

B. Hazardous and Toxic Substances

1. Introduction

This section presents the potential impacts of both the Original Project and the Business Plan Project Alternative as they relate to hazardous materials. Wherever a discernible difference exists between the two projects, it is clearly called out for the reader. Unless otherwise indicated, the reader should assume that the impacts of the two projects would be identical.

The SCCRTC received many comments regarding the hazardous materials analysis presented in the May 2004 Draft EIR. Commenters expressed a desire to see data from the Phase II soil sampling that was to be conducted prior to the release of the Draft EIR in May 2004. However, the SCCRTC has been unable to obtain right-of-entry to the Union Pacific right-of-way (ROW) to conduct the sampling.

The project itself would not alter the existing condition of the soils along within the ROW with the exception of grading for the station platforms. The negotiations for purchase of the ROW include stipulations that require the completion of Phase II soil sampling and the remediation of identified contaminants to appropriate regulatory criteria.

2. Approach and Methodology

This chapter addresses the potential impacts of the proposed project related to hazardous and toxic substances. The information discussed in this chapter is based upon a document entitled *Preliminary Site Assessment, Davenport and Santa Cruz Branch Lines (Preliminary Site Assessment)* prepared by Geomatrix Consultants (March 1997). The primary focus of the site assessment was to identify activities, historical uses, or features that could be associated with environmental impacts to soil and/or groundwater along the approximately 32 miles of railway, then owned by Southern Pacific Railroad Company.

The analysis includes an assessment of the historical and existing land uses on the project site and its vicinity. The purpose of this assessment is to determine whether past or current land uses at the proposed project site or within a half-mile radius have or potentially could have affected subsurface conditions at the proposed project site.

The analysis includes a review of available information from local, state and federal regulatory agency files and database maps, historical land use information and interviews. A site reconnaissance was also conducted in an attempt to identify visible evidence of past or current use, storage, disposal or spillage of hazardous materials on the proposed project site and adjacent parcels. No soil or groundwater sampling was conducted as part of the environmental review.

All analysis activities were performed in accordance with the Standard Practice for Environmental Site Assessments as established by the American Society for Testing and Materials (ASTM) in Method E1527-97.

The 1997 *Preliminary Site Assessment* recommended that additional soil sampling be done as part of a Phase II soil and groundwater investigation to determine whether there is contamination on the project

site and, if so, the extent of any such existing contamination on the project site. However, Union Pacific must first grant a right of entry agreement to conduct the soil samples and other studies. This information will be collected as part of the pre-acquisition activities necessary to purchase the railroad right-of-way. A tentative negotiated purchase price has been determined and Union Pacific has stated that entry will be allowed in the near future. The recommended additional sampling, along with a commitment to carry out any resulting recommendations, is included as a proposed mitigation measure in this Revised Draft EIR.

All technical reports are available for public review between the hours of 8:00 a.m. and 5:00 p.m. at the Santa Cruz County Recreational Transportation Commission (SCCRTC): 1523 Pacific Avenue, Santa Cruz, CA. Technical reports are also available online at www.sccrtc.org.

3. Environmental Setting

a. Historical Land Uses

Southern Pacific Railroad Company acquired the railroad right-of-way in the project area in 1881. Historic land use information was obtained by reviewing Southern Pacific Railroad Company valuation maps, structure record indices, aerial photographs and Sanborn Fire Insurance Maps. Southern Pacific Railroad Company valuation maps and structure record indices were reviewed to identify on-site structures that could result in potential environmental impacts to the site. Valuation maps for the properties along the railroad right-of-way were reportedly developed initially circa 1915 and were revised periodically through the 1970s. The maps show on-site structures throughout the period the maps were maintained.

