flow of traffic at approximately fourteen at-grade crossings in the City of Richmond. Refer to Figures 5a and 5b which show the at-grade crossings on both the BNSF and UPRR tracks between Parr Boulevard and Stege. This project is not forecast to have any effect on future train operations (number of trains) because the actual number of trains is determined by the volume of freight or passengers at any given time and because track capacity is not presently constrained and no overall increase in track capacity will be created by this proposed infrastructure improvement. The effect of the proposed project will be to enhance the overall flow of train traffic through the project area.

The Richmond Rail Connector project was included in the regional emissions analysis conducted by the Metropolitan Transportation Commission for the Transportation 2035 Plan found to conform to applicable federal air quality standards and implementation plans (Resolution 3976, 2010). The project's design concept and scope have not changed significantly from what was analyzed in the Transportation 2035 Plan. This analysis found that the plan and, therefore, the individual projects contained in the state implementation plans (SIPs) are needed to achieve the National Ambient Air Quality Standards (NAAQS). FHWA determined the RTP to conform to the SIP in 2011.

The Richmond Rail Connector project is also included in the federal 2011 Transportation Improvement Program (TIP), (RTIP ID 22089). The project has no designated funding in the 4-year TIP period (2010-2014), but was considered as part of the conformity determination of the 2011 TIP.

A proposed 2011 TIP Amendment to reprogram existing funds to include the proposed project has been found by MTC staff to not trigger a new air quality conformity determination given that it was already in the conforming 2011 TIP.

During construction, avoidance and minimization measures, known as Best Management Practices (BMPs), will be followed to control PM-10 emissions. Particulate impacts will be less than significant under current CEQA guidelines. Therefore, this proposed project has no potential to conflict with or obstruct the 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 in non-attainment under an applicable federal state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Less Than Significant Impact – The proposed project is located in the Bay Area Air Basin (BAAB). The BAAB encompasses nine counties, including all of Contra Costa County. The Bay Area topography is characterized by complex terrain with coastal mountains, interior valleys and various bays. The major gaps in the Coast Range occur in the Bay Area. The Golden Gate gap facilitates the inflow of marine air. The Carquinez Strait is the opening that allows airflow to leave the Bay Area into the Central Valley. The proposed project is located along the primary outflow from the Bay Area into the Central Valley.

Existing Air Quality

The BAAB's current attainment status with respect to federal standards is summarized in Table III-1.

**Table III-1
STATE AND FEDERAL AMBIENT AIR QUALITY STANDARDS AND ATTAINMENT STATUS**

Pollutant	Averaging Time	(State) SAAQS ^a		(Federal) NAAQS ^b	
		Standard	Attainment Status	Standard	Attainment Status
Ozone (O3)	1-hour	0.09 ppm	N	NA	See Note (c)
	8-hour	0.07 ppm	N	0.075 ppm	N(d)
Carbon Monoxide (CO)	1 hour	20 ppm	A	35 ppm	A
	8 hour	9.0 ppm	A	9 ppm	A
Nitrogen Dioxide (NO ₂)	1 hour	0.18 ppm	A	0.100 ppm	U
	Annual	0.030 ppm	A	0.053 ppm	A
Sulfur Dioxide (SO ₂)	1 hour	0.25 ppm	A	NA	NA
	24 hour	0.04 ppm	A	0.14 ppm	A
	Annual	NA	NA	0.03 ppm	A
Particulate Matter (PM10)	24 hour	50 µg/m ³	N	150 µg/m ³	U
	Annual ^e	20 µg/m ³	N	NA	NA
Fine Particulate Matter (PM2.5)	24 hour	NA	NA	35 µg/m ³	N
	Annual	12 µg/m ³	N	15 µg/m ³	A
Sulfates	24 hour	25 µg/m ³	A	NA	NA
Lead	30 day	1.5 µg/m ³	A	NA	NA
	Quarter	NA	NA	1.5 µg/m ³	A
Hydrogen Sulfide	1 hour	0.03 ppm	U	NA	NA

Notes: : A = Attainment; **N** = Nonattainment; U = Unclassified; NA = Not Applicable or no applicable standard; ppm = parts per million; µg/m³ = micrograms per cubic meter.

^a SAAQS = state ambient air quality standards (California). SAAQS for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, particulate matter, and visibility-reducing particles are values that are not to be exceeded. All other state standards shown are values not to be equaled or exceeded.

^b NAAQS = national ambient air quality standards. NAAQS, other than ozone and particulates, and those based on annual averages or annual arithmetic means, are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with

maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the three-year average of the fourth highest daily concentration is 0.08 ppm or less. The 24-hour PM10 standard is attained when the three-year average of the 99th percentile of monitored concentrations is less than the standard. The 24-hour PM2.5 standard is attained when the three-year average of 98th percentile is less than the standard.

- c The national 1-hour ozone standard was revoked by the U.S. EPA on June 15, 2005.
- d In 2008, U.S. EPA lowered the 8-hour federal standard for ozone to 0.075 ppm. EPA will issue final designations based upon this standard at which point the Bay Area Air Basin is expected to be designated as non-attainment.
- e State standard = annual geometric mean; national standard = annual arithmetic mean.

Source: BAAQMD

CEQA

For construction-related impacts, BAAQMD recommends measures known as Best Management Practices (BMPs) to control PM-10 emissions.

During project construction, it is anticipated that the BAAB will be in non-attainment for federal clean air standards for ozone and for particulate matter.

Construction Activity Impacts

Dust is typically the primary concern during construction of new infrastructure. Because such emissions are not amenable to collection and discharge through a controlled source, they are called "fugitive emissions." Emission rates vary as a function of many parameters (soil silt, soil moisture, wind speed, area disturbed, number of vehicles, depth of disturbance or excavation, etc.). These parameters are not known with any reasonable certainty prior to project development and may change from day to day. Any assignment of specific parameters to an unknown future date is speculative and conjectural.

Of the total project construction, grading and roadbed preparation will require 3-6 months. Simultaneous with roadbed preparation other construction activities, which include placement of utility pipes and installation of a new bridge across Rheem Creek, will occur. Secondary support facility construction will require 5 to 9 months with some activity concurrent with roadbed installation. Installation of a turn out pad to facilitate site access for construction equipment will require approximately one month and the final stage of construction involves the laying of new track for 3-5 months.

The average disturbance width for a "new" track is 30 feet. For approximately 1.25 miles of new trackbed, approximately 5 acres would be a potential source area for fugitive dust generation. Because track installation is a linear process, only a small portion of the project alignment would be under simultaneous disturbance. Exhaust emissions will result from on and off-site heavy equipment. For the grading and track-bed preparation phase, approximately 9,300 cubic yards of fill material will be imported to elevate the new track. No excavation is proposed along the proposed new track alignment. Approximately 4,000 cubic yards of (Aggregate CL2) will also be imported to the site. This material will be purchased from commercial sources in the project area and delivered by truck. Assuming 15 cubic yards per truck delivery, a total of about 900 truck trips will be required to import the required fill material.

During the same period that the fill is being installed, a separate work crew will be installing the proposed bridge, drainage pipes, and other support facilities for the track. In addition, pipelines (such as water, natural gas, etc.) located under the railroad rights-of-way will have to be protected, either by encasement, relocation or other similar measures. Most of the material for constructing these support facilities will be delivered by truck. Approximately 10 daily truck deliveries are anticipated during the bridge and other support facility construction.

The Turn-Out Pad will require approximately 4,000 cubic yards of fill material. This pad will be installed by large equipment and will require about 270 truck trips (15 cubic yards per truck). The

final phase of construction involves laying the new track and installing the new track signal system. Track laying material is delivered by rail.

Emissions from the project's construction equipment and vehicles would be generated from multiple sources, including heavy mobile equipment and delivery/haul trucks, and worker vehicles. Construction-related air pollution emissions were calculated as a function of construction activity, construction duration, average haul truck mileage, and worker trips (auto/light-truck mileage).

Consistent with CEQA guidelines, construction activity air pollution emissions were calculated using the URBEMIS2007 computer model. The following prototype construction equipment fleet was assumed:

**Table III-2
CONSTRUCTION EQUIPMENT FLEET ASSUMPTIONS**

Track-bed Preparation	1 Grader
	3 Compactors
	1 Dozer
	1 Roller
	1 Backhoe
	1 Water Truck
Bridge Construction and Utilities Installation	2 Concrete Saws
	1 Grader
	2 Signal Boards
	2 Backhoes
	1 Crane
	1 Trencher
Turn Out Pad	4 Cement Mixers
	1 Paver
	1 Paving Equipment
	1 Roller
	1 Backhoe
Track/Signal Installation	1 Crane
	1 Forklift
	1 Generator
	2 Welders

Although bridge construction may occur concurrently with roadbed preparation, the two activities were split to facilitate abstraction of the emissions data. The track installation activity relies on train haul delivery of materials. Utilizing the above equipment fleet the following emissions summarized in Table III-3 were calculated by the URBEMIS2007 computer model:

**Table III-3
DAILY OFF-ROAD CONSTRUCTION EQUIPMENT EMISSIONS (lbs/day)**

Activity	ROG	NOx	CO	SO ₂	PM-10 Exhaust	PM-2.5 Exhaust	CO ₂
Track-bed Preparation (4.5 months)							
No Minimization	3.3	25.7	15.8	0.0	1.4	1.3	2,794.5
With Minimization*	3.3	19.6	15.8	0.0	0.2	1.1	-
Bridge Construction and Utilities Installation (7 months)							
No Minimization	2.6	19.4	12.4	0.0	1.1	1.0	2,246.8
With Minimization*	2.6	14.3	12.4	0.0	0.2	0.2	-
Turn Out Pad Construction (30 days)							
No Minimization	2.6	14.8	11.1	0.0	1.3	1.2	1,543.9
With Minimization*	2.6	14.8	11.1	0.0	1.3	1.2	-
Track/Signal Installation (4 months)							
No Minimization	1.9	8.7	6.5	0.0	0.6	0.5	1,017.5
With Minimization*	1.9	7.4	6.5	0.0	0.4	0.4	-

* Refer to the minimization measures identified on page 17.

Truck delivery and commuting for construction crews were calculated separately using the EMFAC2007 computer model and later added to the off-road emissions burden. The following on-road mileage was utilized in Table III-4 and III-5:

**Table III-4
ON-ROAD COMMUTING**

Phase	# Employees	RT Distance	Miles per Day
Track-bed Preparation	50	50 miles	2,500
Bridge Construction	75	50 miles	3,750
Turn Out Pad	15	50 miles	750
Track/Signal Installation	50	50 miles	2,500

**Table III-5
DAILY DELIVERY TRUCK TRIPS**

Phase	#Truck Trips	RT Distance	Miles per Day	Duration
Track-bed Preparation (Fill Import)	62	20 miles	1,240	10 days
Track-bed Preparation (Deliveries)	26	20 miles	520	10 days
Bridge Construction	10	20 miles	200	130 days
Turn Out Pad	54	20 miles	1,080	5 days
Track/Signal Installation	0	-	-	-

Utilizing EMFAC2007, the following emissions were calculated by activity (pounds/day) and summarized in Table III-6 and III-7:

**Table III-6
CAR AND LIGHT TRUCK
ON-ROAD EMISSIONS FROM CREW COMMUTING (pounds/day)**

Activity	ROG	NOx	CO	PM-10	PM-2.5	CO ₂
Track-bed Preparation	0.3	1.2	12.6	2.8	2.5	1860.3
Bridge Construction	0.5	1.7	18.7	4.1	3.7	2753.3
Turn Out Pad	0.1	0.3	3.8	0.8	0.8	558.1
Track/Signal Installation	0.3	1.2	12.6	2.8	2.5	1860.3

**Table III-7
HEAVY DUTY TRUCK
ON-ROAD EMISSIONS FROM TRUCK DELIVERY TRIPS (pounds/day)**

Activity	ROG	NOx	CO	PM-10	PM-2.5	CO ₂
Track-bed Preparation (Import)	1.1	20.1	9.7	0.6	0.6	3985.5
Track-bed Preparation (Deliveries)	0.5	8.4	4.1	0.3	0.2	388.8
Bridge Construction	0.2	3.3	1.6	0.1	0.1	644.4
Turn Out Pad	1.0	17.5	8.5	0.6	0.5	3471.5

The combined maximum total emissions from mitigated construction equipment emissions, truck activity, and commuter activity was totaled for each phase as follows in Table III-8 with application of specified BMPs:

**Table III-8
CONSTRUCTION, TRUCK HAUL AND EMPLOYEE COMMUTING MAXIMUM (pounds/day)**

Activity	ROG	NOx	CO	PM-10	PM-2.5	CO ₂
Track-bed Preparation	5.2	49.3	42.2	3.9	4.4	9,029.2
Bridge Construction	3.3	19.3	32.7	4.4	4.0	5,644.5
Turn Out Pad	3.7	32.6	23.3	2.7	2.5	5,573.5
Track/Signal Installation**	2.2	8.6	19.1	3.2	2.9	2,877.8

assumes simultaneous delivery of roadbed materials and construction
 figures represent maximal day when deliveries and construction both occur for indicated activity
 ** not including emissions from track-laying train

However, for Track-Bed preparation, all fill material and aggregate material delivery were assumed to be concentrated into a 10-day span even though this entire phase is anticipated to require 6-9 months.

Individually the track-bed preparation or bridge construction phase will not exceed thresholds. However, when activities occur simultaneously, and if truck deliveries for track-bed installation occur only over a 10-day time span, emissions thresholds could be exceeded. Therefore, the following minimization measures will be used:

1. Spread material trucks for track-bed preparation over a 20-day period
2. Utilize vendors closer than a 10-mile one-way (20-mile round trip) distance
3. Ensure that for the 10-day delivery period for infill material does not occur at the same time as bridge construction activities.

Any of these measures would ensure that daily emissions are minimized during construction. These measures are incorporated in minimization measure III-5 below.

Rail support during track-laying would consist of maneuvering the train into place and then using the on-board crane to place the concrete ties and continuously welded steel 30 minutes per day at 1,000 HP power output, and deposit materials for 7.5 hours at 100 HP average power. Although track-laying can sometimes proceed at one mile per day, one week was assumed required for this phase. The calculated emissions for the on-track source, assuming a Tier 2-rated locomotive engine are summarized in Table III-9:

**Table III-9
ON-TRACK SOURCE EMISSIONS**

Rail Support Emissions	ROG	NOx	CO	PM-10	PM-2.5
Daily (lb/day)	0.7	13.8	3.5	0.5	0.4
Annual (tons)	<0.1	<0.1	<0.1	<0.1	<0.1

Inclusion of train emissions during track/signal installation does not change the conclusion of CEQA insignificance.

Since there are no currently applicable CEQA significance thresholds for construction, emissions were annualized for comparison to the Section 176 (c) *de minimis* levels in the Clean Air Act implementation guidelines.

The following emissions were calculated by multiplying the daily emissions times the following time spans and are presented in Table III-10:

**Table III-10
ANNUAL EMISSIONS (tons/year)**

Activity	ROG	NOx	CO	SO ₂	PM-10	PM-2.5	CO ₂
Track-bed Preparation (4.5 months)							
	0.19	1.17	1.48	<1	0.19	0.18	252.29
Bridge Construction and Utilities Installation (7 months)							
	0.25	1.48	2.52	<1	0.34	0.31	434.63
Turn-Out Pad (30 days)							
	0.06	0.51	0.36	<1	0.04	0.04	84.59
Track/Signal Installation (4 months)							
	0.05	0.49	0.35	<1	0.04	0.04	83.60
Total *	0.55	3.65	4.71	0	0.61	0.57	855.11
De Minimis Levels							
	50	50	-	-	100	100	-

*unlikely that all projects would occur in same year but worst case scenario

All annual project-related construction emissions, assuming all activities occur within the same calendar year, are well below the *de minimis* thresholds.

Avoidance, Minimization and Mitigation Measures

Project construction requires implementation of dust control measures to support a finding of less-than-significant air quality impact. Dust control minimization measures for this project are identified in the following text.

- III-1 All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.**
- III-2 All haul trucks transporting soil, sand, or other loose material off site shall be covered.**
- III-3 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.**
- III-4 Vehicle speeds on unpaved areas shall be limited to 15 miles per hour.**

If the entire import of fill materials for roadbed preparation were to occur over a 10-day period and occur concurrently with bridge construction, NOx emissions could temporarily exceed thresholds for the 10 days. Ensuring the activities do not overlap or extending the time period to import fill material would provide for a finding of less-than-significant for all pollutants.

III-5 The import of trackbed fill shall not occur simultaneously with bridge construction; the source of fill material shall be less than a 10-mile one-way trip; or the hauling schedule shall be extended to at least 20 days.

Operational Impacts

Vehicle Idle Reduction

Operationally, the proposed connector will allow for more efficient rail operations by reducing idle times for trains on sidings waiting for single tracks to clear. If a portion of BNSF traffic to/from Oakland further shifts to UPRR tracks between Stege Junction and the new connector, a number of Richmond road/rail intersections will experience less delay because almost all BNSF mainline intersections are at-grade while most UPRR intersections south of Chesley Avenue are grade-separated. The comparison between uses of the UPRR versus BNSF mainline in terms of the numbers of at-grade crossings is listed in Table III-11:

**Table III-11
AT-GRADE CROSSINGS FOR EACH RAILROAD BETWEEN PARR BLVD. AND STEGE**

BNSF	UPRR
Parr Blvd	Parr Blvd
Brookside Dr.	Brookside Dr.
Market St.	Market St.
Chesley Ave.	Chesley Ave.
Richmond Parkway	Cutting Blvd
Ohio Ave	
3 rd St.	
4 th St.	
Cutting Blvd.	
Harbor Way/Wright Ave.*	
Marina Way	
Marina Bay Dr.	
34 th St.	
Regatta Blvd.	

*a track bisected crossing, counted as a single crossing for analysis purposes

Cross-over to the UPRR tracks at the connector eliminates approximately ten at-grade crossings where on-road traffic is delayed for each freight train. Given that freight trains may be as long as one mile and that trains average less than 20 mph, gates often are down for more than 4 minutes. Some of the BNSF at-grade crossings are on low volume streets, but many are on higher volume streets with substantial idling times, such as Cutting Boulevard. Reduction in vehicle idling times from at-grade conflicts is air quality positive. Because freight schedules are variable, it is not possible to accurately quantify any air quality benefit. As an order of magnitude estimate, it was assumed that 2.4 diverted freight trains would reduce daily on-road vehicle idling by 800 minutes (2.4 trains x 10 crossings x 20 vehicles delayed x 2 minute average delay).

The daily emissions benefit from on-road vehicle idling reduction depending upon the vehicle type, delayed is estimated in Table III-12 (pounds/day):

**Table III-12
DAILY EMISSIONS BENEFIT FROM ON-ROAD VEHICLE IDLING REDUCTION**

Vehicle Type	ROG	CO	NOx	PM-10	PM-2.5
Light duty auto	0.05	0.62	0.04	0.002	0.003
Medium duty vehicle	0.10	1.10	0.14	0.002	0.003
Heavy duty vehicle	0.24	1.69	1.08	0.004	0.004

Source: EMFAC2011 Computer Model

Although the reduction is not a substantial amount, the air pollution emissions reduction benefit is further enhanced by an increase in BNSF freight train travel speed through Richmond, a shorter, more direct route between the proposed connector and Stege Junction on the UPRR mainline rather than the circuitous BNSF tracks through West Richmond, and overall rail freight system efficiency from reduced railroad engine idling times waiting on sidings for the mainline to clear. Some of these efficiencies cannot be quantified with reasonable accuracy. They do attest to the fact that the proposed project is generally air quality positive during operations even if some benefits are not directly quantifiable.

Train Idling Reduction

There are approximately ten freight trains that may experience delay (some UPRR, some BNSF). For purposes of calculations, it was assumed that each freight train was delayed for fifteen minutes each (some longer, some not at all). The daily delay "penalty" because of track conflict is 2.5 hours of train engine idling.

Idling train engines are not substantial polluters. Diesel engines emit mainly CO and NOx whose generation rate depends upon oxidation temperature. At "cool" idle, NOx generation rates are low. The emissions "savings" from a reduction of 2.5 idling hours were calculated using EPA factors for Tier 1 engines and are as follows (lb/day):

CO	0.4
ROG	0.1
NOx	3.1
SOx	<0.1
PM-10	<0.1

These reduced emissions are not necessarily substantial, but any reductions of ozone precursor emissions (NOx and ROG) in a non-attainment airshed are positive.

The emission data summarized under issue b. above, demonstrates that the proposed project emissions will fall below regional and federal (*de minimis*) standards. Therefore, the proposed project will not make a cumulatively considerable contribution to air quality degradation within the BAAB because emissions fall below the threshold of concern in the State Implementation Plan. The proposed connector track is designed to enhance freight and passenger movement by improved rail schedule reliability. However, transport by rail is considered more pollution-efficient than on-road movement. Rail would generally not induce growth of goods/passenger movement, but only accommodate an existing possible demand. Cumulative air quality impacts are considered less-than-significant as no other projects are known to be scheduled for construction in the project area during late 2012 and 2013. A reduction in operation emissions (both trains and motor vehicles) will result if the proposed project is implemented. As noted in the project description, the Richmond Rail Connector project has been incorporated into the TIP and assigned ID# (CC-090032). The project has been assigned funding from the Congestion Mitigation and Air Quality Improvement fund (\$5,440,000) and from the Trade Corridors Improvement Fund (\$10,880,000).

d. *Expose sensitive receptors to substantial pollutant concentrations?*

Less Than Significant Without Mitigation Incorporation – Based on compliance with Best Management Practices, local emissions of fugitive dust and other criteria pollutants are not forecast to expose sensitive receptors to substantial pollutant concentrations. Other air quality issues are discussed below.

Naturally Occurring Asbestos

Naturally occurring asbestos (NOA) is a concern in some parts of California where serpentine rock formations contain high fractions of asbestos-containing materials. However, that concern revolves

around the subsequent abrasion and release of such material from roadway paving with NOA aggregates. There is negligible re-suspension of such material from a railroad track bed because there is no mechanical wearing process. Even if the track bed ballast rock contained elevated levels of NOA, there is no mechanism to effect an airborne release.

PM-2.5 and PM-10 Hot Spot Potential

Transportation projects may cause increased levels of particulate emissions at locations where a significant number of diesel vehicles congregate at a single location. A qualitative “hot spot” analysis is required for “projects of air quality concern” (POAQC) located in non-attainment areas if Federal Highway Administration (FHWA) or Federal Transit Agency funding or approval will occur. The guideline that characterizes a POAQC is a facility that serves 10,000 diesel-fueled trucks (or equivalent) per day. The PM-10 emission factor for heavy duty diesel trucks is approximately 0.05 gram/mile (EMFAC2007). In one mile of travel, 10,000 diesel trucks (the POAQC level) would generate 500 grams of PM-10 emissions per mile.

Line-haul engines average 0.2 grams of PM-10 per brake-horsepower hour (EPA-420-F-09-025, 2009). Four engines running at 500 HP each over a 50-mile stretch would generate 8 grams/mile of PM-10 per train seen as follows:

$$0.2 \text{ g/BHP-HR} \times 500 \text{ HP/engine} \times 4 \text{ engines/50 miles} = 8 \text{ grams/mile}$$

One four-engine train is therefore the PM-10 equivalent emitter of 160 diesel trucks. The proposed project would allow an average of 2.4 freight trains to shift from the BNSF tracks to the UPRR tracks between the new connector and Stege Junction. PM-10 emissions from these 2.4 trains are “new” emissions relative to the existing homes nearest the UPRR tracks. An average of 2.4 trains is the diesel-truck equivalent of 384 trucks per day, or approximately one truck every 4 minutes. The PM-10/PM-2.5 impact is well below the 10,000 truck per day POAQC level.

Overall regional diesel combustion emissions would be slightly reduced by substantial reduction of idling on sidings. PM-10/PM-2.5 emissions will also be reduced from less idling of cars and trucks at approximately ten at-grade crossings along the existing BNSF mainline. The proposed project is not a POAQC and thus does not require a PM-10/PM-2.5 “hot spot” analysis.

Mobile Source Air Toxics (MSATs)

The control of MSATs at the local, state and national level has focused on on-road sources. However, any movement of goods or people that requires combustion of fossil fuels generates MSATs (also called hazardous air pollutants, or HAPs) in varying amounts. In response to the Clean Air Act Amendments (CAAA), EPA regulates 188 air toxics. Seven of these compounds are designated as carcinogenic, including acrolein, benzene, 1,3-butadiene, formaldehyde, naphthalene, polycyclic organic matter (POM) and diesel particulate matter (DPM). EPA and the California Air Resources Board (ARB) have long standing programs to reduce MSATs from on-road sources. In 2008, EPA promulgated national rules for locomotives (73 FR 37096, June 30, 2008). Newly manufactured and remanufactured locomotives must meet standards for PM-10, VOC and NOx. The stringency of the standards depends upon the year of original manufacture and ranges from Tier 0 (pre-2001) to Tier 4 (post-2014). For PM-10, for example, a Tier 4 locomotive must be twenty times “cleaner” than a Tier 0 engine. Because these standards are only triggered when engines are replaced or rebuilt, it will take a number of years for these standards to take full effect. However, a dramatic reduction in criteria pollutants and in MSATs is projected to occur for large line-haul locomotives, as shown in Table III-13:

**Table III-13
PROJECTED LOCOMOTIVE EMISSIONS REDUCTIONS (from Year 2012 Baseline)**

Year	PM-10 (1)	VOC (2)	NOx (3)
2012	0.0%	0.0%	0.0%
2014	12.2%	14.1%	6.3%
2016	24.4%	28.2%	16.0%
2018	34.1%	40.8%	25.0%
2020	43.9%	49.3%	31.2%
2025	61.0%	63.4%	48.6%
2030	75.6%	73.2%	63.2%
2035	82.9%	81.2%	74.3%
2040	90.2%	85.9%	80.6%

(1) Including DPM (2) Including gaseous MSATs and smog precursors (3) Smog Precursor
Source: EPA-420-F-09-025 (April, 2009)

The proposed project will create a small reduction in regional MSAT emissions from decreased idling times on sidings, from a reduction in the amount of delay for BNSF at-grade crossings in Richmond, and an increase in travel speed on UPRR tracks for that portion of BNSF freight traffic shifted to UPRR tracks. MSAT emissions in locomotive exhaust will be reduced near the BNSF mainline, but slightly increased along the UPRR tracks.

Increased MSAT emissions along the UPRR tracks were calculated assuming an existing DPM emission rate of 8 grams per mile for freight trains and 2 grams per mile for passenger service; The fractional share of gaseous MSATs was estimated using “speciation factors” for diesel exhaust supplied by the California ARB. If the project is completed and fully operational before 2015, there will be an increase in MSAT exposure along the UPRR tracks compared to existing conditions. By 2015, locomotive emissions reductions will more than compensate for increased freight traffic on the UPRR tracks seen in Table III-14 as follows (grams/mile):

**Table III-14
INCREASED MSAT EMISSIONS ALONG THE UPRR TRACKS**

MSAT	2012 (a)	2015 (b)	2020 (b)
DPM	160.0	124.0	83.5
Benzene	137.3	106.4	71.0
1,3-Butadiene	25.8	20.0	13.5
Acrolein	3.2	2.5	1.7
Formaldehyde	54.2	42.0	28.3

(a)=10 freight and 40 passenger trains on UPRR tracks

(b)=12.4 freight and 40 passenger trains on UPRR tracks

Source: Speciation data from “Colton Grade Crossing Separation Air Quality Analysis” LSA Associates, 2010

There is no universally accepted methodology that can accurately translate any increase in MSAT exposure into a corresponding public health risk. The dispersion calculation that converts source emissions into receptor exposure is equally imprecise as are the published cancer potency factors that convert exposure to risk.

It should be noted that in a regional sense, a number of small emissions benefits from the project will actually reduce MSAT emissions. Given the mobility of the Bay Area population on both a daily and lifetime basis, the cumulative benefit of this project is presumed to off-set any localized impact.

Microscale CO Hot-Spot Analysis

Transportation projects are required to demonstrate that they will not create new CO “hot spots” or worsen existing violations. Analysis guidance documents are focused almost exclusively on roadway CO emissions. The proposed project will not increase on-road congestion, and may reduce vehicular

delays at locations where idling or slow-moving trains currently block on-road traffic. Although the proposed action is not a roadway project, a standard CO impact analysis has been developed and used for well over a decade. The CO analysis flowchart was applied to the proposed connector project. The use of the flowchart demonstrates that no detailed CO modeling analysis is required as follows:

CO Protocol Flowchart

3.1.1 Is this project exempt from all emissions analysis?

Response: No

3.1.2 Is this project exempt from regional emissions analysis?

Response: No

3.1.3 Is this project locally defined as regionally significant?

Response: No, regionally significant projects are major roadways or fixed track transit guideways. The proposed cross-over track is not a roadway and is not designed for passenger service.

Examine Local Impacts

Level 1: Is the project in a CO non-attainment area?

NO

Level 1: Was the area redesignated as “attainment” after the 1990 Clean Air Act?

YES

Level 1: Has “continuous attainment” been verified by the local Air District?

YES, Proceed to Level 7

Level 7: Does the project worsen air quality?

NO, the project will reduce on-road vehicular delay at existing at-grade crossings, improve BNSF freight train travel speeds and shorten the cross-Richmond train travel distance.

Therefore, a CO hot-spot analysis is not required.

Finding

Based on the preceding analysis of specific activities with potential to expose sensitive receptors to substantial pollutant concentration, the proposed project will not cause a significant impact on the homes located on the east side of Giant Road in the vicinity of the project or along the UPRR alignment. No mitigation is required for most of the activities, but specific minimization measures are identified above (measures III-1 through III-4) to control fugitive dust and will be implemented by BNSF when construction proceeds.

Regarding cumulative impacts, the proposed connection track may promote an increase in freight and passenger movement by improved rail schedule reliability. However, transport by rail is considered more pollution-efficient than on-road movement. Cargo movement by rail yields an average fuel efficiency of 400 net ton-miles per gallon of fuel (American Railroad Association, 2004). An on-road truck hauling 25 tons of cargo at 5 miles per gallon has a cargo efficiency of 125 net ton-miles per gallon. Rail would generally not induce growth of goods/passenger movement, but only accommodate an existing possible demand. Cumulative air quality impacts are considered incrementally air quality positive within a regional context.

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

Less Than Significant Impact – Construction activities generally do not have the potential to generate a substantial amount of odors. The primary source of odors associated with construction activities

are generated from the combustion petroleum products by equipment. However, such odors are part of the ambient odor environment of urban areas such as the areas affected by the existing train operations. The proposed project is not of sufficient size nor will it require a substantial length of time to construct so as to result in the generation of a substantial amount of odors during construction activities.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
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?			X	
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 U.S. Fish and Wildlife Service?		X		
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?		X		
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?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
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?				X

SUBSTANTIATION: The following analysis is based on the Natural Environmental Study – Minimal Impacts (November 2011)

- 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?*

Less Than Significant Impact – The project alignment consists of an approximately 80-foot wide, 0.75-mile long proposed railway right-of-way corridor and two 0.25-mile long BNSF and UPRR railway segments at either end, located west of the intersection of Giant Road and the onramp of Richmond Parkway. The proposed alignment traverses southwest-northeast through mostly open fields near a mix of residential, light industrial and commercial buildings. The ground surface of most of the alignment is highly disturbed and has been recently disked. The terrain is relatively level, with elevations ranging between 15 to 25 feet above mean sea level. The existing railroad tracks at either end of the rail corridor are located several feet higher than the rest of the project alignment. Vegetation observed included foxtails (*Hordium sp.*), tumbleweeds (*Salsola iberica*), wild berries (*Ribes sp.*), dandelions (*Taraxacum officinale*), willows (*salix sp.*), shrubs (*Rhus trilobata*), and non-native grasses (*Bromus sp.*), with denser growth near the UPRR railroad track and within a drainage (Rheem Creek) near the middle the project alignment. Soils are made up of fine sand with silt and clays and some large rocks. Due to historic industrial contamination, a portion of the proposed alignment is covered (capped) by imported fill material.

The most common faunal species observed on the site were dogs (*Canis lupus familiaris*) and beachy ground squirrels (*Otospermophilus beecheyi*). Other common species include western meadowlark (*Sturnella magna*), cottontail rabbits (*Sylvalegus audobonii*), and mourning doves (*Zenaida macroura*).

Although the project site contains limited habitat that might support listed or sensitive species, none of these species were identified on the project site. Based on the detailed survey of the project alignment, no listed or sensitive species will be adversely impacted by implementing the proposed project.

- 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 U.S. Fish and Wildlife Service?*

Less Than Significant With Mitigation Incorporated – The vast majority of the alignment is disturbed and characterized by common disturbance oriented species. There are areas where riparian, open water, and salt marsh habitats occur scattered along the alignment. The following is a discussion of the general biological characteristics associated with the proposed right-of-way. Please refer to the discussion under IV.c below for riparian habitat and wetlands information.

Urban/ Disturbed

This community occurs at the top of the slopes and in disturbed areas. The community is characterized by storksbill (*Erodium cicutarium*), foxtail chess (*Bromus madritensis*), wild oats (*Avena barbata*), ripgut brome grass (*Bromus diandris*), and foxtail fescue (*Vulpia myuros*). Other species occurring in this community are short-pod mustard (*Brassica geniculata*), barley (*Hordium vulgare*), *Amsinkia sp.*, and star thistle (*Centaurea melitensis*).

Due to the chronic disturbances as well as a recent burn within the proposed alignment, this area does not support a diverse fauna. The most common faunal species observed on the site were dogs (*Canis lupus familiaris*) and beachy ground squirrels (*Otospermophilus beecheyi*). Other common species include western meadowlark (*Sturnella magna*), cottontail rabbits (*Sylvalegus audobonii*), and mourning doves (*Zenaida macroura*).

Wetlands on the West Side of UPRR

This community occurs along the UPRR on the west side approximately 700 feet north of Parr Boulevard. This area is situated between the railroad tracks and industrial/commercial developments to the west. The area appears to have been previously disturbed, and is characterized by coyote bush (*Baccharis pillularious*), and toyon (*Heteromeles arbutifolia*), with an understory of disturbed non-native grasses and annual species, including: storksbill (*Erodium cicutarium*), foxtail chess (*Bromus madritensis*), wild oats (*Avena barbata*), ripgut brome grass (*Bromus diandris*), and foxtail fescue (*Vulpia myuros*). Other species occurring in this community are short-pod mustard (*Brassica*

geniculata), barley (*Hordium vulgare*), (*Amsinkia sp.*, and star thistle (*Centaurea melitensis*).
Wetlands and Other Waters of the U.S.

Wetlands found within the project site are typically dominated by erect, rooted, herbaceous hydrophytic (water-loving) plant species adapted to growing in conditions of prolonged inundation. Common plant species present in this wetland type include cattails (*Typha spp.*) and Wild-berry (*Rubus sp.*) This seasonally flooded area consists of freshwater wetlands that support ponded or saturated soil conditions during winter and spring and are dry through the summer and fall until the first substantial rainfall. The vegetation is composed of wetland generalists, such as hyssop loosestrife (*Lythrum hyssopifolia*), cocklebur (*Xanthium spp.*), and Italian ryegrass (*Lolium multiflorum*) that typically occur in frequently disturbed sites, such as along streams.

This community is considered optimal habitat for California clapper rail (*Rallus longirostris obsoletus*) and California black rail (*Laterallus jamaicensis coturniculus*), as well as giant garter snake (*Thamnophis gigas*).

- 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?*

Less Than Significant With Mitigation Incorporated –

Please refer to the discussion of the wetlands west of the UPRR tracks above. The result of the jurisdictional determination is that there are two features on the site that would be subject to regulatory jurisdiction by the US Army Corps of Engineers under Section 404 of the Clean Water Act or the Rivers and Harbor Act of 1897; the State Water Quality Control Board under Section 401 of the Clean Water Act, and California Department of Fish and Game under Section 1600 of the Fish and Game Code. The first area is located in the Rheem Creek channel where the channel makes a transition from a concrete-lined box channel to a soft bottom natural channel. The Rheem Creek crossing area is characterized by wetland plant species, wetland hydrology, and wetland soils. Therefore, this feature meets the criteria for wetlands, and is regulated as such.

The second area subject to jurisdiction is an unnamed drainage feature that runs parallel to the UPRR tracks on the east side. The surface runoff accumulates at the high fill and flows north until it discharges into Rheem Creek. There is no natural channel, just a low-elevation swale where the surface runoff accumulates and flows under low velocity to the creek channel. This channel is characterized by hydrophytic vegetation using the facultative neutral test. However, there are no hydric soils or wetland hydrology associated with this site. Therefore, this channel is characterized as Waters of the U.S., and a streambed. The vegetation in the channel is considered to be riparian habitat, which consists of plants that are dependent upon access to water (surface or groundwater) for the majority of the year. The temporary and permanent impacts are summarized in Table IV-1.

The proposed project will temporarily disturb 0.02 acre of wetlands in Rheem Creek. It will permanently eliminate 0.32 acre of waters of the United States in the unnamed drainage feature that runs parallel to the UPRR tracks on the east side. Mitigation is proposed below to offset these impacts.

**Table IV-1
 JURISDICTIONAL IMPACTS**

Location (Mile Post)	Type of Impact	Acreage of Temporary Impacts	Acreage of Permanent Impacts
New Track Crossing	Clear-span Bridge (wetlands)	0.02 Acre	0.00
UPRR MP 14.2	Culvert Crossing (waters/riparian)	0.15 Acre	0.32 Acre
Total Impacts		0.02 Acre	0.32 Acre

Avoidance, Minimization and Mitigation Measures

To offset the temporary loss of wetland habitat within Rheem Channel and the permanent loss of riparian habitat adjacent to the UPRR track, the following mitigation measure will be implemented.

IV-1 Mitigation for impacts to jurisdictional waters of the United States and State shall be offset by either or both of the following measures: (a) acquisition of wetland mitigation credits from an authorized wetland mitigation bank in the general area of the project at a 2:1 ratio, or 2 acres for each acre lost; and (b) revegetating the area adjacent to the eastside of the new track, not directly adjacent to the track but within the new track alignment, with a comparable set of native wetland plants as presently occurs in the proposed alignment. This requirement shall be memorialized in the 1602 Streambed Alteration Agreement and 404 Permit obtained for this project prior to disturbing the wetland habitat that occurs within the project alignment.

- 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?*

Less Than Significant Impact – The project alignment will cross an existing disturbed parcel of land to install a connector track between the existing BNSF track on the east (adjacent to Giant Road) and the UPRR tracks on the west. Neither the site biology survey nor any of the literature identified the project alignment as a wildlife movement corridor. This is probably because the land uses to the west and south are urban in character, and the tracks and the Richmond Parkway create significant impediments to wildlife movement through the project area. The only existing feature within the project alignment that could serve to facilitate wildlife movement from west to east is the Rheem Creek channel, which is a concrete channel east of Giant Road. The proposed project will disturb this channel for approximately 30 days during which the fill material will be delivered to the site for the new track high fill. Once this task is completed, the channel will be restored and the clear span bridge will be installed over the channel. This clear span bridge will provide adequate freeboard over the channel to pass the 100-year flood and more than adequate head room for the largest mammals in the area to move along the creek channel. Based on the above proposed construction and operation scenario, the proposed project will not substantially impact movement of any migratory fish or wildlife.

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

No Impact – The project site does not have any biological resources, such as trees, that will be impacted by the proposed project. Therefore, no potential conflict with any local policies or ordinances can occur.

- 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?*

No Impact – The project site is not located within the overlay for the East Contra Costa Habitat Conservation Plan/Natural Community Conservation Plan or any other habitat conservation or natural community conservation plan. Therefore, no potential conflict with any such plans can occur if the proposed project is implemented.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
V. CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in '15064.5?			X	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?		X		
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X
d) Disturb any human remains, including those interred outside of formal cemeteries?			X	

SUBSTANTIATION: Information in this section is based on the “Archaeological Survey Report Rheem BNSF and UPRR Connection Track.” May 2012.

- a. *Cause a substantial adverse change in the significance of a historical resource as defined in '15064.5?*

Less Than Significant Impact – The purpose of the above study was to identify any archaeological or historical resources within or immediately adjacent to the undertaking's Project Area Limits (PAL). The scope of the study included a historical/archaeological resources records search, historical background research, Native American contacts, consultation with the local community, and an intensive-level field survey.

Throughout the course of the study, no “historical resources,” as defined by CEQA, were encountered within or adjacent to the PAL. However, the PAL is in close proximity to a number of known Native American shell mounds from which numerous human burials and artifacts have been recovered. In light of those discoveries, coupled with correspondences with Native American tribes suggesting that similar cultural resources may be present within or in the immediate vicinity of the PAL, the potential of encountering such subsurface cultural remains within the project boundaries cannot be overlooked.

Based on the above analysis, the proposed alignment does not have any historic or archaeological resources on the ground surface along the Richmond Rail Connector alignment. However, a potential exists for subsurface archaeological resources to be exposed during ground-disturbing activities and this potential will require active management during construction. Two measures are provided below to address the potential for accidental exposure of subsurface resources.

The proposed project will install a connector track between the BNSF track on the east and the UPRR tracks on the west. The new track high fill and other related facilities will be placed above the existing ground surface and minimal excavation will occur along the connector track alignment. The cultural resources study did not identify any historical resources on the site or any potential for historical resources to be encountered on the project site. Therefore, the potential impact to historical resources from implementing the proposed project is less than significant.

- b. *Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?*

Less Than Significant With Mitigation Incorporated – According to the construction plans, the new track high fill and other related facilities will be placed above the existing ground surface and minimal excavation will occur along the connector track alignment. The cultural resources study did not identify any archaeological resources on the site but based on the occurrence of known archaeological resources in the vicinity of the project site, the cultural resources report recommends that mitigation measures be provided to address the discovery of subsurface resources within the track alignment.

Avoidance, Minimization and Mitigation Measures

The following mitigation measure will be implemented for this project.

V-1 *If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.*

The following minimization measure will be implemented for this project.

V-2 *If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC) who will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact the Caltrans District 4 Office of Cultural Resources so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.*

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

No Impact – According to the construction plans, the new track high fill and other related facilities will be placed above the existing ground surface and minimal excavation will occur along the connector track alignment. Therefore, no potential impact to paleontological resources will occur.

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

Less Than Significant Impact – Project implementation will require limited excavation within the project area, both on the west and east sides of the UPRR tracks. Due to historic human presence and activity in the area, the potential for buried human remains to be disturbed is considered minimal.

Avoidance, Minimization and Mitigation Measures

Please see Measure V-2 under question V.b above.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
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:				
1. 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.			X	
2. Strong seismic ground shaking?			X	
3. Seismic-related ground failure, including liquefaction?			X	
4. Landslides?				X
b) Result in substantial soil erosion or the loss of topsoil?			X	
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 onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
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?			X	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X

SUBSTANTIATION: Contra Costa County General Plan January 2005; Volumes One and Two, Richmond General Plan August 1994; USDA, Natural Resources Conservation Service Web Soil Survey, Contra Costa County Soil Survey, 1971 and 1980 and California Regional Water Quality Control Board, San Francisco Bay Region, Water Quality Control Plan (Basin Plan), 2010.

a.1 *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 Impact – There are no major geologic features within the connector rail alignment. The project area is on a flat to gently sloping alluvial plain near San Pablo Bay. Several active faults have been mapped within the county or project vicinity, including the San Andreas, Hayward, Calaveras, Franklin, Concord, Greenville, Antioch, and Black Diamond Area faults. However, no active faults cross the property. Therefore, the potential for fault rupture within the project area is considered to be a less than significant impact.

a.2 *Strong seismic ground shaking?*

Less Than Significant Impact – The nearest fault of major significance is the Hayward Fault, located just east of the project area. The Hayward Fault is a Special Study Zone as designated by the Alquist-Priolo Special Study Zone Act. The project area is located near an Alquist-Priolo fault zone. In addition, the other nearest fault of major historical significance to the project alignment is the San Andreas Fault to the west of the city. These faults are likely to be the principal source of seismic activity affecting the project area.