Aerial photographs for the following years were reviewed for the project site: 1928, 1953, 1961, 1963, 1965, 1967, 1969, 1982 and 1989. In 1928, the area between Capitola and La Selva Beach was primarily agricultural. By the early 1950s, residential and commercial development is evident in Capitola and Aptos. Commercial development in Aptos appeared to be centered around the Aptos Station. The 1965 aerial photograph shows what appears to be an industrial area immediately east of the Santa Cruz Yacht Harbor, adjacent to the site to the north. By 1989, significant residential development is apparent south of the proposed project site between eastern Capitola and Rio Del Mar. No significant areas of environmental concern were identified from the aerial photograph review.

Sanborn maps¹ were available for the following years: 1892, 1899, 1908, 1926, 1927, 1928, 1929, 1933, 1950, 1957, 1966 and 1971. The maps show the Capitola and Aptos areas in the vicinity of the project to be either residential or undeveloped and some commercial development by the late 1880s and early 1900s. The valuation maps show the primary stations along the proposed project route to be the Capitola and Aptos Stations. The Capitola Station was serviced by a depot and freight house. These structures were reportedly adjacent to, rather than on, the project site. West of the Capitola Station, a freight house was present on the site. The freight house no longer exists on the project site; however, no records were found

¹ Sanborn maps are uniform, large-scale maps that depict commercial, residential, and industrial structural information for over 12,000 cities in the U.S. This map collection was initiated by the Sanborn Map Company as fire insurance maps in 1867, and serves as a resource for infrastructure and structural data.

regarding the decommissioning of the freight house. Uses of the freight house would have included chemical handling and storage and therefore the potential for adverse environmental impacts exist.

b. Current Land Uses

Project Site: The project area consists of a 6-mile portion of the existing Santa Cruz and Davenport Branch Rail Lines, which extend over a total of 32 miles from Watsonville Junction in Pajaro (Monterey County) to the RMC Pacific Materials cement plant in Davenport (Santa Cruz County). The branch line is currently owned by Union Pacific Railroad, which runs freight service on the line. The freight service typically runs three round trips per week on Monday, Wednesday and Friday between Watsonville and Davenport.

Adjacent Properties: The northern portion of the project area is located within the city limits of Capitola. Land uses adjacent to the railroad right-of-way include low/medium and high density residential, commercial, visitor-serving uses, parks and open space and community facilities. The remainder of the project area is located in County of Santa Cruz jurisdiction, which begins east of the City of Capitola. Adjacent land uses in the County portion of the project area consist primarily of low to medium density residential, commercial, open space and State Parks property. For more detailed information regarding adjacent land uses, please see Chapter II.

c. Regulatory Agency Database Review

The 1997 *Preliminary Site Assessment* identifies environmental conditions in the vicinity of the proposed project area that could have an adverse environmental impact on the project property. Various federal and state environmental databases were reviewed as part of the preparation of the environmental assessment. These included lists of known or suspected contaminated sites, known handlers of hazardous waste, known waste disposal facilities and permitted underground storage tanks (USTs).

The databases that were researched are as follows:

- U.S. Environmental Protection Agency (EPA): National Priorities List (NPL), Federal Superfund List, February 1997.
- EPA: Comprehensive Environmental Response, Cleanup and Liability Information System (CERCLIS), February 1997.
- EPA: Resource Conservation and Recovery Act (RCRA): Facilities that report generation, storage, transportation, treatment or disposal of hazardous waste (TSD), October 1996.
- EPA: RCRA: Facilities that report the generation of small and large quantities of hazardous waste, October 1996.
- Emergency Response Notification System (ERNS): Report of reported releases of oil and hazardous substances, March 1997.
- California EPA (Cal-EPA): Calsites List of Annual Work Plan (AWP) sites, March 1996.

- California Integrated Waste Management Board (CIWMB): Solid Waste Information System (SWIS), Active Landfills, Closed and Inactive Landfills, Incinerators and Transfer Station Lists, February 1997.
- Cal-EPA: Leaking Underground Storage Tank (LUST) Information List, January 1997.
- Regional Water Quality Control Board (RWQCB): Facilities with Underground/Aboveground Storage Tank Information List, March 1994.
- Cal-EPA: Department of Toxic Substances Control: Report of facilities with likely or threatened releases of hazardous substances, medium/low priority and no further action sites (including ASPIS), February 1997.