Based on the Richmond City and Contra Costa County General Plans, moderate to severe seismic ground shaking along the proposed alignment can be expected over the life of the proposed project, caused by earthquakes along portions of the fault systems within the vicinity of the project. As part of the project, the proposed new infrastructure system will be constructed to ensure that it can meet current railroad design code and safety requirements, including seismic standards. Because of the identified potential for significant seismic shaking hazards within the project area, the following design measures will be implemented to ensure that construction of new facilities meets safety requirements. The type of project proposed does not expose residences or living quarters to seismic hazards. BNSF and UPRR maintain crews that monitor and repair any damage from natural hazards that may affect their main line tracks.

VI-1 *Construct rail structures in areas identified in the preliminary geotechnical report as having a high liquefaction potential in accordance with measures identified in this report or as designated by the engineering design standards.*

VI-2 *Apply seismic design and construction criteria to all rail structures subject to significant seismic shaking in accordance with the preliminary geotechnical report.*

VI-3 *Require stability analysis for areas designated “Generally Susceptible” and “Mostly Susceptible” to liquefaction/subsidence on the local jurisdiction’s Hazards Overlay Maps. If evidence of liquefaction/subsidence is identified along the track sections, project design may include:*

- *In-situ densification of susceptible soil.*
- *Ground improvements such as removal and replacement of susceptible soils or dewatering.*
- *Foundations designed to accommodate liquefaction.*
- *Shallow foundation design to accommodate vertical and lateral ground displacement.*

VI-4 *Require future site-specific geotechnical investigations of proposed construction of embankments and bridge/grade separations to include an assessment of potential impacts and site specific design measures related to expansive and otherwise unstable soils and specific measures to control these constraints. The identified design measures shall be implemented by BNSF.*

a.3 *Seismic-related ground failure, including liquefaction?*

Less Than Significant Impact – Ground-shaking can cause damage by itself or through the potential secondary effects such as fire, and dam failure. Ground settlement may also occur in the unconsolidated valley sediments, many of which are saturated with water. These sediments represent the poorest kind of soil condition for resisting seismic shock waves. The changes that occur, such as liquefaction and loss of strength in fine-grained materials, can result in ground cracking, unequal settlement, subsidence and other surface changes. Soil compaction and settlement can also result from seismic ground shaking. If the sediments which compact during an earthquake are saturated with water, soil can liquefy and lose its capacity to support structures. The extent of damage ranges from minor displacement to total collapse of a structure. Engineering

treatment of either the ground or structures or both can sometimes stabilize hazards, such as liquefaction. The County's General Plan indicates that the project area is located within an area of low to moderate liquefaction hazard potential. Neither the County nor City General Plan documents address the issue of whether the project area is within a subsidence area; however the area does have some potential to experience high groundwater and may be at risk for subsidence.

a.4 *Landslides?*

No Impact – The proposed project alignment is essentially flat and there is no potential for any landslides to occur or to be generated in conjunction with the project.

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

Less Than Significant Impact – Soil erosion is a natural process which can become accelerated by human activities such as construction and agricultural practices. Key factors affecting erosion and sedimentation are the extent of vegetation, vegetative cover, slopes, amount of rainfall and soil porosity. Development induced erosion resulting from construction activities, is the greatest source of localized sedimentation problems; primarily caused by vegetation removal, compaction of porous soils and large drainage areas.

Contra Costa County is within the central Coast Range Geomorphic Province of California. Unconsolidated alluvium, terrace deposits and bay mud occupy the lowland areas. These earth materials consist of sand, silt, clay and gravel of variable density and strength.

According to the USDA, Natural Resources Conservation Service Web Soil Survey, the following soils are present within the project footprint:

- Clear lake clay 0 to 2 percent slope;
- Botella clay loam 0 to 2 percent slope; and
- Tierra loam 2 to 9 percent slope.

(Soil Survey Staff, Natural Resources Conservation Service, USDA, Web Soil Survey, Available online at <http://websoilsurvey.nrcs.usda.gov>, accessed June 2009).

The project area generally is not subject to substantial erosion or unstable soil conditions from grading activities, nor will any of the activities implemented by the proposed project cause any major changes in topography. Soil data indicate that portions of the project area are moderately to highly susceptible to soil failure (shifting and/or sinking) and portions of the alignment may have already received several feet of fill material. Drainage and runoff will have to be controlled to avoid the potential for erosion during construction activities. Local effects on soils would result primarily from the construction activities associated with the proposed action, such as grading, excavating, and re-contouring the soils.

These activities could alter soil profiles and create a potential for erosion. To ensure that substantial erosion and unstable soil conditions are not created during construction and operation of the proposed project, measures are identified to minimize water-related erosion.

Avoidance, Minimization and Mitigation Measures

Measures are available to minimize erosion problems associated with wind and water, especially during the construction phase when cut slopes are exposed. During construction, the length of time vegetation and other cover is absent should be minimized. Due to the size of areas to be disturbed by the proposed project, the filing of a Notice of Intent with the State Water Resources Control Board and the preparation and implementation of a Storm Water Pollution Prevention Program (SWPPP) is mandatory. New construction must conform to the Regional Board Basin Plan stormwater discharge requirements when slopes are exposed. All or an appropriate combination of the following measures can be used to control potential water erosion during construction to meet

these requirements. After the construction phase, long-term erosion control can be accomplished by keeping soils under vegetative cover or hardscape (pavement, gravel, or other hard cover). Where appropriate, one or more of the following measures will be implemented in conjunction with the existing SWPPP for the Rheem interconnection track segment.

- VI-5 Add protective covering of mulch, straw or synthetic material (erosion control blankets, tacking will be required).**
- VI-6 Limit the amount of area disturbed and the length of time slopes and barren ground are left exposed. After construction, soil shall be compacted to a level similar to pre-construction conditions.**
- VI-7 Construct diversion dikes and interceptor ditches to divert water away from construction areas.**
- VI-8 Install slope drains (conduits) and/or water-velocity-control devices to reduce concentrated high-velocity streams from developing.**
- VI-9 Apply provisions of erosion and sediment control that reduce volume and velocity of flows and content of sediment to levels that do not cause significant rill or gully erosion in susceptible areas. In addition, provide for restoration of areas that do become eroded.**
- VI-10 Prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) and Water Quality Management Plan (WQMP) that shall reduce pollutants, such as sediment, from the disturbed site to the maximum extent practicable as defined by the Regional Water Quality Control Board.**

- 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 onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?*

Less Than Significant Impact – Please refer to the discussion under VI.a above. Potential instability includes strong seismic ground shaking and a potential for liquefaction and subsidence. Measures VI-1 through VI-4 can control the potential adverse effects of these sources of soil instability to a less than significant impact level for the proposed connector track and related infrastructure.

- 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?*

Less Than Significant Impact – The soils and fill materials that exist on the project site are not identified as expansive soils as defined in Table 18-1-B of the Uniform Building Code. Therefore, no significant adverse impact from expansive soils can affect the proposed project.

- e. *Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?*

No Impact – The proposed project does not include any septic tanks or alternative wastewater disposal systems. Therefore, no adverse impact to such systems can occur from implementing the proposed project.

VII. GREENHOUSE GAS EMISSIONS: Would the project:	An assessment of the greenhouse gas emissions and climate change is included below. While Caltrans has included this good faith effort to provide the public and decision-makers as much information as possible about the project, it is Caltrans determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are below.
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?	

SUBSTANTIATION: The analysis in this section is based on the Air Quality and GHG Impact Analysis (November 2011).

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gases (GHGs), particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization's in 1988, has led to increased efforts devoted to greenhouse gas (GHG) emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs related to human activity that include carbon dioxide (CO₂), methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (s, s, s, 2 – tetrafluoroethane), and HFC-152a (difluoroethane).

There are typically two terms used when discussing the impacts of climate change. "Greenhouse Gas (GHG) Mitigation" is a term for reducing GHG emissions in order to reduce or "mitigate" the impacts of climate change. "Adaptation," refers to the effort of planning for and adapting to impacts due to climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels)¹.

Transportation sources (passenger cars, light duty trucks, other trucks, buses and motorcycles) in the state of California make up the largest source (second to electricity generation) of greenhouse gas emitting sources. Conversely, the main source of GHG emissions in the United States (U.S.) is electricity generation followed by transportation. The dominant GHG emitted is CO₂, mostly from fossil fuel combustion.

There are four primary strategies for reducing GHG emissions from transportation sources: 1) improve system and operation efficiencies, 2) reduce growth of vehicle miles traveled (VMT) 3) transition to lower GHG fuels and 4) improve vehicle technologies. To be most effective all four should be pursued collectively. The following regulatory setting section outlines state and federal efforts to comprehensively reduce GHG emissions from transportation sources.

Regulatory Setting

With the passage of several pieces of legislation including State Senate and Assembly Bills and Executive Orders, California launched an innovative and pro-active approach to dealing with greenhouse gas emissions and climate change at the state level.

¹ http://climatechange.transportation.org/ghg_mitigation/

Assembly Bill 1493 (AB 1493), Pavley, Vehicular Emissions: Greenhouse Gases (AB 1493), 2002: Requires the California Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck greenhouse gas emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year. In June 2009, the U.S. Environmental Protection Agency (U.S. EPA) Administrator granted a Clean Air Act waiver of preemption to California. This waiver allowed California to implement its own GHG emission standards for motor vehicles beginning with model year 2009. California agencies will be working with Federal agencies to conduct joint rulemaking to reduce GHG emissions for passenger cars model years 2017-2025.

Executive Order S-3-05: (signed on June 1, 2005, by Governor Arnold Schwarzenegger) the goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

AB32 (AB 32), the Global Warming Solutions Act of 2006: AB 32 sets the same overall GHG emissions reduction goals as outlined in Executive Order S-3-05, while further mandating that California Air Resources Board (CARB) create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the State's Climate Action Team.

Executive Order S-01-07: Governor Schwarzenegger set forth the low carbon fuel standard for California. Under this Executive Order, the carbon intensity of California's transportation fuels is to be reduced by at least ten percent by 2020.

Senate Bill 97 (Chapter 185, 2007): required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the State CEQA Guidelines for addressing greenhouse gas emissions. The Amendments became effective on March 18, 2010.

Caltrans Director's Policy 30 (DP-30) Climate Change (approved June 22, 2012): is intended to establish a Department policy that will ensure coordinated efforts to incorporate climate change into Departmental decisions and activities. This policy contributes to the Department's stewardship goal to preserve and enhance California's resources and assets.

- 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?*

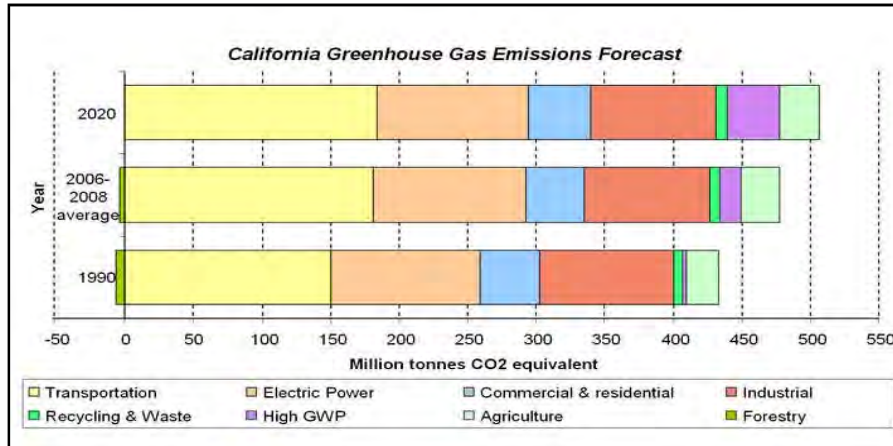
An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of GHG.² In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable." See California Environmental Quality Act (CEQA) Guidelines sections 15064(h)(1) and 15130. To make this determination the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects in order to make this determination is a difficult if not impossible task.

The Scoping Plan required by Assembly Bill 32 contains the main strategies California will use to reduce GHG. As part of its supporting documentation for the Draft Scoping Plan, the California Air

² This approach is supported by the AEP: *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the SCAQMD (Chapter 6: : The CEQA Guide, April 2011) and the US Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

Resources Board (ARB) released the GHG inventory for California (Forecast last updated: 28 October 2010). The forecast is an estimate of the emissions expected to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. The base year used for forecasting emissions is the average of statewide emissions in the GHG inventory for 2006, 2007, and 2008.

**FIGURE VII-1
California Greenhouse Gas Forecast**



Source: <http://www.arb.ca.gov/cc/inventory/data/forecast.htm>

Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California’s GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation, the Department has created and is implementing the Climate Action Program at Caltrans that was published in December 2006 (see Climate Action Program at Caltrans (December 2006)).³

Construction Emissions

The impact analysis in this section calculates the quantity of GHGs that would be emitted during project construction.

Project construction activities are estimated to occur over a 12-month period, and the resulting exhaust emissions from off-road equipment, on-road trucking, and construction worker commute traffic during this period were quantified.

Worst case construction emissions were assumed to occur in a single year where activities overlap. The URBEMIS2007 and EMFAC computer model predicts the following annual CO₂ emissions from the total of project activities:

Trackbed Preparation	-	252 tons/yr
Bridge Construction	-	435 tons/yr
Turn-Out Pad	-	85 tons/yr
Track Installation	-	84 tons/yr
Total	-	856 short tons/yr = 778 metric tons

³ Caltrans Climate Action Program is located at the following web address: http://www.dot.ca.gov/hq/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf

Equipment exhaust also contains small amounts of methane and nitric oxides which are also GHGs. Non-CO₂ GHG emissions represent approximately a one percent increase in CO₂-equivalent emissions from diesel equipment exhaust.

778 metric tons CO₂= 785 tons CO₂(e)

For the entire construction duration, 785 metric tons of CO₂(e) emissions would be generated. If the total project construction GHG burden of 785 tons/year were to occur in a single year as a worst case scenario, emissions would be less than the operational activity threshold.

BMPs could include, but are not limited to: using alternative fueled (e.g. biodiesel, electric) construction vehicles/equipment of at least 15 percent of the fleet; using at least 10 percent local building materials; and recycling or reusing at least 50 percent of construction waste or demolition materials.

Operational Emissions

The proposed project is designed to reduce overall air emissions and enhance goods movement by train from the Port of Oakland to the east. The proposed project will reduce emissions by eliminating 10 daily trips from Stege to BNSF's Richmond Yard, which equals about 60 miles of train operations per day. In addition, the project will reduce emissions from vehicles that currently have to idle while these long trains pass through nine at-grade crossings in Richmond. Based on these findings, the proposed project is not forecast to generate additional greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment or cause any substantial conflict with plans or policies for reducing the emissions of greenhouse gases.

AB 32 Compliance

The Department continues to be actively involved on the Governor's Climate Action Team as ARB works to implement the Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. Many of the strategies Caltrans is using to help meet the targets in AB 32 come from the California Strategic Growth Plan, which is updated each year. Former Governor Arnold Schwarzenegger's Strategic Growth Plan calls for a \$222 billion infrastructure improvement program to fortify the state's transportation system, education, housing, and waterways, including \$100.7 billion in transportation funding during the next decade. The Strategic Growth Plan targets a significant decrease in traffic congestion below today's level and a corresponding reduction in GHG emissions. The Strategic Growth Plan proposes to do this while accommodating growth in population and the economy. A suite of investment options has been created that combined together are expected to reduce congestion. The Strategic Growth Plan relies on a complete systems approach to attain CO₂ reduction goals: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements as depicted in Figure VII-2, The Mobility Pyramid.

FIGURE VII-2
Mobility Pyramid



The Department is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high density housing along transit corridors. The Department is working closely with local jurisdictions on planning activities; however, the Department does not have local land use planning authority. The Department is also supporting efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; the Department is

doing this by supporting on-going research efforts at universities, by supporting legislative efforts to increase fuel economy, and by its participation on the Climate Action Team. It is important to note, however, that the control of the fuel economy standards is held by U.S. EPA and ARB. Lastly, the use of alternative fuels is also being considered; the Department is participating in funding for alternative fuel research at the UC Davis.

Table VII-1 summarizes the Department and statewide efforts that the Department is implementing in order to reduce GHG emissions. More detailed information about each strategy is included in the Climate Action Program at Caltrans (December 2006).

**Table VII-1
CLIMATE CHANGE / CO2 REDUCTION STRATEGIES**

Strategy	Program	Partnership		Method/Process	Estimated CO ₂ Savings (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local Governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	.975	7.8
Operational Improvements & Intelligent Trans. System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	.07	2.17
Mainstream Energy & GHG into Plans and Projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational & Information Program	Office of Policy Analysis & Research	Interdepartmental, CalEPA, CARB, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening & Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement B20 B100	.0045	.0065 .045 .0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	.117	.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5 % limestone cement mix 25% fly ash cement mix > 50% fly ash/slag mix	1.2 .36	4.2 3.6
Goods Movement	Office of Goods Movement	Cal EPA, CARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.18

The following measures will also be included in the project to reduce the GHG emissions and potential climate change impacts from the project:

According to the Department's Standard Specifications, the contractor must comply with all local Air Pollution Control District's rules, ordinances, and regulations in regards to air quality restrictions. As noted under the Air Quality discussion, Section III, all BMPs applicable to the proposed project will be implemented. To minimize CO₂ and NO₂ emissions from construction equipment, all equipment larger than a pick-up truck and all off-road equipment will be required to shut off motors and limit idling to a maximum of five minutes, which is consistent with BAAPCD GHG emission reduction objectives.

Adaptation Strategies

"Adaptation strategies" refer to how the Department and others can plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damage to roadbeds from longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the White House Council on Environmental Quality (CEQ), the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), released its interagency report on October 14, 2010 outlining recommendations to President Obama for how Federal Agency policies and programs can better prepare the U.S. to respond to the impacts of climate change. The Progress Report of the Interagency Climate Change Adaptation Task Force recommends that the federal government implement actions to expand and strengthen the nation's capacity to better understand, prepare for, and respond to climate change.

Climate change adaption must also involve the natural environment as well. Efforts are underway on a statewide-level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts will help California agencies plan and implement mitigation strategies for programs and projects.

On November 14, 2008, former Governor Arnold Schwarzenegger signed EO S-13-08 which directed a number of state agencies to address California's vulnerability to sea level rise caused by climate change. This EO set in motion several agencies and actions to address the concern of sea level rise.

The California Natural Resources Agency (Resources Agency) was directed to coordinate with local, regional, state and federal public and private entities to develop. The California Climate Adaptation Strategy (Dec 2009)⁴, which summarizes the best known science on climate change impacts to California, assesses California's vulnerability to the identified impacts, and then outlines solutions that can be implemented within and across state agencies to promote resiliency.

The strategy outline is in direct response to EO S-13-08 that specifically asked the Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. Numerous other state agencies were involved in the creation of the Adaptation Strategy document, including the California Environmental Protection Agency; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture. The document is broken down into strategies for different sectors that include: Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. As data continues to be developed and collected, the state's adaptation strategy will be updated to reflect current findings.

⁴ <http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF>

The Resources Agency was also directed to request the National Academy of Science to prepare a Sea Level Rise Assessment Report by December 2010⁵ to advise how California should plan for future sea level rise. The report is to include:

- Relative sea level rise projections for California, Oregon and Washington taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates.
- The range of uncertainty in selected sea level rise projections.
- A synthesis of existing information on projected sea level rise impacts to state infrastructure (such as roads, public facilities and beaches), natural areas, and coastal and marine ecosystems.
- A discussion of future research needs regarding sea level rise.

Prior to the release of the final Sea Level Rise Assessment Report, all state agencies that are planning to construct projects in areas vulnerable to future sea level rise were directed to consider a range of sea level rise scenarios for the years 2050 and 2100 in order to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. Sea level rise estimates should also be used in conjunction with information regarding local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data

Interim guidance has been released by The Coastal Ocean Climate Action Team (CO-CAT) as well as the Department as a method to initiate action and discussion of potential risks to the states infrastructure due to projected sea level rise.

All projects that have filed a Notice of Preparation as of the date of EO S-13-08, and/or are programmed for construction funding from 2008 through 2013, or are routine maintenance projects may, but are not required to, consider these planning guidelines. A Notice of Preparation was not filed, but the project was programmed in the local Transportation Improvement Program (TIP) document and incorporated into the Federal Transportation Improvement Program by Caltrans. The project is programmed for construction in the 2012/2013 fiscal year.

Executive Order S-13-08 also directed the Business, Transportation, and Housing Agency to prepare a report to assess vulnerability of transportation systems to sea level rise affecting safety, maintenance and operational improvements of the system, and economy of the state. The Department continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Currently, the Department is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea level rise and other climate change effects, the Department has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, the Department will be able review its current design standards to determine what changes, if any, may be warranted in order to protect the transportation system from sea level rise.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. The Department is an active participant in the efforts being conducted in response to EO S-13-08 and is mobilizing to be able to respond to the National Academy of Science Sea Level Rise Assessment Report.

⁵ Pre-publication copies of the report, *Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future*, were made available from the National Academies Press on June 22, 2012. For more information, please see http://www.nap.edu/catalog.php?record_id=13389.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?				X
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?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
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?			X	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
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?				X

SUBSTANTIATION: A detailed Phase I examination of the proposed Richmond Rail Connector alignment has been compiled to provide data on historic contamination of the alignment. This document is titled "Phase I Environmental Site Assessment BNSF Railway Proposed Richmond Rail Connector Richmond Contra Costa County, California." This document was updated in January 2012.

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

No Impact – The proposed project will not change or modify the current transport of hazardous materials through this corridor by rail. Nor will it create a significant hazard to the public or environment through use or disposal of hazardous materials within the project area in the future.

BNSF and UPRR maintain their own internal teams to manage hazardous materials and wastes and to respond to train accidents that result in the spill of hazardous or toxic materials into the environment along its rail corridors. Management of hazardous and toxic materials being shipped by rail includes maintaining records of such materials being shipped on each train and standard response procedures and trained personnel to deal with accidental spills when they occur.

Based on the above analysis this project will not create any new routine transport of hazardous materials, as the transport of such materials already exists. Therefore, the proposed project will not alter the existing rail transport environment in any significant manner that could create a new significant hazard to the public or the environment.

- 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?*

Less Than Significant Impact – Inherent to the use of hazardous materials is the risk of an accidental release. Because of this risk, federal, state and local agencies have established regulations to minimize the likelihood of such occurrences. During construction activities in support of the proposed project, fuels, oils, solvents, and other petroleum materials classified as "hazardous" will be used to support these operations.

There are two approaches to managing hazards: (1) minimize the potential release of hazardous or toxic substances into the environment; and (2) if released, have the resources and techniques on hand to respond to an accidental release, including controlling a release, managing any adverse exposure from a release; cleaning up (remediating) a release; and properly disposing of the material contaminated by the release.

Avoidance, Minimization and Mitigation Measures

Avoidance and minimization measures designed to reduce, control or remediate potential accidental releases must be implemented to prevent the creation of new contaminated areas that may require remediation in the future and to minimize exposure of humans to public health risks from accidental releases. By implementing the following minimization measure, potentially substantial adverse environmental impacts from accidental releases associated with construction of the proposed project can be reduced to a less than significant level.

VIII-1 *All spills or leakage of petroleum products during construction activities will be remediated in compliance with applicable state and local regulations regarding cleanup and disposal of the contaminant released. The contaminated waste will be collected and disposed of at an appropriately licensed disposal or treatment facility. Before determining that an area contaminated as a result of an accidental release is fully remediated, specific thresholds of acceptable clean-up shall be established and sufficient samples shall be taken within the contaminated area to verify that these clean-up thresholds have been met.*

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

Less Than Significant Impact – The following two schools are located within one-quarter of a mile of the project alignment:

- Lake Elementary School, 2700 11th Street, San Pablo
- Bayview Elementary School, 3001 16th St., San Pablo

Since the proposed interconnection track project provides for more efficient flow of rail traffic the potential for rail accidents will be reduced. BNSF and UPRR's emergency response capabilities will remain the same and the ability to respond to accidents will remain the same after completion of the project as before. Therefore, the net effect of the proposed project is to reduce the potential for

accidents relative to the current environmental setting and provide a comparable level of response capability should an accidental release of hazardous or toxic substances occur during future operations.

With implementation of measures VIII-1 through VIII-4, the short-term construction activities or the long-term operations activities attributable to the proposed project will not generate substantial quantities of hazardous emissions or require the handling of acutely hazardous materials, substances or wastes near an existing or proposed school. Since the rail corridor is already in operation, the addition of the interconnection track would not result in an additional hazard for people attending the existing schools. Note that by reducing overall hazards from rail operations as outlined above, potential exposure to schools from accidental release of hazardous or toxic materials is reduced overall relative to the existing condition.

- 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?*

Less Than Significant Impact –The Richmond Rail Connector is a proposed new rail line and track upgrade, which begins within the BNSF right-of-way, south of Richmond Parkway, and ends within the UPRR right-of-way at Parr Boulevard. The existing rail lines have been present since at least 1915, the earliest historical record reviewed. In between these two existing rail lines, the proposed rail connector crosses the vacant LJR Property, Rheem Creek and a portion of the North Richmond commercial/industrial property. The LJR has always been vacant land; however, recent grading activities have been conducted at the property, resulting in the placement of fill materials on the order of 8 feet thick, within much of the proposed railway alignment.

The North Richmond property, at 2801 Giant Road (the former Cooper Chemical Company brownfield site), has been commercial/industrial since 1946. Past environmental practices at this property have lead to localized soil and groundwater contamination. The contamination at this property was addressed by placing and confining the contaminated soil into a deed-restricted area, called “Site R” and covering it with a 1-foot cap of soil. The proposed rail connector route passes over a portion of the “Site R” deed restricted property at 2801 Giant Road. Prior to a change in land use or ownership, the California Department of Toxic Substances Control (DTSC) will need to be contacted for approval of the proposed rail connector plans where it crosses over the deed-restricted property. Groundwater monitoring wells within the proposed rail connector route, associated with “Site R” and on adjacent properties, will also have to be addressed. The Phase 1 site assessment recommends a comprehensive survey be conducted to determine if monitoring wells are within the proposed rail alignment and the amount of grading or ground disturbance that will be required within the “Site R” deed-restricted property. In addition, before acquiring any deed restricted property, BNSF should conduct its own investigation (Health Hazard Evaluation) for potential health hazards during grading and construction.

The Phase 1 site assessment revealed recognized environmental conditions associated with some of the properties along the proposed alignment. See Table VIII-1 below. The past releases metals associated with these properties have been addressed and there are no current reported releases; therefore, no adverse environmental conditions should be encountered along the proposed alignment. However, that portion of the proposed alignment that crosses over “Site R” will need the approval of the DTSC prior to any change in ownership or current land use. Any existing groundwater wells within the proposed alignment will also need to be addressed, i.e., possibly abandoned, relocated, or replaced.

**Table VIII-1
Hazardous Waste History**

Facility Name, Address, Direction Relative to the Site	Listed Database(s)	Current Agency Status	Recognized Environmental Condition (REC) Potential
Cooper Chemical, 2801 Giant Road (Within proposed alignment)	Cortese	Soil and groundwater contamination from heavy metals and petroleum hydrocarbons. Capped with 1 foot of soil. Land Use Restrictions, Certified Operations & Maintenance (O&M)	Low , depending on proposed grading
	CA Bond Exp. Plan	RI/FS investigation completed by Responsible Party	See above
	Response	Certified O&M, 5-year review approved, Continue Monitoring of groundwater annually and quarterly site inspections	See above
	Deed	Certified O&M	See above
	EMI	Bay Area AQMD, Listing for Total Hydrocarbon Gases, 0.015 ton/year (2005)	Low , no reported violations
	Envirostor	Certified O&M, Prohibited uses, notify DTSC with changes in use, property owner, prior to development	Low , depending on proposed grading
	Hist. Cal-Sites	Certified O&M, All planned activities implemented, Remediation continues	See above
Triple A Machine, 2801 Giant Road (Adjacent to the east)	HAZNET	Hazardous Waste Generator: waste oil and mixed oil, unspecified oil-containing waste, unspecified organic liquid waste, liquid waste with pH less than 2 with metals	Low , based on no reported violations
Earthquake Protection Systems, 2801 Giant Road (Adjacent to the east)	FINDS	National Emissions Inventory Database, No details were provided	Low , based on no reported violations
	EMI	EMI, Bay Area AQMD, Listing for Total Hydrocarbon Gases, 1 ton/year (2002-2003)	Low , based on no reported violations
Golden State Steel and Stair, Inc., 2801 Giant Road (Adjacent to the east)	Contra Costa County Site List	Hazardous Materials Management Program (HMMP), regulates businesses that store 55 gals. of hazardous materials liquid, 500 pounds of hazardous materials solid, or 200 cubic feet of hazardous materials as a gas, No reported violations	Low , based on no reported violations
Western Intermodal Services, 2801 Giant Road (Adjacent to the east)	Contra Costa County Site List	Same as above	Low , based on no reported violations

Facility Name, Address, Direction Relative to the Site	Listed Database(s)	Current Agency Status	Recognized Environmental Condition (REC) Potential
Richmond Machine and Fabricating, 2801 Giant Road (Adjacent to the east)	ERNS	Emergency Response and Notification System, for 6 gallon spill of anhydrous ammonia from a valve at an aboveground tank in 1991	Low , spill to soil was cleaned up
	HAZNET	Unspecified oil-containing waste	Low , based on no reported violations
Utility Aerial Inc., 2801 Giant Road (Adjacent to the east)	Contra Costa County Site List	HMMP and Aboveground Tank, No reported violations	Low , based on no reported violations
	HAZNET	Other organic solids, waste oil, and mixed oil.	See above
	Historical Cortese	No data provided	See above
RBJ Steel Fabricating, Inc., 2801 Giant Road (Adjacent to the east)	Contra Costa County Site List	HMMP, No reported violations	Low , based on no reported violations
Michael Bondi Metal Design, Inc., 2801 Giant Road (Adjacent to the east)	Contra Costa County Site List	HMMP, No reported violations	Low , based on no reported violations
North Richmond Properties, Inc., 2801 Giant Road (Adjacent to the east)	FINDS	National Emissions Inventory Database, No details were provided	Low , based on no reported violations
Weigmann & Rose International, 2801 Giant Road (Adjacent to the east)	FINDS	Other pertinent environmental activity identified at site	Low , based on lack of data
	RCRA-NonGen	Hazardous materials handler, Generator violations 1986, Achieved compliance 1991	Low , based on achieving compliance
Unspecified Facility Name, 2801 Giant Road (Adjacent to the east)	CHMIRS	2002, Two 2.5-inch natural gas lines were hit during an excavation in the road, and were repaired	None , based on incident
Lazy J Ranch, 3002 Giant Road (alignment crosses over a portion of the property)	SLIC	RWQCB Spills, Leaks, Investigations, and Cleanups, site is a cleanup program site	Low , based on completed cleanup
T-Mobile West Corporation, 2777 Giant Road (Adjacent to the south and east)	Contra Costa County Site List	HMMP, No reported violations	Low , based on no reported violations

Facility Name, Address, Direction Relative to the Site	Listed Database(s)	Current Agency Status	Recognized Environmental Condition (REC) Potential
Burlin Company, Inc., 2775 Giant Road (Adjacent to the south and east)	RCRA-SQG	Small quantity generator of solvents, more than 100 Kg and less than 1,000 Kg per month of hazardous waste	Low , based on no reported violations
	FINDS	California Hazardous Waste tracking System, No data provided	See above
	HAZNET	Unspecified aqueous solution	See above
	Contra Costa County Site List	HMMP, No reported violations	See above
	SLIC	San Francisco Bay RWQCB Spills, Leaks, Investigations, and Cleanups, site was a cleanup program site, Cleanup completed in 2006	Low , based on case completion
	CA WDS	The facility is listed as industrial with continuous or seasonal discharge that is a minor threat to water quality, under Waste Discharge Requirements	Low , based on waste discharge and NPDES requirements
American Standard, Inc., 3002 Giant Road (across Giant Road to the east)	CERC- NFRAP	Preliminary Assessment completed 1987, No further remedial action planned	Low , no further remedial action status
	Cortese	1997, Certified O&M, land use restrictions	Low , based on completed cleanup
	Ca Bond Exp. Plan	Heavy metals discovered at the site, Remedial plan submitted	Low , based on completed cleanup
	Response	5 underground storage tanks (USTs) were discovered and cleanup completed, except under buildings, Certified O&M, land use restrictions in place	Low , based on completed cleanup
	Deed	Land use restrictions	See Above
	Envirostor	Certified O&M, land use restrictions in place	See Above
	Hist. Cal-sites	Certified O&M, land use restrictions in place	See Above
Giant Trade Center, 3002 Giant Road (across Giant Road to the east)	HAZNET	Waste oil and mixed oil, other empty containers (30 gallons or more), off specification, aged or surplus organics	Low , based on completed cleanup
	HIST. Cortese	No data provided	See above

Facility Name, Address, Direction Relative to the Site	Listed Database(s)	Current Agency Status	Recognized Environmental Condition (REC) Potential
	Contra Costa County Site List	Listed in UST program, Inactive in 1987	See above
Broadway Project, American Standard, 3002 Giant Road (across Giant Road to the east)	HAZNET	Disposal of off specification, aged, or surplus organics	Low , based on no reported violations
	SLIC	UST closure, Diesel soil contamination discovered, Case still open	Low , based on the soil only contamination and distance from alignment
FMC Corporation - Richmond, 855 Parr Boulevard (Adjacent to the east)	Cortese	Land Use Restrictions, Certified Operations & Maintenance (O&M)	Low , remedial work completed
	Response	Site Mitigation and Brownfields Reuse Program (SMBRP), Soil and groundwater contamination from pesticides and other chemicals, Capped with asphalt, Certified Operations & Maintenance (O&M)	Low , See above
	DEED	Certified Operations & Maintenance (O&M)	Low , See above
	EMI	3 tons/year of organic hydrocarbon gases emitted (1995 through 2002)	Low , No reported violations
	Envirostor	Land Use Restrictions, Certified Operations & Maintenance (O&M)	Low , remedial work completed
	Hist. CAL-Sites	Deed restricted, Certified Operations & Maintenance (O&M)	See above
Crown Cork & Seal, 601 Parr Boulevard (adjacent to the west)	LUST	Leaking Underground Storage tank. Gasoline leak, site cleanup and case closed	Low , based on cased closed status
	CA FID UST	No data reported	See above
	Contra Costa County Site List	In UST program, Inactive in 1996	See above
	NPDES	Construction permit, No additional data supplied	Low , No violations
	Sweeps UST	Historical listing of 3 USTs, two 8,000-gallon and one 3,000-gallon	Low , Case closed status
	Hist. Cortese	No data provided	See above

Avoidance, Minimization and Mitigation Measures

In addition to implementing the construction plan and to prevent adverse effects from such exposure of the contaminated area beneath the cap, the following measures must be implemented. These measures include close coordination with the State Department of Toxic Substances Control under an approved "Grading Safety Plan"; investigation of potential contamination along the connector track alignment; monitoring by a qualified professional during any ground excavation activities; possible removal and transport of contaminated material to an appropriately licensed facility for final treatment and disposal; and implementation of any protective measures for employees during construction. With implementation of these avoidance and minimization measures the known contamination along the alignment can be properly managed to prevent any substantial adverse impacts to humans or the environment.

VIII-2 *BNSF shall implement the Grading Safety Plan prepared for this project as approved by the Department of Toxic Substances Control. The performance standard for this study and remediation effort shall be to protect both humans and the environment from significant exposure to contamination during remediation or construction activities that could harm either people or the environment.*

VIII-3 *All contaminated material encountered within the Richmond Rail Connector segment that exceeds regulatory standards shall be capped as in the present circumstance or identified, collected and delivered to a licensed treatment, disposal or recycling facility that has the appropriate systems to manage the contaminated material without significant impact on the environment.*

VIII-4 *BNSF shall identify a qualified professional industrial hygiene firm and have a professional available to monitor all construction and remediation activities within the alignment of the connector track. At the end of construction a report shall be submitted to the local and state regulatory agencies that summarizes all remediation activities and residual conditions at the completion of connector track installation. This report shall document the findings and basis for determining that there is no residual hazard remaining at the completion of construction.*

- e. *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?*
- f. *For a project 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 – The proposed project is not located adjacent to or in the vicinity of any public or private airports. Therefore, no humans can be exposed to airport safety hazards.

- g. *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

Less Than Significant Impact – The existing rail operations place a minimal demand on emergency services. The proposed project may cause short-term adverse impacts on emergency services provided by fire, ambulance and law enforcement services along the rail corridor. Closure of or construction within existing roads for certain periods is not anticipated, but if it must occur, such closure would require development of alternative emergency response routes.

Over the long term, the installation of the interconnection track and associated rail improvements will facilitate better emergency response capabilities. The connector track will facilitate better movement of trains along the corridor, thus reducing the amount of time that a train spends at any one point,

such as at an existing road that crosses the tracks at grade. Future access will be equal to or better than the existing condition.

Avoidance, Minimization and Mitigation Measures

No mitigation is required for the long-term emergency access and response within the City of Richmond. Refer to Measures XVI-1 through XVI-3 for ensuring adequate emergency response during construction

- g. 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 proposed project is not located in or near a wildland fire area.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
IX. HYDROLOGY AND WATER QUALITY: Would the project:				
a) Violate any water quality standards or waste discharge requirements?			X	
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)?			X	
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 onsite or offsite?			X	
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 onsite or offsite?			X	
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?			X	
f) Otherwise substantially degrade water quality?			X	
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?				X
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				X
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X
j) Inundation by seiche, tsunami, or mudflow?				X

SUBSTANTIATION: Contra Costa County General Plan January 2005: Volumes One and Two; Richmond General Plan August 1994; California Regional Water Quality Control Board, San Francisco Bay Region, Water Quality Control Plan (Basin Plan), 2010; and project engineering plans and construction schedule, AEI-CASC Consulting Memorandum of Recommended Best Management Practices for the Richmond Connector Project.

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

Less Than Significant Impact – The proposed project is the construction of a connector track and associated facilities. The project will not generate any wastewater discharges and has no potential to violate any water quality standards or waste discharge requirements related to such discharges. The only potential project-related source of water quality degradation is surface runoff from the project alignment both during and after construction.

Construction activities have a potential to cause erosion, sedimentation and accidental release of pollutants that could violate water quality standards. A Storm Water Pollution Prevention Plan (SWPPP) will be prepared for all project construction activities. With the implementation of BMPs outlined in the SWPPP, the potential for adverse water quality impacts due to the transport of hazardous materials, or flow of erosion or sedimentation to receiving waters can be controlled to a less than substantial level.

The California State Water Resources Control Board (SWRCB) has established a statewide General Construction Permit applicable to the project. Under this general permit, it is the responsibility of the project proponent to submit a Notice of Intent to the SWRCB, prepare and implement the SWPPP, and revise the SWPPP as necessary during construction as runoff conditions change during the rainy period of the year. Copies of the SWPPP will be made available to the San Francisco Bay Regional Water Quality Control Board (Region 2 RWQCB). The BMPs include both structural and non-structural measures, where applicable, and the assignment of long-term maintenance responsibilities. The RWQCB also has responsibility for overseeing compliance with the General Construction Permit. These agencies oversee the implementation of the SWPPP and ensure that the BMPs are fully implemented and effective through routine monitoring and enforcement actions.

Development of the proposed project will not alter the permanent activities associated with the project area (rail and surface transportation activities), but it will alter their configuration. The RWQCB and the Contra Costa County Flood Control and Water Conservation District have established municipal stormwater discharge standards for surface runoff that apply along the project alignment and the stormwater discharged from the modified track alignment must meet these discharge standards to ensure that significant water quality degradation will not occur. Avoidance and minimization measures are provided below to ensure that future surface water runoff from the project alignment does not cause substantial water quality degradation from stormwater discharged by BNSF and UPRR facilities over the long-term.

Avoidance, Minimization and Mitigation Measures

With implementation of the following avoidance and minimization measures, the proposed project is not forecast to cause the violation of any water quality standards or waste discharge requirements.

IX-1 A Storm Water Pollution Prevention Plan (SWPPP) will be prepared for the project. The best management practices (BMPs) identified in the SWPPP will be used to minimize the potential for accidental releases of any chemicals or materials on the site that could degrade water quality, including solid waste, and require that any spill be cleaned-up, contaminated material properly disposed of and the site returned to pre-discharge condition, or in full compliance with regulatory limits for the discharged material. The portion of the SWPPP that addresses erosion and related sediment discharge shall specify that the measures shall achieve removal of sediment and other pollutants from disturbed sites to the maximum extent practicable.

IX-2 For long-term mitigation of site disturbances, all areas not covered by structures shall be covered with hardscape (concrete, asphalt, gravel, etc.) or areas re-seeded with native vegetation to minimize potential erosion within the alignment, particularly from concentrated flows (rills, gully, etc.) and sediment transport from the alignment will be minimal as part of future surface runoff.

- 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 Impact –During construction, it is estimated that between 5,000 to 10,000 gallons of water will be required per day to control the generation of fugitive dust. Assuming 180 days of ground-disturbing activities along the track alignment and 10,000 gallons of water used per day to control fugitive dust, including construction of the proposed Rheem Creek bridge, a total of 5.5 acre-feet of water could be consumed. Recycled water may be available along the alignment, which can eliminate any demand on local groundwater or other potable water supplies. The construction contract will require that recycled water is used where it is available. Based on the small volume of water and utilization of recycled water, where available, the impact on groundwater supplies is not forecast to be a substantial adverse impact. The project alignment does not lie over a Sole Source Aquifer as described in the Safe Drinking Water Act of 1974 (Public Law 93-523, 42 U.S.C. 300 et seq.).

Over the long-term, the preferred alternative will not create any demand for water resources because the alignment will be revegetated with local native plants that are adapted to the local climate. No irrigation is proposed for this segment of the alignment and no long-term adverse effect is forecast to result from implementing the preferred alternative.

IX-3 Where reclaimed water or non-potable water is reasonably available (short-haul trucking from a wastewater treatment plant that produces Title 22 Recycled Water), it shall be used in place of potable water for construction activities and for any areas permanently irrigated in the future along the new track alignment.

- 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 onsite or offsite?

Less Than Significant Impact – There are two drainage channels located within the project alignment. The primary channel is Rheem Creek, which upstream of the property consists of a concrete box channel. As the creek exits beneath Giant Road, the channel transitions to a confined, dirt channel that crosses the proposed track alignment from east to west. This channel is highly disturbed and for a short period, an at-grade crossing will be installed to allow the fill material required for the high fill to be delivered along the proposed interconnect track alignment. The channel will then be returned to its current configuration. A new bridge will clear span the Rheem Creek channel and it will be installed in a manner to pass the 100-year flow elevation with adequate freeboard (usually about two feet). There will be no permanent modification to this regional drainage facility and it will continue to convey flows in the same manner as it currently does.

The second channel is located on the east side of the UPRR tracks. This channel appears to have evolved in response to the UPRR tracks terminating flows to the west and it carries flows from the properties between the BNSF and UPRR tracks from south to north and thence into the Rheem Creek channel. For a portion of its distance this channel will be replaced by a culvert that will transition back into the natural channel to continue delivering onsite flows to Rheem Creek. Flows from the project alignment will continue to flow across the property and deliver stormwater runoff to this channel. The contributing drainage area to runoff on the project site is less than 20 acres, which substantially limits the volume of runoff that drains to the swale next to the UPRR tracks.

- 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 onsite or offsite?*

Less Than Significant Impact – Due to the shallow slope of the property plus the SWPPP and permanent Best Management Practices, the continuation of drainage across the property is not forecast to cause a significant increase in runoff or erosion. The project alignment is topographically compatible with all of the proposed project facilities outlined in the Project Description. The topography of the proposed track alignment is essentially flat and drainage from the BNSF and UPRR rights-of-way are already established. The new track will occupy a portion of the existing rail rights-of-way as well as industrial properties to be acquired for the proposed alignment. The project is not forecast to substantially increase runoff or cause any major modifications in discharge of runoff from the existing rights-of-way or acquired lands. This is because the new track will continue to absorb rainfall similar to the disturbed soil along the proposed alignment.