A review of the environmental databases found 17 sites within one eighth of a mile of the proposed project area that potentially used or handled chemicals. Five of the sites were determined to have been closed, and no further action (if any) was required. None of the remaining sites were determined to have the potential to adversely impact the proposed project based on their status and/or proximity to the project area (i.e., either the site has been fully remediated to the satisfaction of the lead agency, or it is located at such a distance from the rail corridor that it could not adversely affect proposed operations).

d. Asbestos-Containing Materials and Lead-Based Paint

With the exception of the existing rail lines, there are no existing structures within the project area (railroad right-of- way) on the proposed project site and therefore no surveys or testing was conducted for asbestos-containing materials and lead-based paint.

e. Creosote

Creosote is a viscous liquid produced as a by-product of the carbonization of coal to produce coke and natural gas. It is practically insoluble in water and strongly adsorbs to particulate matter. Creosote is a mixture of several hundred chemicals. Aromatic hydrocarbons and phenolics make up more than 90% of creosote by weight². Note that pentachlorophenol, a component of oilborne preservatives for wood, is not typically a constituent of creosote used for preservation of railroad crossties³.

Although no specific air sampling data exists for potential dust generated by rail activity along the right-of-way, conservative estimates suggest that dust generated by rail activity, if any, would not result in a level of creosote in the air higher than levels used to screen for potential risk to human health in residential settings.

To quantitatively evaluate the possible presence of airborne creosote dust particles near the right-of-way, it is assumed that it is possible that the creosote-treated railroad ties degrade from weather exposure and train vibrations, depositing “dust” on the right-of-way. Creosote constituents (specifically polynuclear aromatic hydrocarbons [PAHs]) may leach from the railroad ties and from creosote “dust” to the underlying soil. The low solubility of creosote in water suggests that such leaching would not result in

² World Health Organization, 2004, Concise International Chemical Assessment Document 62 – Coal Tar Creosote.

³ Webb, David A., Creosote, Its Use as a Wood Preservative in the Railroad Transportation Industry with Environmental Considerations.

significant concentrations of creosote in the soil. Using the additional assumptions presented below, a conservative (worst case) estimate of the concentration of creosote in dust along the railroad line is as follows:

- For this scenario, it is assumed the creosote would remain in its current state.
- It is assumed that no dispersion of dust occurs between the source of dust generation (the railroad corridor) and the nearby residences. That is, the potential concentration of airborne dust is the same at distance from the railroad corridor as it is at its point of generation, which is assumed to be the railroad tracks.
- 10% of Cal OSHA permissible exposure limits (PEL) for nuisance dust is 1000 μg dust / m^3 air; this nuisance condition is assumed to be generated from passing trains.⁴
- Naphthalene, a carcinogenic PAH via inhalation, is present in creosote at the highest percentage by weight relative to other PAHs.
- The approximate dust concentration of naphthalene in railroad ties is 15.47 g naphthalene / m^3 wood dust (assuming that there is 14 g creosote / 0.1 m^3 of wood, PAHs are 85% of creosote by weight, naphthalene is 13% of total PAHs in creosote by weight)⁵.
- Maximum density of wood types used in railroad ties (assumed to be oak) is 900 kg/m^3 .⁶

Based on these assumptions, the estimated concentration of naphthalene in railroad dust is:

$$[15.47 \text{ g}/\text{m}^3 * 10^{-3} \text{ kg}/\text{g} * 1000 \mu\text{g}/\text{m}^3 / 900 \text{ kg}/\text{m}^3] = 0.017 \mu\text{g} \text{ naphthalene} / \text{m}^3 \text{ air}$$