Local effects on drainage would result primarily from the construction activities associated with the proposed action, such as removal of vegetative cover, grading, excavating, and re-contouring the soils. However, no substantial or long-term adverse effects to surface or groundwater hydrology is anticipated to result from installing and using the connector track. Permeability will remain relatively the same where the new track replaces the compacted ground within the BNSF and UPRR rights-of-way. The new connector track will continue to discharge runoff to the same regional drainage system that presently serves the project alignment. Consequently, no substantial adverse effect to downstream surface water hydrology is anticipated.

- 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 Impact – Refer to the preceding discussion under issues a, c and d which addresses future stormwater runoff and water quality issues.

- f. *Otherwise substantially degrade water quality?*

Less Than Significant Impact – As noted above, the only potential source of pollution that could degrade water quality is stormwater runoff during construction and after the new connector track is completed. No other wastewater will be generated by the project during the short- or long-term that could substantially degrade water quality. Best Management Practices are identified to control water quality of the surface runoff during construction and during future operations.

- 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?*

No Impact – This project does not include any housing or other buildings that would be placed within the 100-year flood hazard area. All flows on the project site flow to the west, either within Rheem Creek flood control channel or to the drainage swale adjacent to the UPRR tracks. Future flows will be directed in the same direction and have no potential to expose the facilities to the south of the project area or homes to the east (across Giant Road) to any new flood hazards. Therefore, no adverse exposure of habitable structures will occur as a result of implementing the proposed project. The Flood Insurance Rate Maps (FIRM) from the Federal Emergency Management Agency for the project site identify a limited 100-year flood hazard area along the Rheem Creek channel. Please see Section 6 for the flood maps.

- h. *Place within a 100-year flood hazard area structures which would impede or redirect flood flows?*

No Impact – The only facility that will be placed within this hazard area is the new bridge across the channel. The new bridge has been designed so that it will not impede or redirect the 100-year flood flows along Rheem Creek channel.

The County Flood Damage Prevention Ordinance contains specific requirements for development in various flood zones designated on the FIRM maps. According to the FIRMs of the project area, about one-half of the interconnect track alignment is located within the 100-year floodplain, but as stated above, the Rheem Creek channel will be bridged and the remainder of the alignment can be elevated above the 1-2 foot flood elevation adjacent to Union Pacific track along the southern portion of the interconnect track alignment.

Therefore, the proposed project has no potential to impede or redirect such flood flows.

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

No Impact – There are no dams or levees upstream of the proposed project, so no potential exists to expose people or structures to significant flood hazards, include loss, injury or death.

- j. *Inundation by seiche, tsunami, or mudflow?*

No Impact – Based on all geologic studies and maps for the region referenced in Richmond’s General Plan, the location of the BNSF and UPRR alignments are sufficiently distant from surface water (approximately one-half mile) such that seiche, tsunami or mudflow are unlikely to affect the new connector track.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
X. LAND USE AND PLANNING: Would the project:				
a) Physically divide an established community?				X
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?				X
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				X

SUBSTANTIATION: Contra Costa County General Plan January 2005: Volumes One and Two; and Richmond General Plan August 1994

- a-c. *No Impact* – The property is designated for industrial use in the Contra Costa County and Richmond General Plans and Zoning Codes. Both General Plans acknowledge the BNSF and UPRR rail corridors through their jurisdictions and the need for alternatives to on-road vehicular transportation systems. The proposed project is an industrial-related project that is consistent with the land use designations and that will not further divide the existing community. The project alignment is not located within an area encompassed by habitat conservation or natural community conservation plans. The nearest such planning area is the East Contra Costa Habitat Conservation Plan/Natural Community Conservation Plan, but it does not encompass the project area. Therefore, this project has no potential to conflict with any such plan.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
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?				X
b) 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?				X

a&b. *No Impact* – The proposed project is not in an area with active mining operations. No known mineral resources are mapped within the project alignment.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XII. NOISE: Would the project result in:				
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?				X
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?				X
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				X
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X
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?				X

SUBSTANTIATION: The noise data referenced in this document is abstracted from a noise study of the project alignment, “Noise Impact Analysis Richmond Rail Connector Project, Richmond California (July 2012); the City of Richmond General Plan/General Plan EIR; and the Contra Costa General Plan/General Plan EIR.

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?

Less Than Significant Impact – There are several substantial existing primary sources of community noise within the county. These sources include traffic on major roadways and highways, railroad operations, airports, industrial activities, and the Camp Parks Reserve Forces Training Area near San Ramon.

Roadways

The FHWA Highway Traffic Noise Prediction Model (FHWA-RD-77-108) was used to develop Ldn contours for the State Highways and major county roadways in the project area of Contra Costa County. The FHWA Model is the analytical method presently favored for traffic noise prediction by most state and local agencies, including Caltrans. The FHWA Model is based upon reference energy emission levels for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver and the acoustical characteristics of the site. The FHWA Model was developed to predict hourly Leq values for free-flowing traffic conditions, and is generally considered to be accurate within 1.5 dBA. To predict Ldn values it is necessary to determine the hourly distribution of traffic for a typical 24-hour day and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

Roadways which produce noise within the project area consist of Richmond Parkway, Giant Road, and Parr Boulevard. According to the City of Richmond General Plan, Richmond Parkway is and will continue to be a predominant source of noise within the project area. According to the County's 2005 Noise Contour Maps for the project area, the 24-hour average noise level (DNL) along Richmond Parkway was measured at between 60 to 70 DNL in 2005. The County's General Plan indicates that future noise levels along Richmond Parkway will be approximately 72 DNL at 100 feet.

Railroads

Railroad operations in Contra Costa County consist of mainline operations on the BNSF railway line and on the UPRR railway line. In addition, the Bay Area Rapid Transit (BART) System, an electrically driven passenger line operates throughout the county; however, the BART system does not produce substantial noise levels. Noise levels from railroad operations within the project area were identified in the Contra Costa County General Plan and the City of Richmond General Plan.

Mainline operations on the BNSF railway in the project area traverse the City of Richmond. UPRR operations also traverse the project area within the City of Richmond and an unincorporated portion of the County. According to the City of Richmond General Plan, there was an average of 18 trains per week along the BNSF railway in 1990. In addition, there were an average of 12 UPRR trains and 10 Amtrak trains per week along the UPRR railway in 1990. Train speeds along both segments of rail range from 10 to 60 mph. Freight trains may occur at any time during the day or night, and passenger trains generally operate during the daytime (7:00 a.m. - 10:00 p.m.) hours. According to the County's General Plan, noise contours along the BNSF railway line were projected to be 73 DNL at 100 feet, while noise contours along the UPRR railway line were projected to be at 76 DNL at 100 feet within the project area.

In order to assess the potential effects from shifting an estimated ten BNSF intermodal freight trains from the BNSF track to the UPRR tracks between the proposed connector track and Stege, a noise study was prepared.

The Federal Transit Administration (FTA) has developed guidelines for noise/vibration impact assessments from heavy rail projects. In the absence of definitive guidance for general rail projects, the FTA's Transit Noise and Vibration Impact Assessment (May 2006) has been presumed applicable to the proposed project. Although the guidance is not specifically oriented to freight rail projects, the criteria are based on research about community response to noise and have been used to assess potential impacts for a number of rail projects.

Operational Noise: FTA guidelines define three classes of land uses where noise exposure should be evaluated. These are shown in Table XII-1 below along with the applicable noise metric for each category.

**Table XII-1
FTA LAND USE CATEGORIES AND NOISE METRICS**

Land Use Category	Noise Metric (dBA)	Description of Land Use Category
1	Outdoor Leq(h)^(a)	A tract of land where quiet is an essential element of their intended purpose. This category includes lands set aside for serenity and quiet and such land uses as outdoor amphitheaters and concert pavilions, as well as national historic landmarks with significant outdoor use. Also included are recording studios and concert halls.
2	Outdoor Ldn^(b)	Residences and buildings in which people sleep. This category includes homes, hospitals, and hotels, where a nighttime sensitivity to noise is assumed to be of utmost importance.
3	Outdoor Leq(h)^(a)	Institutional land uses with primarily daytime and evening use. This category includes schools, libraries, and churches, where it is important to avoid interference with such activities as speech, meditation, and concentration on reading material. Places for meditation or study associated with cemeteries, monuments, museums, campgrounds, and recreational facilities can also be considered to be in this category. Certain historical sites and parks are also included.

(a) Leq(h) = one-hour average (equivalent) sound level

(b) Ldn = day-night average noise level

The FTA Guidebook characterizes potential noise impacts as having no impact, moderate impact or severe impact. The severity with a proposed rail action depends on the existing noise exposure. In an existing very quiet environment, an increase of 10 decibels (dBA) or more would be considered a moderate impact and increases over 15 dB would be considered severe. As baseline levels increase, the project increment that would trigger a moderate or severe finding becomes progressively smaller. The following information is abstracted directly from this study.

The current railroad noise model supported by federal agencies is the “CREATE” model (HMMH, 2006). The model is a spreadsheet model that can accommodate eleven types of moving sources, eight types of stationary sources (cross-over’s, storage yards, and transit centers), four types of track conditions (joints, wheel flats, etc.) at any noise-sensitive receivers. The model contains reference noise data for every type of source along with adjustment factors for size, speed, duration or intervening barriers. This model was used to calculate existing train noise along the UPRR tracks and then run again for the added contribution from diverted BNSF freight trains.

Railroad activity levels (train speeds, number of engines/cars, horn use locations, etc.) were provided by UPRR and/or BNSF. Sometimes these inputs can vary substantially from one day to another or from one engineer to another. A series of noise measurements were therefore conducted at three residences along the UPRR tracks whose noise environment may be impacted by the increased freight train traffic. The purpose of these measurements was to establish a real-world baseline noise level for comparison with model predictions.

Measurements were made at three locations in the Shields-Reid neighborhood of Richmond that would be potentially impacted by the project. These locations were selected because they might be affected by both train movement and horn noise. Chesley Avenue is the only crossing along the UPRR tracks that is non-grade separated and has adjacent residences. Monitoring was conducted near the Chesley Mutual Housing complex and at the eastern dead ends of Alamo Avenue and Duboce Avenue with the UPRR tracks. Monitoring was conducted for 24+ hours on April 16-17, 2012. The results (hourly averages and instantaneous peaks) are shown in Table XII-2. Evidence of train activity was assumed manifested in peak noise levels over 80 dB at the Alamo Avenue monitor. The

data suggest that the existing UPRR tracks had some level of activity on 22 of 24 hours. The hours of 11-12 p.m. and 01-02 a.m. appeared to be the only hours without any track usage.

Inspection of the duration of each noise “pulse” is an indication of whether it was a long freight train or a short commuter rail. A few of the short pulses may be due to contamination from perhaps a dog barking, helicopter over flight or residential activity at the last house before the railroad tracks. The Alamo Avenue meter recorded 14 extended events and 54 short excursions above the normally quiet background. Of the 14 longest events, in 24-hours, nine would appear to have been freight movement by longer trains and five by either short freights or longer passenger trains such as Amtrak.

As noted below, measured noise levels were somewhat lower than those predicted by the currently accepted railroad noise model. This may be due to a combination of factors. Freight trains may be shorter, require fewer engines, travel slower on this segment than maximum speed, and shielding by the industrial building north of Chesley Avenue may reduce the field of view of noise generation. The difference between model and measurement results was used as a calibration factor to improve the analysis accuracy as shown on Table XII-2.

**Table XII-2
SHIELDS-REID NEIGHBORHOOD NOISE MONITORING (Leq/Lmax, in dBA)
April 16-17, 2012**

Time	Chesley Ave.	Alamo Ave.	Duboce Ave.
18:00-19:00	72/93	70/87	62/81
19:00-20:00	69/92	69/89	63/84
20:00-21:00	71/93	68/90	63/80
21:00-22:00	71/93	71/93	70/92
22:00-23:00	68/93	64/88	62/81
23:00-24:00	56/74	45/57	53/56
0:00-1:00	64/87	66/93	60/76
1:00-2:00	56/83	50/71	54/67
2:00-3:00	64/86	66/90	59/84
3:00-4:00	68/92	67/88	59/81
4:00-5:00	59/83	59/87	54/74
5:00-6:00	63/84	60/84	56/81
6:00-7:00	68/85	69/93	57/78
7:00-8:00	70/93	71/90	65/90
8:00-9:00	68/89	71/89	62/84
9:00-10:00	75/93	73/96	64/90
10:00-11:00	72/93	65/87	63/91
11:00-12:00	69/89	66/91	58/77
12:00-13:00	75/93	65/91	59/85
13:00-14:00	73/96	69/89	63/83
14:00-15:00	71/95	72/90	58/78
15:00-16:00	69/92	70/93	59/83
16:00-17:00	70/93	67/94	52/77
17:00-18:00	67/86	66/85	58/76
Peak Hour Leq	75	73	70
Ldn	73	72	66
Distance	60 feet	70 feet	300 feet

Use of train horns is required near at-grade crossings as a safety measure except with very limited exceptions. Train horn noise is a special condition that is not included in the CREATE model because it is a localized effect affecting only limited numbers of receivers near the crossing. Horns can, however, create noise levels exceeding the moving train contribution in close proximity to the

crossing. The Federal Railroad Administration (FRA) has supported the development of an At-Grade Crossing Noise Model whose results can be superimposed upon the CREATE output to generate a composite impact. The FRA model is based upon an assumed 104 dB maximum horn noise level at 100 feet, and adjusts that reference level for location, duration, surface conditions and possible shielding.

Train Traffic Input Data

Train activity information was obtained from UPRR for their existing trackage. A daily average of 2.4 BNSF freight trains was assumed to be potentially diverted. The various input parameters required for the CREATE and train horn models were as follows for an analysis reference distance of 50 feet from the equivalent source-receiver location:

UPRR Existing

10 freight trains (6 day, 4 night) [50 mph, 4 locomotives, 5,000 feet of cars]

40 passenger trains (30 day, 10 night) [50 mph, 1 locomotive, 5 cars]

BNSF Added by Proposed Project

2.4 freight trains (1.5 day, 0.9 night) [50 mph, 4 locomotives, 5,000 feet of cars]

The Federal Transit Administration has published a comprehensive guidebook on Transit Noise and Vibration (FTA-VA-90-1003-06) updated in May, 2006. The guidebook defines three classes of land use that may be noise sensitive as follows:

Category 1 – Outdoor amphitheaters, national landmarks, etc.

Category 2 – Residences, hospitals/rest homes, hotels

Category 3 – Schools, libraries, theaters, churches

Levels of Noise Impact

The UPRR trackage to which some BNSF traffic may be diverted only includes Category 2 noise sensitive uses along some segments. The noise metric that best identifies the level of noise sensitivity for Category 2 uses is the day-night level (Ldn). The FTA guidebook characterizes potential noise impacts as having no impact, moderate impact or severe impact. The severity of the change associated with a proposed rail action depends upon the existing noise exposure. In an existing very quiet environment, an increase of +10 dB or more would be considered a moderate impact and increases over 15 dB would be considered severe. As baseline levels increase, the project increment that would trigger a moderate or severe finding becomes progressively smaller. The distribution of impact severity is shown as follows in Table XII-3 as a function of the cumulative project contribution to the baseline or existing noise levels (dB Ldn):

**Table XII-3
PROJECT ONLY CONTRIBUTION TO NOISE BASELINE LEVEL**

Existing Noise Levels	Project Only Contribution (dB)		
	No Impact	Moderate Impact	Severe Impact
40 dB	<50	<55	>55
50 dB	<54	54-59	>59
60 dB	<58	58-63	>63
65 dB	<61	61-66	>66
70 dB	<65	65-69	>69
75 dB	<66	66-73	>73
>77 dB	<66	66-75	>75

Source: FTA Guidebook, Table 3-1, 2006

Results

The CREATE and the train horn noise models were run for those homes closest to the Chesley Avenue/UPRR Crossing. At 60 feet from the track centerline (the closest homes), the following day-night (Ldn) noise levels in Table XII-4 are calculated using the FRA train noise models from the train activity scenarios shown above (dB):

**Table XII-4
MODELED LDN NOISE LEVELS AT 60 FEET AT
CHESLEY AVENUE/UPRR AT-GRADE CROSSING**

Scenario	No Horns	Horns Only	Moving + Horns
Existing UPRR Freight	74	73	77
Existing UPRR Passengers	65	75	75
Combined Existing Total	75	77	79
BNSF Only	68	70	72
Combined UPRR + BNSF	75	78	80

Based solely on the modeling results, the addition of 68 dB Ldn from added BNSF trains (without horns) to a calculated 75 dB Ldn UPRR baseline is considered a “moderate impact.” At the one UPRR location where warning horns are used near residential uses (Chesley Avenue at-grade crossing), the BNSF contribution is calculated by the computer models to add 72 dB Ldn to a 79 dB Ldn baseline. This is again considered to be a “moderate impact.”

However, the measured existing noise levels were considerably lower than the model predictions. The model predicts that existing UPRR noise levels from moving trains and crossing horns should be 79 dB Ldn at 60 feet from the track centerline. If the calculated reference noise level of 79 dB Ldn is adjusted for distance from the track, the comparison of modeling and measurement is shown in Table XII-5 as follows:

**Table XII-5
MEASURE NOISE LEVELS AT THE CHESLEY AVENUE/UPRR TRACK AT-GRADE LOCATION**

Parameter	Chesley	Alamo	Duboce
Distance to track	60 feet	70 feet	300 feet
Measured 24-hour Ldn	73 dB	72 dB	66 dB
Modeled@receiver set-back*	79 dB	78 dB	72 dB
Model - measurement	-6 dB	-6 dB	-6 dB

*=dB Ldn for an acoustically “hard” surface

The difference between the model and actual measurement was 6 dB at each monitoring location. If the entire model output is shifted by the measured calibration factor of -6 dB, the results near the Chesley Avenue crossing would be as follows (dB Ldn):

Existing UPRR Freight	(77 dB - 6 dB adj. = 71 dB)
Existing UPRR Passenger Service	(75 dB – 6 dB adj. = 69 dB)
Combined Level at 50 feet	(71 dB + 6 dB adj. = 73 dB)
BNSF Freight only	(72 dB - 6 dB adj. = 66 dB)
Combined UPRR + BNSF	(73 dB + 6 dB adj. = 74 dB)

For a baseline level near 73 dB Ldn (see Table XII-3 above), an adjusted project-only contribution of 66 dB Ldn is considered a moderate impact. With the use of train horns, even the minor addition of

2.4 trains per day generates a moderate noise impact. At all other UPRR track locations where horns are not used near residential development, the baseline level would be 69 dB Ldn near the tracks if the same - 6 dB off-set were applicable. The adjusted BNSF contribution of 62 dB Ldn (68 dB calculated -6 dB off-set) constitutes a “no impact” situation. Any consideration of possible moderate impact reduction would thus only center on the residential uses near the Chesley Avenue UPRR crossing. Based on the evaluation in this document, no minimization or mitigation is required or proposed at this time.

Other Major Noise Sources

Existing air traffic activity also contributes to the noise in the City of Richmond and Contra Costa County. The remaining noise sources are industrial plants such as oil refineries and materials processing plants. According to the City of Richmond General Plan, commercial activities, outdoor recreational activities, construction, and transient aircraft overflights also contribute to local noise levels within the project area.

Short-Term Noise Impacts

Noise from construction activities would be generated by two primary sources during the construction phase: the on-road transport of construction materials and workers driving to work, and the off-road construction itself. Since transportation of personnel and materials will occur on already traveled roadways, background noise conditions will mask any project on-road contributions. Some heavy materials delivery for track improvements is proposed to be via trains such that on-road truck noise will be limited to delivery of fill material and support construction materials.

Construction activities occur in various steps, each of which involves different types of equipment and a distinct noise characteristic. These steps would alter the character of the noise levels surrounding the construction sites as the project is developed

FTA construction noise assessment guidelines recommend that 8-hour Leq levels should not exceed 80 dB (Page 12-8) in residential areas. The industrial land use standard is 90 dB. Noise levels from equipment uses for rail construction are typically slightly above 80 dB at 50 feet from the source. Table 12-1 of the FTA guidelines list the following reference noise levels at 50 feet shown in Table XII-6:

**Table XII-6
EQUIPMENT NOISE REFERENCE LEVELS AT 50 FEET**

Backhoe	80 dB
Ballast Equalizer	82 dB
Ballast Tamper	83 dB
Compactor	82 dB
Mobile Crane	83 dB
Spike Driver	77 dB
Tie Handler	80 dB

If several pieces of equipment operate in close proximity, a reference level of 85 dB at 50 feet is a representative input analysis threshold. The short-term reference level is reduced by intermittent usage, by distance spreading and by any intervening ground effects in determining the 8-hour Leq. Distance spreading alone between track construction and the closest home will be -6 dB. Worst case construction noise will be less than the 80 dB 8-hour Leq impact criterion at the nearest residence. The industrial impact criterion of 90 dB Leq is met at less than 25 feet from the activity. There are no construction activity noise impacts associated with the proposed project.

Construction Vibration

- b. *Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?*

Less Than Significant Impact –The three affected alignments (BNSF from the connector track to the yard; BNSF from the yard to the Stege merge with the UPRR; and UPRR from Stege merge to the Port of Oakland will not incur a substantial change in groundborne noise or vibration as a result of implementing the proposed project. The substantiation for this finding is presented in the following text.

The Noise Study included an evaluation of potential vibration impacts. The following information is abstracted from this study. *Vibration caused by trains is the result of wheels rolling on the rails. This energy is then transmitted through the track support system into the ballast through the ground to the foundations of nearby buildings, and finally throughout the remainder of the building structure. The level of vibration received at the building is a function of the type of trains, their speeds, track system, structure, support and condition, distance from the tracks, geological condition, and the receiving structure. Ground-borne vibration does not typically annoy people who are outdoors.*

The motion due to ground-borne vibration is described in vibration velocity levels, measured in decibels referenced to 1 micro-inch per second. To avoid confusion with the decibel used to describe sound levels, the abbreviation VdB is used. Typical ground-borne vibration levels are summarized in Table XII-7:

**Table XII-7
TYPICAL GROUND-BORNE VIBRATION LEVELS**

RMS Vibration Velocity	Human or Structural Response
65 VdB	Threshold of human perception
70 VdB	Perceptible to most people
75 VdB	Generally acceptable for residential use
80 VdB	Annoying to people for frequent events
90 VdB	Difficulty with motion-sensitive tasks
95 VdB	Cosmetic damage to older structures
100 VdB	Cracks in walls and Foundations

The FTA has published the most recent guidance manual for the assessment of noise and vibration impacts in transportation projects, Transit Noise and Vibration Impact Assessment, May, 2006. It was assumed that land uses near FRA rail projects would similarly experience the same level of vibration sensitivity as FTA transit projects.

Impacts are determined by estimating future ground-borne vibration levels and comparing those levels to the criteria shown in Table XII-8:

**Table XII-8
GROUND-BORNE VIBRATION IMPACT LEVELS**

Land Use Category	Ground-Borne Vibration Impact Levels (VdB re 1 micro/in/sec)		
	Frequent Events (1)	Occasional Events (2)	Infrequent Events (3)
Category 1: Buildings where ambient vibration is essential for interior operations	65 VdB	65 VdB	65 VdB
Category 2: Residences and buildings where people normally sleep.	72 VdB	75 VdB	80 VdB
Category 3: Institutional land uses with primarily daytime use	75 VdB	78 VdB	83 VdB

(1) "Frequent Events" is defined as more than 70 vibration events per day

(2) "Occasional Events" is defined as between 30 to 70 events per day

(3) "Infrequent Events" is defined as fewer than 8 vibration events per day

The UPRR tracks currently carry 10-freight trains and 40 passenger trains (mostly commuter, some Amtrak). The addition of 2.4 diverted BNSF trains would create about 53 vibration events (50 existing and 2.4 added). The post-project condition would continue to be considered "occasional events." The

applicable vibration impact criterion for homes adjacent to the existing UPRR tracks is therefore 75 VdB.

Vibration assessment requires detailed knowledge of train speeds, train weights, suspension system stiffness, track structure, sub-surface propagation characteristics, receiver location, and receiver structural features. Along the length of the UPRR tracks from the proposed connector to Stege Junction, many of these parameters are variable such that a detailed vibration analysis is not feasible. A more generalized assessment was therefore prepared. The FTA guideline shows the following generalized RMS vibration level in Table XII-9 as a function of distance from a locomotive powered passenger or freight train traveling at 50 mph:

**Table XII-9
RMS VIBRATION LEVEL AS A FUNCTION OF DISTANCE**

Distance to Track Centerline	RMS Vibration Level (Re: 1 microinch/sec)
14'	95 VdB
25'	90 VdB
45'	85 VdB
80'	80 Vdb
140'	75 VdB
250'	70 Vdb

The threshold for cosmetic damage of 95 VdB is reached at 14 feet. Any possible impact would therefore be associated with vibration nuisance and not structural damage. The first tiers of homes adjacent to the UPRR tracks may experience an increase in the number of vibration events. However, the FTA guidelines state that if impact criteria for existing conditions are already exceeded, receivers are considered to experience additional vibration impact "...if the project significantly increases the number of vibration events. Approximately doubling the number of events is required for a significant increase." (Page 8-5, Section 8.1.2, FTA, 2006).

The number of vibration events perceptible at the closest tier of homes would increase from 50 to 53 per day from BNSF cross-over traffic. As noted above, this is not considered a significant increase. No vibration reduction measures are considered necessary.

The primary concern from construction vibration is typically related to structural damage effects. Track laying does not entail use of heavy equipment that has a potential for any perceptible structural impacts. The accepted construction vibration damage criterion for walls, stucco, or slabs is 0.2 inches/sec (peak particle velocity, or PPV). A loaded truck has a typical PPV of 0.08 inch/second at 25 feet. The damage criterion is met by 14 feet from the source. Construction trucks or similar equipment will not operate within 14 feet of any off-site homes. There will be no vibration impacts from project construction.

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

Less Than Significant Impact – As explained under Section XII.a above, noise from future train operations will experience a minimal modification. Two of the affected alignments (BNSF from the connector track to the yard and BNSF from the yard to the Stege merge) will experience less train traffic in the future. Train volumes on the third segment of the affected alignment (UPRR) will remain the same as they are at present. Therefore, these affected segments will not experience any adverse noise impact from project implementation.

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

Less Than Significant Impact – Implementation of the proposed project would involve the addition of a new rail connector track in an unincorporated portion of Contra Costa County and the City of

Richmond, as well as related improvements to signals and crossings. Activities associated with such construction may be a noticeable temporary noise source. Noise from construction activities would be generated by two primary sources during the construction phase: the on-road transport of construction materials and workers and, off-road construction itself. Since transportation of personnel and materials will occur on already traveled roadways, background noise conditions will mask any project on-road contributions. Some heavy materials delivery for track improvements is proposed to be via trains such that on-road truck noise will be limited.

Construction activities occur in various steps, each of which involves different types of equipment and a distinct noise characteristic. These steps would alter the character of the noise levels surrounding the construction sites as the project is developed.

For track improvements, earth-moving and materials handling equipment to establish a new track bed would include typical machinery such as small dozers, front loaders, etc. Typical operating cycles may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Noise levels at 50 feet from earth-moving equipment typically range from 73 to 96 dB. Although noise ranges during all phases of construction are similar in level, the second phase, track laying, typically varies from 85 to 90 dB at 50 feet from the source. This activity has the potential to temporarily create clearly audible noise levels at the closest receptors due to the various power tools and equipment used in track and tie placement, welding and finishing the track. Such temporary noise levels are similar in magnitude to those already occurring many times per day from passing trains. They are not “new” noise sources within the existing acoustic environment.

Avoidance, Minimization and Mitigation Measures

With implementation of recommended minimization measures, such as limiting construction hours in accordance with the city or county codes and the temporary nature of construction, impacts from construction activities would be reduced to a less-than-significant level.

XII-1 Construction shall be limited to the hours of 7 a.m. to 7 p.m. on Monday through Friday, and between 9 a.m. to 6 p.m. on Saturday, and shall be prohibited on Sundays and federal holidays, except in emergencies.

XII-2 Utilize construction methods or equipment that will provide the lowest level of noise impact, i.e., use newer equipment that will generate lower noise levels.

XII-3 Equip all construction vehicles and fixed or mobile equipment with properly operating and maintained mufflers or sound attenuation devices, as specified in regulations at the time of construction.

XII-4 Schedule the construction such that the absolute minimum number of equipment would be operating at the same time at the same location.

XII-5 Maintain good relations with the school and community such as keeping people informed of the schedule, duration, and progress of the construction, to minimize the public objections of unavoidable noise. Communities should be notified in advance of the construction and of the expected temporary and intermittent noise increases during the construction period.

- e. *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, 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?*

No Impact – There are no public or private airports in the project vicinity, so no potential exists to expose workers on this project to excessive noise.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
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)?				X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X

a-c. *No Impact* – This project does not include the development of any new housing nor any new long-term employment in the area that could create an indirect demand for housing. This project will facilitate existing passenger and freight train traffic and will not add capacity that could induce growth. There are no housing units within the project alignment so no population can be displaced. With no displaced population, there will be no need to construct replacement housing at another location. Therefore, no adverse impact on housing can be caused by implementing the proposed project.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XIV. PUBLIC SERVICES: 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:				
a) Fire protection?				X
b) Police protection?				X
c) Schools?				X
d) Recreation/Parks?				X
e) Other public facilities?				X

SUBSTANTIATION City of Richmond General Plan/General Plan EIR; the Contra Costs General Plan/General Plan EIR; and contacts with the City Fire and Police Departments

a-e. *No Impact* – The proposed project will not build or create the need for any new or expanded government facilities.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XV. RECREATION:				
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?				X
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?				X

SUBSTANTIATION: Contra Costa County General Plan January 2005; Volumes One and Two, Richmond General Plan August 1994; and six field visits to the site beginning in 2009, with the most recent visit on March 20, 2012

a&b. *No Impact* – The project site has no potential to increase demand for or use of recreation facilities. No direct or indirect effects on such facilities can occur and the project will not cause new recreation facilities to be created with associated impacts from construction and implementation of new recreation facilities.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
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?				X
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?				X
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?				X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
e) Result in inadequate emergency access?			X	
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?				X

SUBSTANTIATION: City of Richmond and Contra Costa General Plans and General Plan EIRs and field observations.

a-d

&f. *No Impact* – These transportation/circulation system issues will not be affected by the proposed project. The project is expected to alleviate long delays at nine at-grade crossings in downtown Richmond, which would benefit local traffic circulation.

e. *Result in inadequate emergency access?*

Less Than Significant Impact – During construction a potential exists for the project to interfere with emergency access to the project alignment and adjacent area. Measures outlined below are designed to create an emergency access plan that will be approved by the police and fire service providers.

Avoidance, Minimization and Mitigation Measures

With implementation of the minimization measures presented below, adequate emergency access can be assured.

- XVI-1** *During construction, a Traffic Management Plan shall be prepared and implemented. At a minimum this plan shall define how to minimize the amount of time spent on construction activities; how to minimize disruption of vehicle and alternative modes of traffic at all times, but particularly during periods of high traffic volumes; adequate signage and other controls, including flag persons, to ensure that traffic can flow adequately during construction; the identification of alternative routes that can meet the traffic flow requirements of a specific area, including communication (signs, webpages, etc.) with drivers and neighborhoods where construction activities will occur; and at the end of each construction day roadways shall be prepared for continued utilization without any significant roadway hazards remaining. This plan shall be submitted to local emergency service providers for review and input before initiating construction within a given area.*
- XVI-2** *Before initiating construction of the proposed project, BNSF shall submit and have approved an emergency response access plan that meets each affected jurisdiction's response time frames.*
- XVI-3** *Before initiating construction of the proposed project, BNSF shall submit and have approved an access control plan to its staging and equipment storage areas that meets each affected jurisdiction's crime minimization standards.*

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
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?				X
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?			X	
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?				X
f) Be served by a landfill(s) with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				X
g) Comply with federal, state, and local statutes and regulations related to solid waste?				X

SUBSTANTIATION: J.L. Patterson Engineering Reports and field observations

a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

No Impact – This rail infrastructure project will not generate any wastewater or increase demand for wastewater treatment capacity. Therefore, this project has no potential to exceed any wastewater treatment requirements of the 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?

No Impact – Because the proposed project will not generate any wastewater or require any water supply, there will not be a need to construct any new water or wastewater facilities to support the proposed project. Therefore, this project has no potential to cause adverse impacts due to construction of new water or wastewater facilities.

c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less Than Significant Impact – The proposed project will not alter the capacity of or generate additional runoff that would affect the Rheem Creek channel that crosses the project alignment. Where surface runoff accumulates on the east side of the UPRR high fill, a short segment of existing drainage swale will be replaced by a culvert beneath the new high fill.

- d. *Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?*

Less Than Significant Impact – It is estimated that about 5.5 acre-feet of water will be required over the construction period to support fugitive dust control and water to compact the high fill. Recycled water will be used, if available, to minimize project short-term demand for potable water. The proposed project's demand for water has no potential to exceed existing water entitlements and available water resources.

- 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?*

No Impact – This rail infrastructure project will not generate any wastewater or increase demand for wastewater treatment capacity.

- f. *Be served by a landfill(s) with sufficient permitted capacity to accommodate the project's solid waste disposal needs?*

No Impact – The proposed project will generate a small amount of green waste from clearing the drainage swale adjacent to the UPRR tracks. It is estimated that approximately two 40-yard bins of green waste will be generated and this material will be delivered to a green waste processing facility for recycling. No potential exists for this project to generate waste that would exceed the capacity of an existing landfill.

- g. *Comply with federal, state, and local statutes and regulations related to solid waste?*

No Impact – The proposed project incorporates a requirement to recycle green waste material. Since no other solid waste is forecast to be generated by the proposed project, no potential exists for this project to conflict with any regulations for solid waste management.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE:				
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?		X		
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)?			X	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

The following findings have been made, regarding the mandatory findings of significance set forth in Section 15065 of the CEQA Guidelines, based on the results of the environmental assessment in this Initial Study:

- a. *Less Than Significant With Mitigation Incorporated* – Due to the industrial setting and the absence of biological resources within the project area, development of the proposed project would not substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels or restrict the movement/distribution of a rare or endangered species. The project will not adversely impact any rare or threatened and endangered plants or animal species; nor will it adversely affect any designated critical habitat of any Federal listed species because there are none in the project area. However, the project will temporarily impact 0.02 acre of waters of the United States and State and permanently impact 0.32 acre of riparian habitat. Measure IV-1 is identified in Section IV to reduce the potential for biological resource impacts to a less than significant level through avoidance of the impact or by providing adequate mitigation/compensation for the potential impact.

The proposed project also has some potential to adversely affect cultural resources. This includes archeological resources that may occur below the ground surface and that could be accidentally exposed during construction activities. The proposed construction activities minimize excavation along the project alignment, so potential to accidentally expose subsurface resources is considered low. However, adequate minimization (measures V-1 through V-3) is provided to reduce the potential for cultural resources impact to these resources to a less than significant level.

- b. *Less Than Significant Impact* – The proposed project consists of installing and operating a new connector track between the BNSF and UPRR railroads in the vicinity of the Richmond Parkway in the City of Richmond. The project impacts are primarily construction activity impacts that have been determined to be less than significant without mitigation. For impacts to riparian and wetland habitat, mitigation is incorporated to reduce potentially significant impacts to less than significant

impacts. Based on the incorporation of mitigation measures and the lack of other projects being proposed for the project area, implementation of the proposed project will not have significant or cumulatively considerable, adverse impacts. Contacts with the City of Richmond and Contra Costa County indicated no other approved projects are proposed for the general project area.

- c. *Less Than Significant With Mitigation Incorporated* – The installation of the proposed connector rail will enhance train movements through the project area and will benefit the City of Richmond by removing slow-moving freight trains through the city’s downtown area. Certain aspects of the proposed project have the potential to result in adverse effects on humans. However, based on the evaluation provided above, the project will either have no impact or a less than significant impact on areas of concern for people who live and work in the project area. It is concluded that implementation of the proposed project will not cause substantial adverse effects on humans either directly or indirectly for the following resource issues: air quality (measures III-1 through III-5), geology and soils (measures VI-1 through VI-10), hazards and hazardous materials (measures VIII-1 through VIII-8), hydrology/water quality (measures IX-1 through IX-3), noise (measures XII-1 through XII-5) and transportation/traffic (measures VIII-5 through VIII-8).

XIX. SUMMARY OF AVOIDANCE, MINIMIZATION AND MITIGATION MEASURES

Air Quality

- III-1 All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- III-2 All haul trucks transporting soil, sand, or other loose material off site shall be covered.
- III-3 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.
- III-4 Vehicle speeds on unpaved areas shall be limited to 15 miles per hour.
- III-5 The import of trackbed fill shall not occur simultaneously with bridge construction; the source of fill material shall be less than a 10-mile one-way trip; or the hauling schedule shall be extended to at least 20 days.

Biological Resources

- IV-1 Mitigation for impacts to jurisdictional waters of the United States and State shall be offset by either or both of the following measures: (a) acquisition of wetland mitigation credits from an authorized wetland mitigation bank in the general area of the project at a 2:1 ratio, or 2 acres for each acre lost; and (b) revegetating the area adjacent to the eastside of the new track, not directly adjacent to the track but within the new track alignment, with a comparable set of native wetland plants as presently occurs in the proposed alignment. This requirement shall be memorialized in the 1602 Streambed Alteration Agreement and 404 Permit obtained for this project prior to disturbing the wetland habitat that occurs within the project alignment.

Cultural Resources

- V-1 If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.
- V-2 If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC) who will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact the Caltrans District 4 Office of Cultural Resources so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

Geology and Soils

- VI-1 Construct rail structures in areas identified in the preliminary geotechnical report as having a high liquefaction potential in accordance with measures identified in this report or as designated by the engineering design standards.
- VI-2 Apply seismic design and construction criteria to all rail structures subject to significant seismic shaking in accordance with the preliminary geotechnical report.
- VI-3 Require stability analysis for areas designated "Generally Susceptible" and "Mostly Susceptible" to liquefaction/subsidence on the local jurisdiction's Hazards Overlay Maps. If evidence of liquefaction/subsidence is identified along the track sections, project design may include:

- In-situ densification of susceptible soil.
 - Ground improvements such as removal and replacement of susceptible soils or dewatering.
 - Foundations designed to accommodate liquefaction.
 - Shallow foundation design to accommodate vertical and lateral ground displacement.
- VI-4 Require future site-specific geotechnical investigations of proposed construction of embankments and bridge/grade separations to include an assessment of potential impacts and site specific design measures related to expansive and otherwise unstable soils and specific measures to control these constraints. The identified design measures shall be implemented by BNSF.
- VI-5 Add protective covering of mulch, straw or synthetic material (erosion control blankets, tacking will be required).
- VI-6 Limit the amount of area disturbed and the length of time slopes and barren ground are left exposed. After construction, soil shall be compacted to a level similar to pre-construction conditions.
- VI-7 Construct diversion dikes and interceptor ditches to divert water away from construction areas.
- VI-8 Install slope drains (conduits) and/or water-velocity-control devices to reduce concentrated high-velocity streams from developing.
- VI-9 Apply provisions of erosion and sediment control that reduce volume and velocity of flows and content of sediment to levels that do not cause significant rill or gully erosion in susceptible areas. In addition, provide for restoration of areas that do become eroded.
- VI-10 Implement the above measures as part of the existing Storm Water Pollution Prevention Plan (SWPPP) and Water Quality Management Plan (WQMP) that shall reduce pollutants, such as sediment, from the disturbed site to the maximum extent practicable as defined by the Regional Water Quality Control Board.

Hazards and Hazardous Materials

- VIII-1 All spills or leakage of petroleum products during construction activities will be remediated in compliance with applicable state and local regulations regarding cleanup and disposal of the contaminant released. The contaminated waste will be collected and disposed of at an appropriately licensed disposal or treatment facility. Before determining that an area contaminated as a result of an accidental release is fully remediated, specific thresholds of acceptable clean-up shall be established and sufficient samples shall be taken within the contaminated area to verify that these clean-up thresholds have been met.
- VIII-2 Before initiating construction, BNSF shall conduct additional sampling and evaluation of potential contamination along the proposed connector track alignment to determine whether contamination will be encountered that may require remediation before or during installation of the new connector track. The findings from this evaluation shall be presented to the State Department of Toxic Substances Control and the local agency(s) responsible for managing contamination and remediation, and, if necessary, a remediation plan shall be prepared and approved by these regulatory agencies before removal of any contamination.
- VIII-3 All contaminated material encountered within the Richmond Rail Connector segment that exceeds regulatory standards shall be capped as in the present circumstance or identified, collected and delivered to a licensed treatment, disposal or recycling facility that has the appropriate systems to manage the contaminated material without significant impact on the environment.

- VIII-4 BNSF shall identify a qualified professional industrial hygiene firm and have a professional available to monitor all construction and remediation activities within the alignment of the connector track. At the end of construction a report shall be submitted to the local and state regulatory agencies that summarizes all remediation activities and residual conditions at the completion of connector track installation. This report shall document the findings and basis for determining that there is no residual hazard remaining at the completion of construction.

Hydrology and Water Quality

- IX-1 A Storm Water Pollution Prevention Plan (SWPPP) will be prepared for the project. The best management practices (BMPs) identified in the SWPPP will be used to minimize the potential for accidental releases of any chemicals or materials on the site that could degrade water quality, including solid waste, and require that any spill be cleaned-up, contaminated material properly disposed of and the site returned to pre-discharge condition, or in full compliance with regulatory limits for the discharged material. The portion of the SWPPP that addresses erosion and related sediment discharge shall specify that the measures shall achieve removal of sediment and other pollutants from disturbed sites to the maximum extent practicable.
- IX-2 For long-term mitigation of site disturbances, all areas not covered by structures shall be covered with hardscape (concrete, asphalt, gravel, etc.) or areas re-seeded with native vegetation to minimize potential erosion within the alignment, particularly from concentrated flows (rills, gully, etc.) and sediment transport from the alignment will be minimal as part of future surface runoff.
- IX-3 Where reclaimed water or non-potable water is reasonably available (short-haul trucking from a wastewater treatment plant that produces Title 22 Recycled Water), it shall be used in place of potable water for construction activities and for any areas permanently irrigated in the future along the new track alignment.

Noise

- XII-1 Construction shall be limited to the hours of 7 a.m. to 7 p.m. on Monday through Friday, and between 9 a.m. to 6 p.m. on Saturday, and shall be prohibited on Sundays and federal holidays, except in emergencies.
- XII-2 Utilize construction methods or equipment that will provide the lowest level of noise impact, i.e., use newer equipment that will generate lower noise levels.
- XII-3 All construction vehicles and fixed or mobile equipment shall be equipped with properly operating and maintained mufflers or sound attenuation devices, as specified in regulations at the time of construction.
- XII-4 Schedule the construction such that the absolute minimum number of equipment would be operating at the same time at the same location.
- XII-5 Maintain good relations with the school and community such as keeping people informed of the schedule, duration, and progress of the construction, to minimize the public objections of unavoidable noise. Communities should be notified in advance of the construction and of the expected temporary and intermittent noise increases during the construction period.

Transportation / Traffic

- XVI-1 During construction, a Traffic Management Plan shall be prepared and implemented. At a minimum this plan shall define how to minimize the amount of time spent on construction activities; how to minimize disruption of vehicle and alternative modes of traffic at all times, but particularly during periods of high traffic volumes; adequate signage and other controls, including flag persons, to ensure that traffic can flow adequately during construction; the identification of alternative routes that can meet the traffic flow requirements of a specific area, including

communication (signs, webpages, etc.) with drivers and neighborhoods where construction activities will occur; and at the end of each construction day roadways shall be prepared for continued utilization without any significant roadway hazards remaining. This plan shall be submitted to local emergency service providers for review and input before initiating construction within a given area.

- XVI-2 Before initiating construction of the proposed project, BNSF shall submit and have approved an emergency response access plan that meets each affected jurisdiction's response time frames.
- XVI-3 Before initiating construction of the proposed project, BNSF shall submit and have approved an access control plan to its staging and equipment storage areas that meets each affected jurisdiction's crime minimization standards.