Using the Regional Water Quality Control Board, San Francisco Bay Region's recently adopted inhalation unit risk value, the estimated residential screening level for naphthalene is 0.07 μg naphthalene / m^3 air. Even with the conservative assumptions described above, the estimated concentration of naphthalene due to dust generated by increased rail traffic is less than levels of naphthalene defined as safe for residential use. Additionally, it should be noted that the above calculation does not account for dispersion of dust in air; therefore, the concentration of creosote dust in air, if any, would lessen with distance from the rail. *In conclusion, the additional dust that may be generated by increased rail traffic likely would not present a significant risk to residents' health.*

The presence of creosote from railroad ties in storm water runoff is independent of rail activity, and therefore is an existing condition that would not be affected by the proposed project. The effective aqueous solubilities of naphthalene and other PAHs in creosote are low (< 31 mg/L ⁷; the solubility of gasoline in water is ~150 mg/L) and are not expected to be present at detectable concentrations in storm water runoff.

⁴ http://www.dir.ca.gov/title8/5155table_ac1.html

⁵ http://www.ccaresearch.org/pre-conference/pdf/Poster_Lorber.pdf

⁶ Tipler, Paul A. Physics for Scientists and Engineers, 3rd Edition.

<http://hypertextbook.com/facts/2000/ShirleyLam.shtml>

⁷ Gustafson, John B., Tell, Joan Griffith, and Orem, Doug, 1997, Selection of Representative TPH Fractions Based on Fate and Transport Considerations, Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 3, July.

Vaporization of creosote from railroad ties is independent of rail activity because it is based on a chemical's properties, specifically vapor pressure, and ambient air temperature. Therefore, vaporization of creosote would not be affected by the proposed project.

4. Impacts and Mitigation

a. Standards of Significance

The proposed project would have a significant impact if any of the following criteria is met:

Criterion 1: The project would create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials.

Criterion 2: The project would 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.

Criterion 3: The project would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one quarter of a mile of an existing or proposed school.

Criterion 4: The project would be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and as a result would create a significant hazard to the public or to the environment.

Criterion 5: 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, the project would result in a safety hazard for people residing or working in the project area.

Criterion 6: For a project located within the vicinity of a private airstrip, the project would result in a safety hazard for people residing or working in the project area.

Criterion 7: The project would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Criterion 8: The project would expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

b. Less Than Significant Impacts

The following discussion relates to Significance Criteria 3 through 8. Criteria 1 and 2 will be discussed in section c. Potentially Significant Impacts.

Significance Criterion 3 – Hazardous Emissions or Materials in the Vicinity of a School: The proposed project would be located within one quarter of a mile of New Brighton Middle School. This criterion is concerned with the construction of new stationary sources using hazardous materials that require a permit from the State of California for their operation. The proposed recreational rail service

does not require a permit for its operation, nor does the operation of diesel cars, trucks, or trains, which also emit similar pollutants.

While the proposed project would result in increased air pollutant emissions, the screening level air quality analysis performed to evaluate potential air quality impacts did not find a significant effect even at locations directly adjacent to the rail corridor itself. Because no significant effects were identified even at these locations, the emissions should be even less of a source of concern in areas located more distant from the corridor, including the New Brighton Middle School. Please refer to Chapter III.A for further discussion of potential air quality impacts.

Criterion 4 – Hazardous Materials Site on Government List: The proposed project area consists of an existing and functioning rail line and is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. The proposed project would not create a significant hazard to the public or to the environment.

Criteria 5 & 6 – Safety Hazard in Vicinity of Public or Private Airport or Airstrip: The proposed project is not in the vicinity of either a public or private airport or airstrip; therefore, no impacts would be expected as a result of the proposed project.

Criterion 7 – Interference with an Emergency Response or Evacuation Plan: The proposed project would cause delays at at-grade crossings due to the additional train trips, and could potentially affect emergency response or emergency evacuation plans. However, based on the traffic analysis conducted for the proposed project, the increase in train trips would not result in a significant impact on traffic delays at crossings. Please see Chapter III.D for information regarding the traffic analysis prepared for the proposed project. Discussions with staff at the County Sheriff and Fire Departments indicate that emergency providers would be able to maintain adequate access during emergencies. Sufficient alternate routes exist such that no significant impact to the provision of emergency response times is anticipated as a result of either the Original Project or the Business Plan Project Alternative.

Criteria 8 - Exposure to Wildland Fire: The project area passes through areas of State Parks and other forested areas that could be prone to wildfires. The proposed project would increase the number of round trips by approximately nine per day for the Original Project and four per day for the Business Plan Project Alternative, primarily during the summer months when vegetation is driest and fire danger highest. However, because the trains would be traveling on level terrain and at slow speeds (average of 15 miles per hour and no faster than 25 miles per hour), the likelihood of sparks would be minimal, and the potential increased likelihood of wildland fires would not be significant.

c. Potentially Significant Impacts

Criterion 1 – Significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials: The operation of the rail line would not involve the routine transport, use, or disposal of hazardous materials, other than the fuel used to power the train engine. A Preliminary Site Assessment was prepared in 1997⁸ for the acquisition of the entire 31.6-mile segment of rail line right-of-way. The report concluded that there is the potential for environmental contamination

⁸ Preliminary Site Assessment Davenport and Santa Cruz Branch Lines, March 1997. Available at SCCRTC offices.

associated with historic uses, all of which are located outside of the 6-mile segment identified for recreational rail service.

SCCRTC will conduct a Phase II soil and groundwater investigation to determine the extent of any identified contamination, including creosote residues. As noted earlier in this chapter and as set forth below, SCCRTC is proposing mitigation that, if adopted, will commit SCCRTC or Union Pacific to make sure the recommendations of the Phase II investigation are implemented pursuant to appropriate regulatory criteria. If this mitigation measure is adopted, these mandatory, enforceable criteria will represent performance standards that SCCRTC must satisfy in order to protect public health and ensure the avoidance of adverse environmental effects due to any changes to existing conditions that might be caused by the Project. This sampling will occur when Union Pacific allows a Right of Entry to conduct detailed hazardous materials analysis. This is progressing as part of the activities to acquire the railroad right-of-way.

Criterion 2– Release of Hazardous Materials into the Environment: The proposed project would not involve the use of hazardous materials with the exception of accidental spills of diesel fuel or other fuel used to run the train. Fuel could potentially be released into the environment in the instance of a derailment or refueling or maintenance activities; however, the project would require compliance with all Federal Railway Administration (FRA) safety and maintenance guidelines that regulate train design, locomotion, load, and infrastructure. These guidelines and regulations can be found in the Federal Code of Regulations at 49CFR238 Passenger Equipment Safety Standards. Adherence to these guidelines would ensure that impacts related to the handling of hazardous materials would be less than significant.

d. Mitigation Measures

Mitigation Measure B-1: Pursuant to the Federal Railroad Administration (FRA) Passenger Equipment Safety Standards the train operator shall prepare and submit to the SCCRTC and Federal Railroad Administration a train refueling and maintenance plan and safety plan for train operation. The plan(s) shall include measures taken to minimize the potential for spills of hazardous materials during refueling and maintenance operations and safety measures to reduce the likelihood of an accident during operation. The plan(s) shall be prepared in accordance with applicable federal, state and local rules and regulations and shall be reviewed and approved by appropriate agencies prior to operation.

Mitigation Measure B-2: As recommended by the Phase I Preliminary Site Assessment, SCCRTC shall perform a Phase II soil and groundwater investigation to determine the extent of any existing contamination on the project site, including creosote residues. The scope of the investigation shall be determined by a qualified environmental professional in accordance with the state of the practice. The analytical testing of the soil samples shall be conducted in accordance with Environmental Protection Agency test methods as codified in EPA document SW846. Consistent with applicable regulatory criteria and cost allocations reached through negotiations with Union Pacific, SCCRTC shall implement any recommendations identified in the Phase II investigation in order to protect public health and ensure the avoidance of any adverse effects from the operation of the Project.