Section 5 List of Preparers

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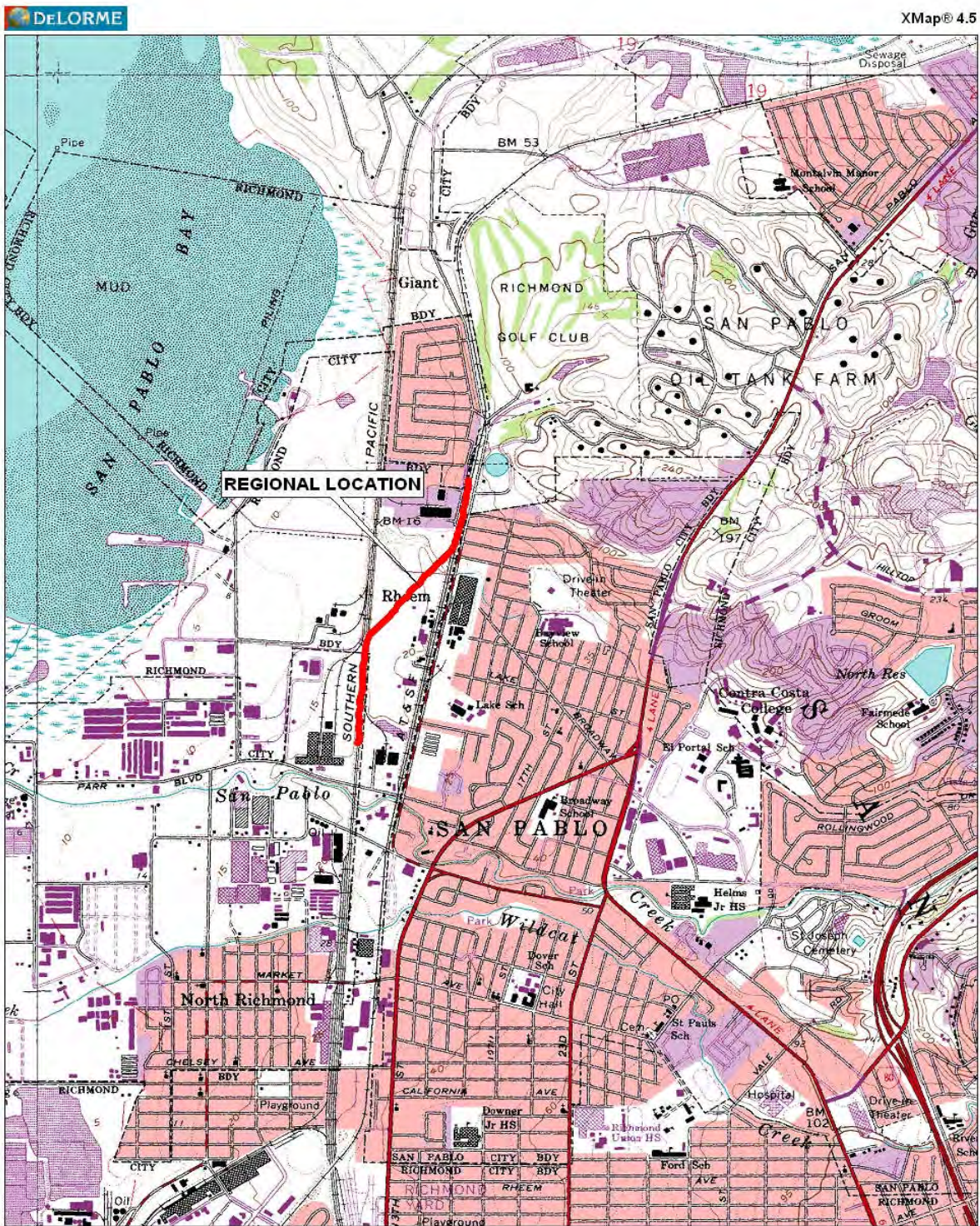
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M.A. Anthropology; Professionally Qualified Staff (PQS) level of Principle Investigator-Prehistoric Archaeology; Reviewed Historic Property Survey Report and Archaeological Survey Report

Section 6 **Figures / Exhibits**

Figure 1	Regional Location
Figure 2	Site Location (Aerial Photo)
Figure 3	BNSF / UPRR Track Alignment Through City of Richmond
Figure 4	Aerial View of City of Richmond and Vicinity
Figure 5a&b	Location of At-Grade Crossings
Figure 6a&b	Conceptual Track Layout
Figure 7a&b	Right-of-Way Property Acquisition
Figure 8a&b	Flood Insurance Rate Maps

FIGURE 1
Regional Location



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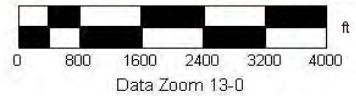


FIGURE 2
Site Location (Aerial Photo)



FIGURE 3
BNSF / UPRR Track Alignment Through City of Richmond



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MN (14.2° E)

0 1/4 1/2 3/4 1 mi
 Data Zoom 12-3

FIGURE 4
Aerial View of City of Richmond and Vicinity

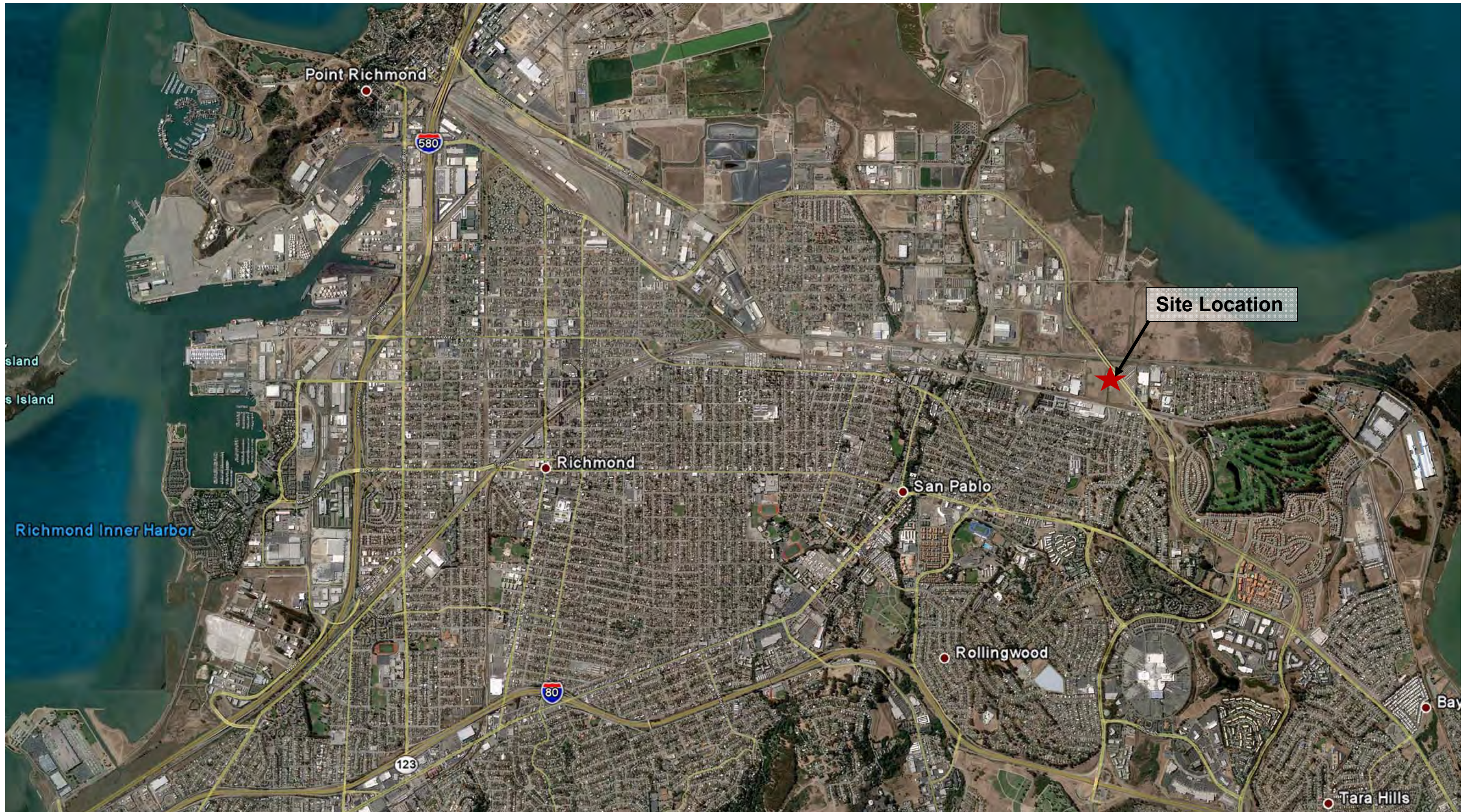
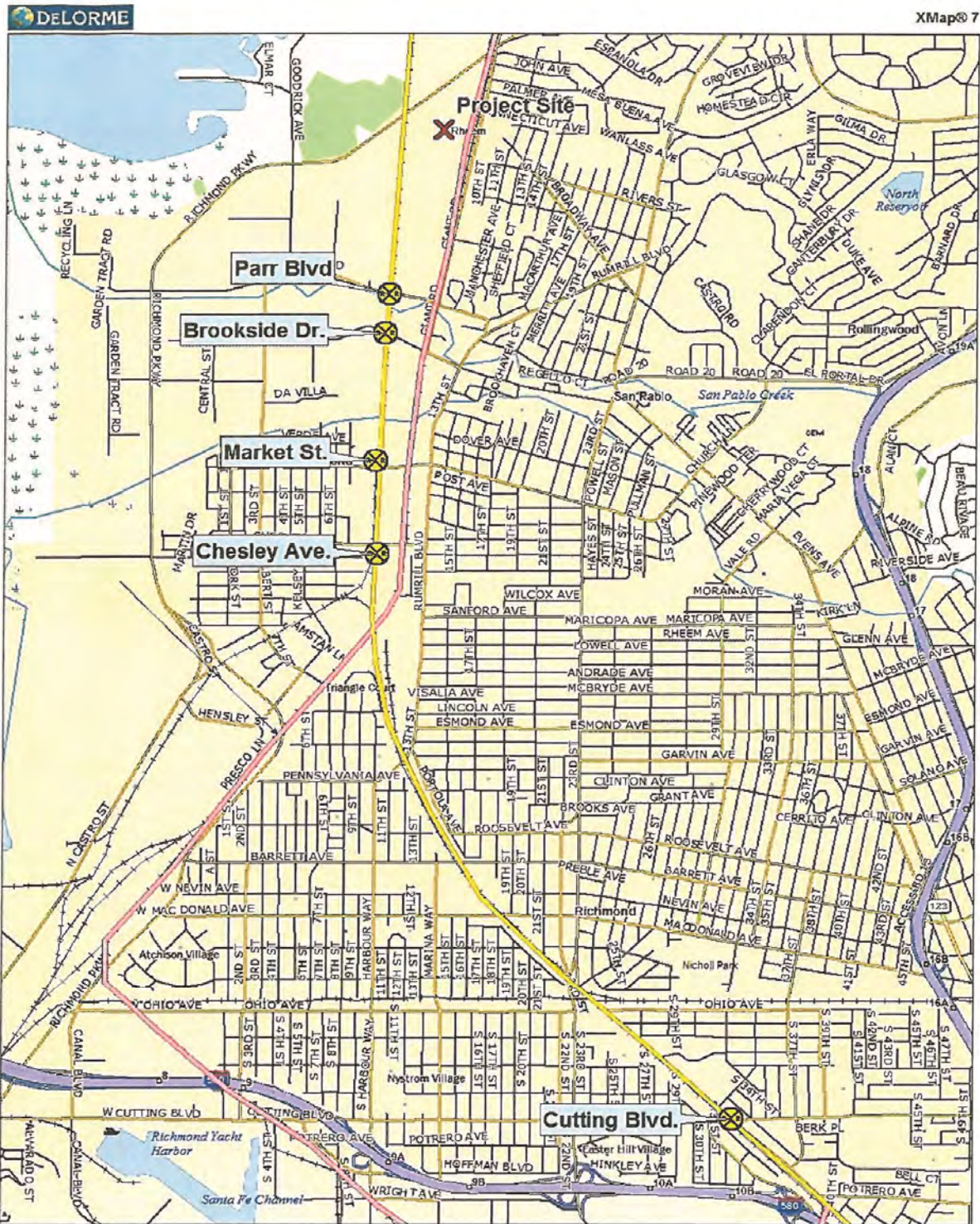


FIGURE 5a
Location of At-Grade Crossings



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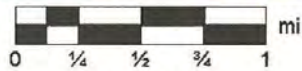
FIGURE 5b
Location of At-Grade Crossings



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Data Zoom 12-3

NOT FOR CONSTRUCTION



FIGURE 6a

BNSF RAILWAY
 RICHMOND RAIL CONNECTION
 TRACK PLAN
 CONCEPTUAL TRACK LAYOUT
 AND PARCEL IMPACT

CONTRACT NO.	
DRAWING NO.	RP-01
REVISION	SHEET NO.
SCALE	AS SHOWN

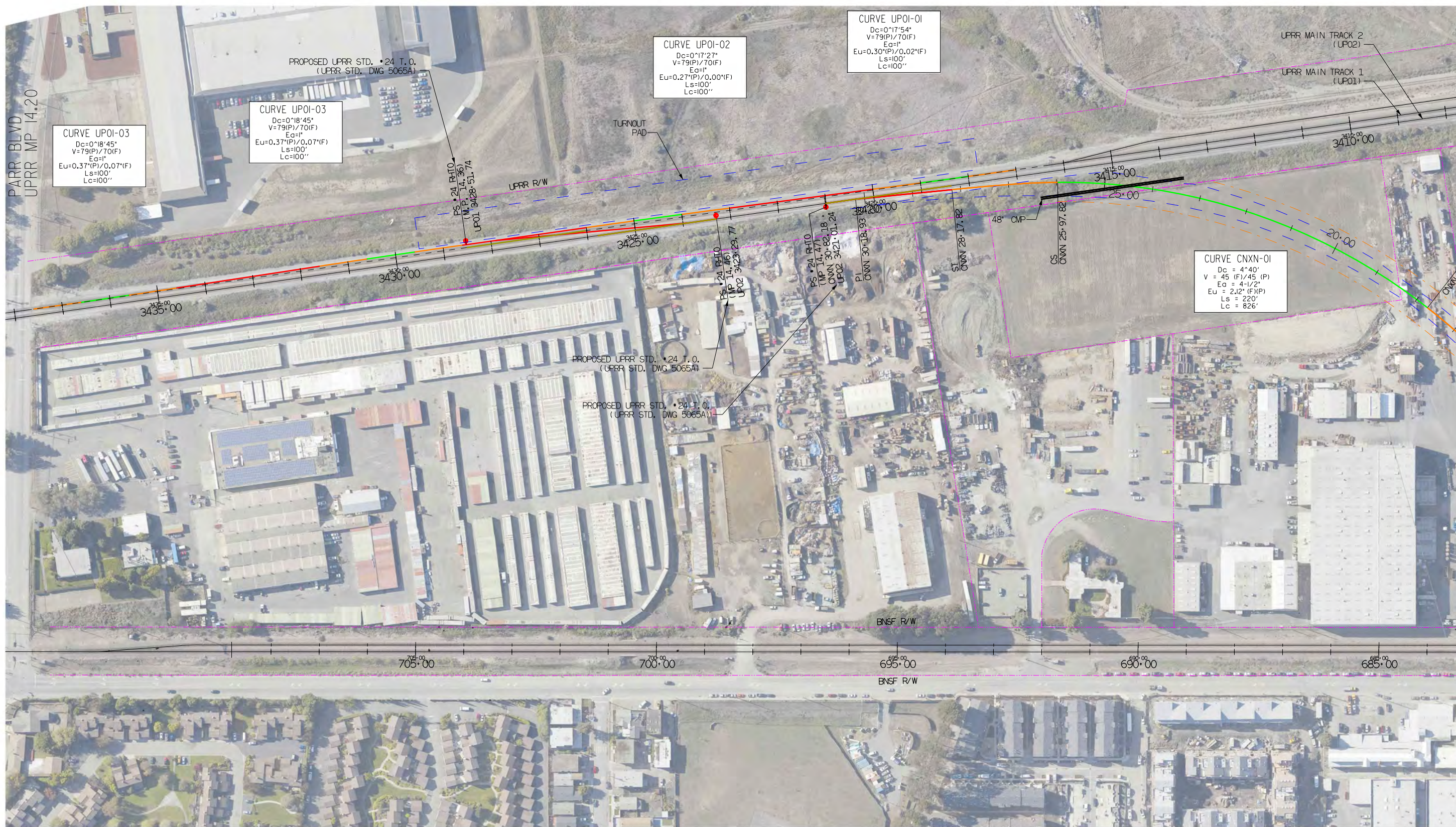


FIGURE 6b

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PROJECT NUMBER	DATE	DESCRIPTION	BY	APP
01	10/08	CONCEPTUAL LAYOUT		
02	01/11	PRELIMINARY DESIGN (45 MPH)		
03	02/27	REVISED TURNOUT PAD AND UPRR R/W		
04	09/09	REVISED ALIGNMENT		

Information confidential
 all plans, drawings, specifications, and/or information furnished herewith shall remain the property of the Burlington Northern Santa Fe Railway and shall be held confidentially and shall not be used for any purpose not provided for in agreements with the Burlington Northern Santa Fe Railway.

DESIGNED BY	
DRAWN BY	
CHECKED BY	
APPROVED BY	
DATE	SEPTEMBER 09, 2011

BNSF
RAILWAY

PATTERSON & ASSOCIATES, INC.
 725 TOWN & COUNTRY RD
 SUITE 300
 ORANGE, CA 92668

APPROVALS	DATE	APPROVALS	DATE
M. J. KIRSCHINGER		D. L. FREEMAN	1-24-11
R. W. LEASE	1-24-11		
R. J. BOILEAU	1-24-11		
S. C. SEXHUS			
R. D. BREDEBERG	1-24-11		

EXHIBIT ONLY
NOT FOR CONSTRUCTION

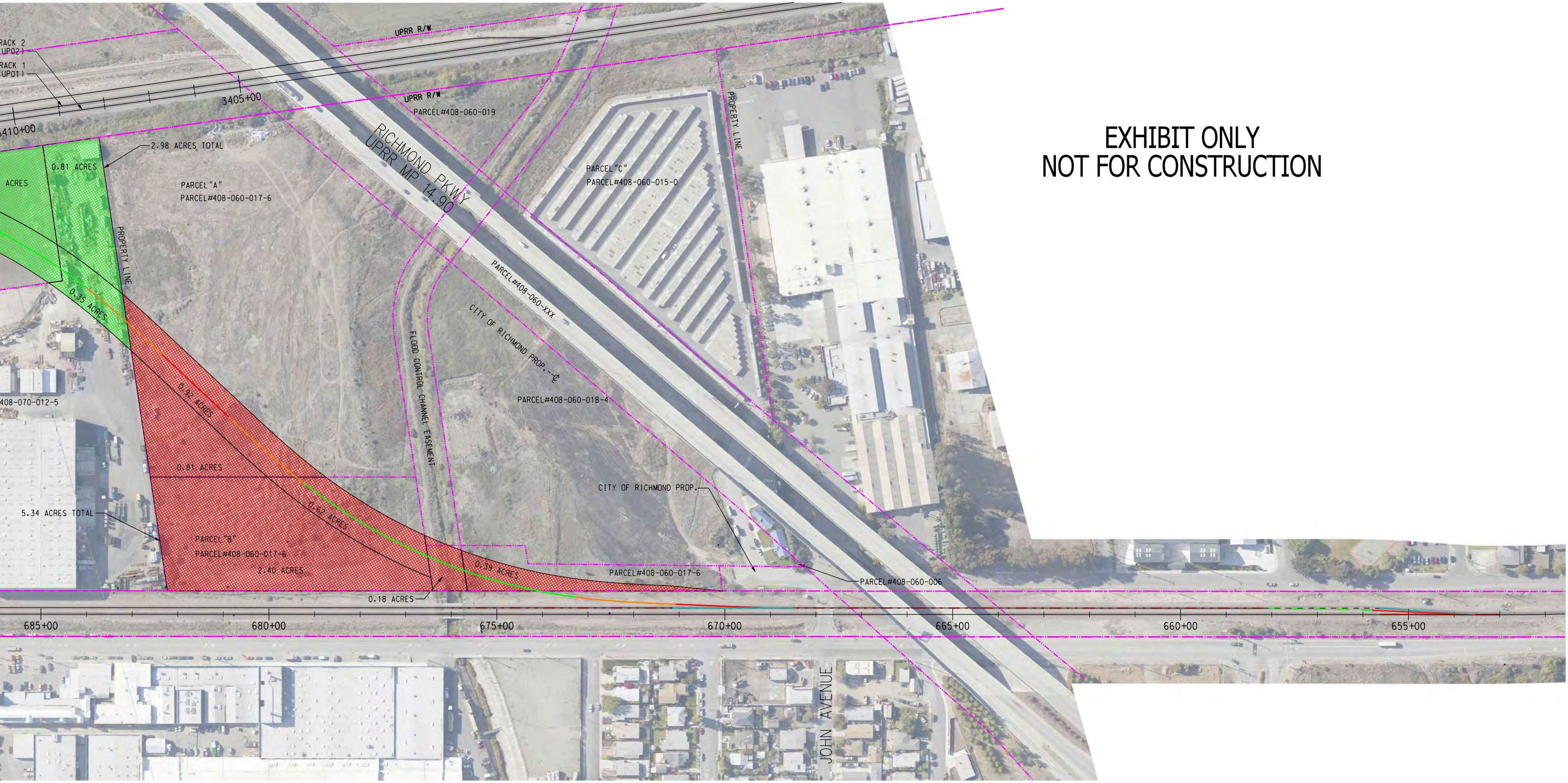


FIGURE 7a

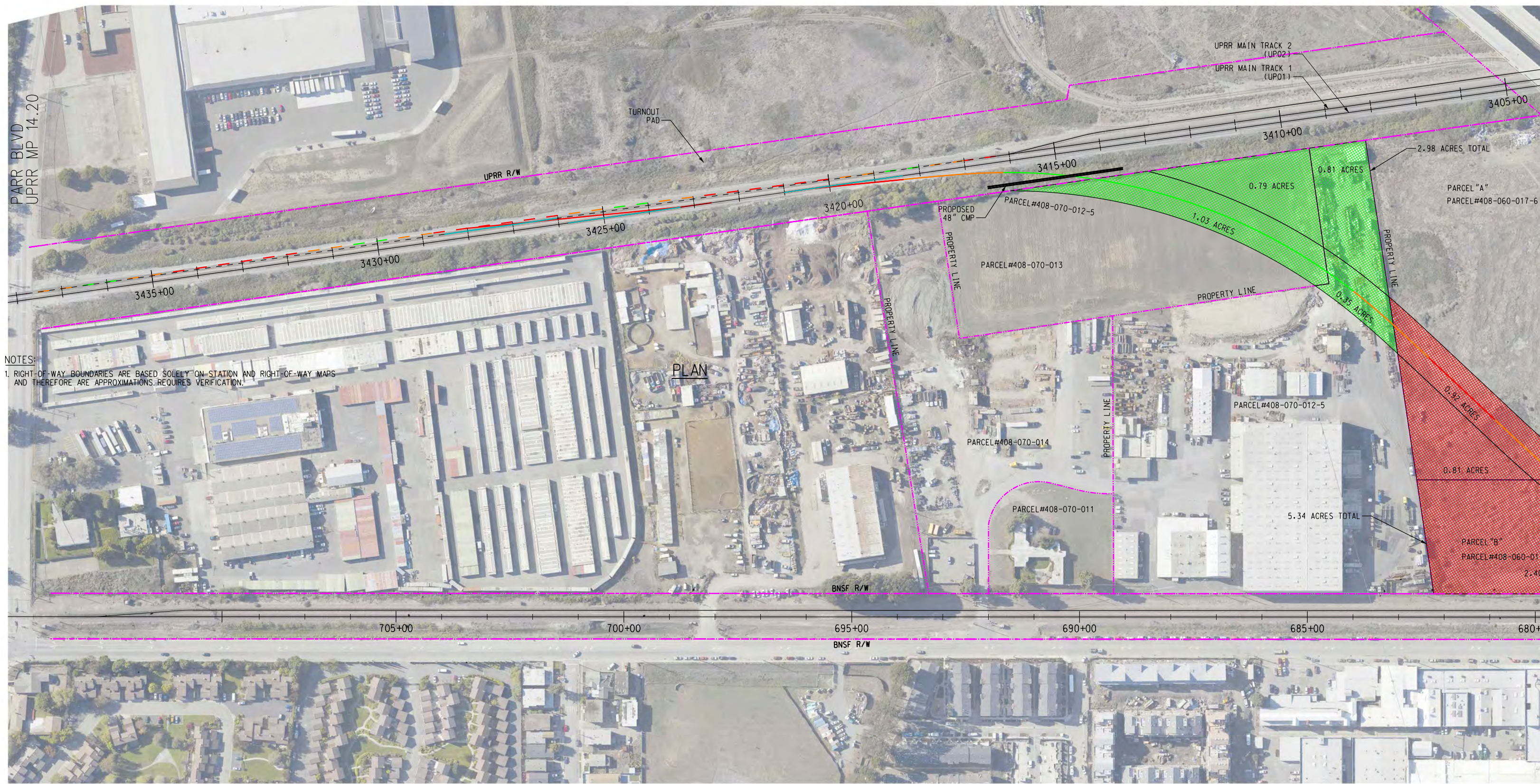
DATE	1-24-11

BNSF RAILWAY
RICHMOND RAIL CONNECTION

RIGHT OF WAY EXHIBIT
CONCEPTUAL TRACK LAYOUT
AND PARCEL IMPACT

CONTRACT NO.	
DRAWING NO.	YA-01
REVISION	SHEET NO.
SCALE	AS SHOWN

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3/5/2012



NOTES:
1. RIGHT-OF-WAY BOUNDARIES ARE BASED SOLELY ON STATION AND RIGHT-OF-WAY MAPS AND THEREFORE ARE APPROXIMATIONS. REQUIRES VERIFICATION.

PROFILE

FIGURE 7b

PROJECT NUMBER	REV	DATE	DESCRIPTION	BY	SUB	APP
04	09/09		REVISED ALIGNMENT			
03	02/27		REVISED TURNOUT PAD AND UPRR R/W			
02	01/11		PRELIMINARY DESIGN (45 MPH)			
01	10/08		CONCEPTUAL LAYOUT			

Information confidential to all plans, drawings, specifications, and/or information furnished hereafter shall remain the property of the Burlington Northern Santa Fe Railway and shall be held confidential and shall not be used for any purpose not provided for in agreements with the Burlington Northern Santa Fe Railway.

DESIGNED BY
DRAWN BY
CHECKED BY
APPROVED BY
DATE
FEBRUARY 14, 2012

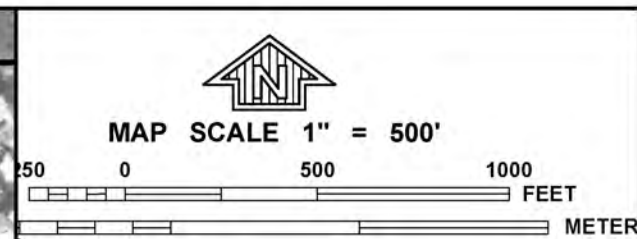
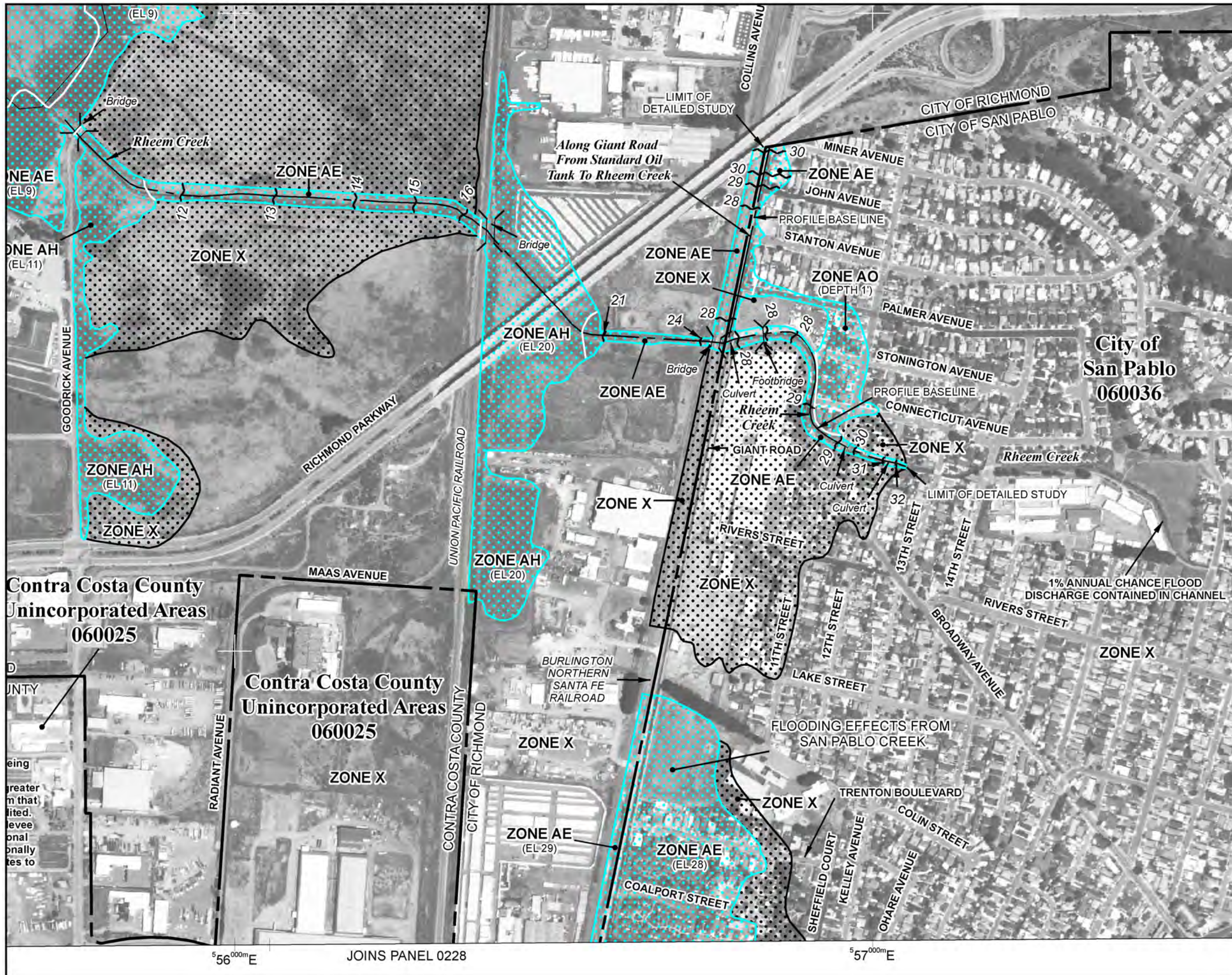
BNSF RAILWAY

UNION PACIFIC RAILROAD

PATTERSON & ASSOCIATES, INC.
725 TOWN & COUNTRY RD
SUITE 300
ORANGE, CA 92668

APPROVALS	DATE
M. J. KIRSCHINGER	
R. W. LEASE	1-24-11
R. J. BOILEAU	1-24-11
S. C. SEXHUS	
R. D. BREDEBERG	1-24-11

APPROVALS	DATE
D. L. FREEMAN	1-24-11



PANEL 0226F

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CONTRA COSTA COUNTY, CALIFORNIA AND INCORPORATED AREAS

PANEL 226 OF 602
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CONTRA COSTA COUNTY	060025	0226	F
RICHMOND, CITY OF	060035	0226	F
SAN PABLO, CITY OF	060036	0226	F

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
06013C0226F

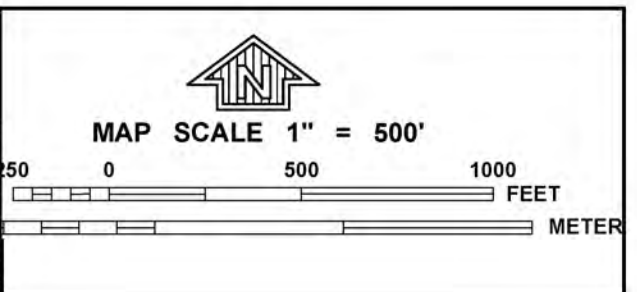
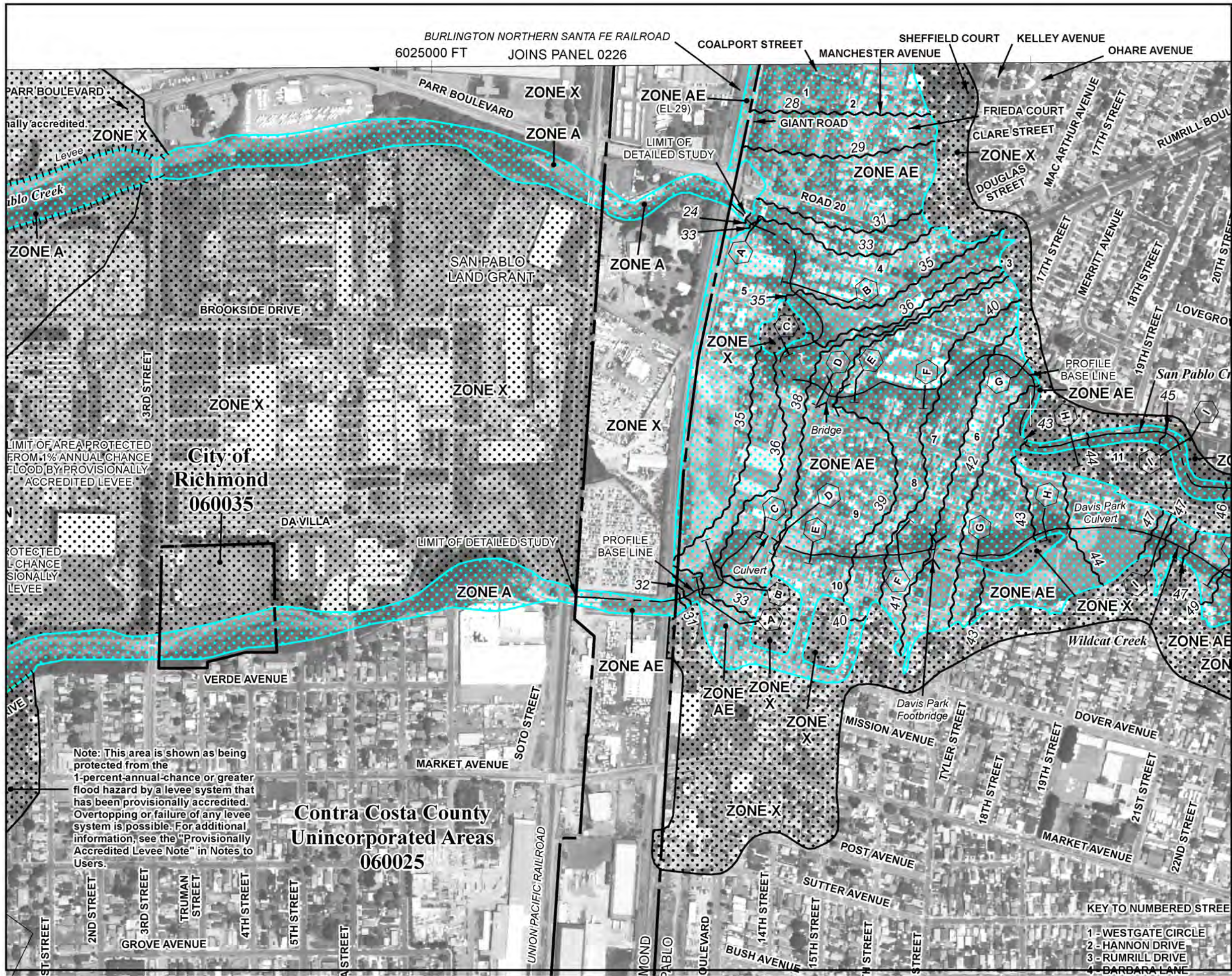
EFFECTIVE DATE
JUNE 16, 2009

Federal Emergency Management Agency

FIGURE 8a

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

56°00'00"E JOINS PANEL 0228 57°00'00"E



NFIP PANEL 0228F

FIRM
 FLOOD INSURANCE RATE MAP
 CONTRA COSTA COUNTY,
 CALIFORNIA
 AND INCORPORATED AREAS

PANEL 228 OF 602
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CONTRA COSTA COUNTY	060025	0228	F
RICHMOND, CITY OF	060035	0228	F
SAN PABLO, CITY OF	060036	0228	F

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MAP NUMBER
06013C0228F

EFFECTIVE DATE
JUNE 16, 2009

Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM

- KEY TO NUMBERED STREET
- 1 - WESTGATE CIRCLE
 - 2 - HANNON DRIVE
 - 3 - RUMRILL DRIVE
 - 4 - BARBARA LANE

FIGURE 8b

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U.S. Geological Survey (USGS), Richmond Quadrangle, 7.5 Minute Series topographic (map)

Section 8

Distribution List

Elected Federal Officials

The Honorable Barbara Boxer
United States Senator
70 Washington Street, Suite 203
San Francisco, CA 94111

The Honorable Dianne Feinstein
United States Senator
One Post Street, Suite 2450
San Francisco, CA 94104

The Honorable George Miller
United States Representative, 7th District
1333 Willow Pass Road, Suite 203
Concord, CA 94520

The Honorable Barbara Lee
United States Representative, 9th District
1301 Clay Street, Suite 1000-N
Oakland, CA 94612

The Honorable John Garamendi
United States Representative, 10th District
1981 North Broadway, Suite 220
Walnut Creek, CA 94596

Elected State Officials

The Honorable Mark DeSaulnier
California State Senator, 7th District
1350 Treat Boulevard, Suite 240
Walnut Creek, CA 94597

The Honorable Loni Hancock
California State Senator, 9th District
1515 Clay Street, Suite 2202
Oakland, CA 94612

The Honorable Susan Bonilla
California State Assemblywoman, 11th District
2151 Salvio Street, Suite 395
Concord, CA 94521

The Honorable Nancy Skinner
California State Assemblywoman, 14th District
1515 Clay Street, Suite 2201
Oakland, CA 94612

Elected County and City Officials

The Honorable John Gioia
Board of Supervisors, Contra Costa County,
District 1
11780 San Pablo Avenue, Suite D
El Cerrito, CA 94530

The Honorable Federal D. Glover
Board of Supervisors, Contra Costa County,
District 5
651 Pine Street
Martinez, CA 94553

Gayle McLaughlin
Mayor, City of Richmond
440 Civic Center Plaza
Richmond, CA 94804

Jim Rogers
Vice Mayor, City of Richmond
162 Lakeshore Court
Richmond, CA 94804

Nathaniel Bates
City of Richmond Councilmember
440 Civic Center Plaza
Richmond, CA 94804

Jovanka Beckles
City of Richmond Councilmember
440 Civic Center Plaza
Richmond, CA 94804

Courtland "Corky" Booze
City of Richmond Councilmember
440 Civic Center Plaza
Richmond, CA 94804

Thomas K. Butt
City of Richmond Councilmember
235 East Scenic Avenue
Richmond, CA 94801

Jeff Ritterman
City of Richmond Councilmember
440 Civic Center Plaza
Richmond, CA 94804

Cecilia Valdez
Mayor, City of San Pablo
13831 San Pablo Avenue, Building #1
San Pablo, CA 94806

Leonard R. McNeil
Vice Mayor, City of San Pablo
13831 San Pablo Avenue, Building #1
San Pablo, CA 94806

Genoveva Garcia Calloway
City of San Pablo Councilmember
13831 San Pablo Avenue, Building #1
San Pablo, CA 94806

Paul V. Morris
City of San Pablo Councilmember
13831 San Pablo Avenue, Building #1
San Pablo, CA 94806

Kathy Chao-Rothberg
City of San Pablo Councilmember
13831 San Pablo Avenue, Building #1
San Pablo, CA 94806

Native American Contacts

Jakki Kehl
Ohlone/Costanoan

Katherin Erolinda Perez
Ohlone/Costanoan
Northern Valley Yokuts
Bay Miwok

Linda G. Yamane
Ohlone/Costanoan

Amah/Mutsun Tribal Band
Irene Zwierlein, Chairperson

Amah/Mutsun Tribal Band
Jean-Marie Feyling

Indian Canyon Mutsun Band of Costanoan
Ann Marie Sayers, Chairperson

Muwekma Ohlone Indian Tribe
of the SF Bay Area
Rosemary Cambra, Chairperson

The Oholne Indian Tribe
Andrew Galvan

Trina Marine Ruano Family
Ramona Garibay, Representative
Oholone/Costanoan
Bay Miwok
Plains Miwok
Patwin

State Agencies

Dale E. Bonner, Secretary
Business, Transportation and Housing Agency
980 9th Street, Suite 2450
Sacramento, CA 995814-2719

State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814

California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219

Scott Wilson, Acting Regional Manager
California Department of Fish and Game
Bay Delta Region
7329 Silverado Trail
Napa, CA 94558

Bruce Roberts
California Department of Transportation,
Division of Rail
P.O. Box 942874 (MS 74)
Sacramento, CA 94274-0001

Elizabeth Wells
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

California Transportation Commission
1120 N Street, Room 2221 (MS-52)
P.O. Box 942873
Sacramento, CA 94273-0001

Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento, CA 95814

Regional Agencies

Wil Buller
Transportation Planning Manager
Alameda-Contra Costa Transit District
1600 Franklin Street
Oakland, CA 94612

Kenneth Kirkey
Planning Director
Association of Bay Area Governments
101 Eight Street, P.O. Box 2050
Oakland, CA 94604-2050

John McPartland
BART Director District 5 Bay Area Rapid Transit
District
P.O. Box 12688
Oakland, CA 94604-2688

Jack Broadbent
Chief Executive Officer
Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109

The Capitol Corridor Joint Powers Authority
300 Lakeside Drive, 14th Floor
Oakland, CA 94612

Hisham Noemi
Engineering Manager
Contra Costa Transportation Authority
2999 Oak Road, Suite 100
Walnut Creek, CA 94597

David Kurrent
Contra Costa Transportation Authority - Citizens
Advisory Committee
980 Barkley Court
Pinole, CA 94564

East Bay Municipal Utilities Department
P.O. Box 24055
Oakland, CA 94623

Doug Kimsey
Planning Director
Metropolitan Transportation Commission
101 Eighth Street – Metrocenter
Oakland, CA 94607

Max Delaney
San Francisco Bay Conservation and
Development Commission
50 California Street, Suite 2600
San Francisco, CA 94111

Rob Thompson
Western Contra Costa Transit Authority
601 Walter Avenue
Pinole, CA 94564

Christina Atienza
Executive Director
West Contra Costa Transportation Advisory
Committee
13831 San Pablo Avenue
San Pablo, CA 94806

County and City Agencies

Richard Mitchell
Planning Director
City of Richmond
450 Civic Center Plaza
Richmond, CA 94804

Matt Rodriguez
City Manager
City of San Pablo
13831 San Pablo Avenue
San Pablo, CA 94806

David Twa
County Administrator's Office
Contra Costa County
651 Pine Street, 11th Floor
Martinez, CA 94553

Railroads

Walt Smith
BNSF Railway
740 East Carnegie Drive
San Bernardino, CA 92408

John Fleming
BNSF Railway
720 South "B" Street
Stockton, CA 95205

Jerry Wilmoth
General Manager Network Infrastructure
Union Pacific Railroad
10031 Foothills Blvd.
Roseville, CA 95747

Jonathan Hutchison
Director of Government Affairs
530 Water Street
Oakland CA 94607

Local Libraries

Richmond City Library
325 Civic Center Plaza
Richmond, CA 94804

San Pablo Library
2300 El Portal Drive, Suite D
San Pablo, CA 924806

City of San Pablo Library
13831 San Pablo Avenue
San Pablo, CA 94806

Non-Governmental Agencies and Businesses

Pacific Gas & Electric
Chief Executive Officer
One Market, Spear Tower Suite 2400
San Francisco, CA 94105-1126