

4.10

HAZARDOUS MATERIALS



4.10.1 INTRODUCTION

This section updates information on hazardous materials within or along the BART alignment since certification of the FEIR. Issues related to hazardous materials are primarily applicable to the construction phase of the Project, and are discussed in Section 4.18.5.6. However, the environmental and regulatory settings for hazardous materials for both the construction and operation phases are included in this section.

Several key documents on hazardous materials were prepared during the Preliminary Engineering design phase of the Project, and are available upon request from VTA. These documents include:

- ❑ *Silicon Valley Rapid Transit Project, Line Segment Hazardous Materials Characterization* (April 2005) documents the qualitative assessment of hazardous materials investigation performed along the first 9.3 miles of the BART Extension Project (from the planned BART Warm Springs Station to the east tunnel portal).
- ❑ *Regulatory Status Update Technical Memorandum, Hazardous Materials, SVRT Line Segment Project Preliminary Engineering* (March 2005) discusses regulatory changes since certification of the FEIR. Most of the changes are a result of negotiations with regulatory agencies regarding standards for on-site reuse of soil and ballast.
- ❑ *Silicon Valley Rapid Transit Project Line Segment Environmental Impact Mitigation Plan for Hazardous Materials* (November 2005) presents necessary actions to meet regulatory requirements and includes evaluations of options based on site characterization data in the *Hazardous Materials Characterization* report and information in the *Regulatory Status Update Technical Memorandum*, and specific recommendations for handling soil, ballast, and groundwater during construction.
- ❑ *Draft Contaminant Management Plan* (March 2006) addresses the management of potentially contaminated materials generated during construction activities and is intended for use during design and construction of the Project.
- ❑ *Silicon Valley Rapid Transit Project – Tunnel Segment Hazardous Materials Contamination—Additional Information Technical Memorandum* (July 2006) provides additional information regarding potential groundwater and soil hazardous materials contamination at properties within or immediately adjacent to the tunnel alignment.

4.10.2 ENVIRONMENTAL SETTING

To evaluate the presence or potential presence of hazardous materials in the Project study area, a qualitative assessment of known or potentially contaminated sites was performed in 2005, subsequent to certification of the FEIR. This assessment primarily consisted of a review of regulatory agency databases. In addition, a quantitative assessment of physical samples and chemical analysis along the first 9.3 miles of the BART Extension Project from the planned BART Warm Springs Station to the east tunnel portal was conducted. It should be noted that additional sampling and analysis will be conducted during subsequent engineering phases of the Project to determine the potential effects of contamination on both construction and operation of the Project, as discussed in the FEIR, Section 4.11.3.3.

4.10.2.1 Qualitative Site Assessments

The discussion in FEIR Section 4.11.2.1, which includes the identification of areas of known releases, potential sources of hazardous materials, and common contaminants from non-specific sources remains applicable in the SEIR. Other noteworthy sites of known releases have since been added to this discussion and include the former Ford Automobile Assembly Plant (now the Great Mall of the Bay Area), a site in the Alum Rock Station area, a site in the Diridon/ Arena Station area, and the former Food Machinery Corporation (FMC) manufacturing facility site (now the Federal Express site).

The BART alignment to the east of the Great Mall would be in one of four configurations, depending on the alignment option chosen from south of Curtis Avenue to Trade Zone Boulevard (Retained Cut Long, Retained Cut Short, Aerial Long, Aerial Short options). Groundwater at the Great Mall is impacted with residual petroleum hydrocarbons from activities of the former Ford Automobile Assembly Plant at 1100 South Main Street, Milpitas. The contaminated area crosses the BART alignment between STA 337+00 and 348+00.

A Site Management Plan—Former Ford Automobile Assembly Plant (March 1997) addresses environmental conditions including soil and groundwater at the Great Mall and contains requirements for construction activities on the property. Ongoing and future development activities are also subject to Regional Water Quality Control Board (RWQCB) requirements.¹

Within the Alum Rock Station area, potential contaminants in soil and groundwater include gasoline and methyl tertiary-butyl ether (MTBE) from Della Maggiore Stone, 87 North 30th Street, San Jose (near STA 607+00). The property owner was directed to perform a site investigation and report the results to the Santa Clara Department of Environmental Health (SCCDEH) per an order from the Santa Clara Valley Water District (Fuel Leak No. 14-74, SCWD ID# 07S1E04K04f letter dated August 25, 2005).

Within the Diridon/Arena Station area, potential contaminants in soil and groundwater include petroleum hydrocarbons below a surface parking lot owned by the San Jose Redevelopment Agency located between Autumn and Montgomery streets. This parking lot property includes a deed restriction that restricts certain activities that would extend beyond 1 foot into the soil or would use shallow groundwater for drinking water purposes or industrial/commercial use.

The yard and shops facility would be constructed on the former UPRR Newhall Yard (purchased by VTA in 2004), and would displace the western portion of the former Food Machinery Corporation (FMC) manufacturing facility site at 333 West Brokaw Road, San Jose (now owned by City of San Jose). Soil and groundwater beneath the former FMC facility is impacted with petroleum hydrocarbons, metals, and volatile organic compounds (VOCs). The primary chemicals of concern are trichloroethylene (TCE) and tetrachloroethylene (PCE) in groundwater. Environmental investigations and corrective actions have been ongoing at the FMC facility site since 1996. The investigations and corrective actions include 333 West Brokaw Road, which is the northernmost section of the former facility immediately north of Brokaw Road.

¹ A copy of the Site Management Plan and RWQCB letter may be found in the Silicon Valley Rapid Transit Project Line Segment Environmental Impact Mitigation Plan for Hazardous Materials, Appendices B and C, respectively. (HNTB Corporation and Earth Tech Corporation, November 2005)

This site is currently occupied by Federal Express and is included in the footprint of the Santa Clara Station. Groundwater extraction and monitoring at this site are under RWQCB oversight. Based on groundwater monitoring data and estimates of groundwater flow directions, there is a potential for a TCE plume beneath the former FMC facility to extend beneath the yard and shops facility.

4.10.2.2 Quantitative Site Assessments (Sampling and Analysis)

The characterization work completed during the Preliminary Engineering design phase included the collection and chemical analysis of 179 soil or railroad ballast samples from 44 locations for the first 9.3 miles of the BART alignment. Ten groundwater samples, consisting of two samples from wells and eight grab samples from boreholes, were collected and analyzed along this segment. Aquifer water quality testing in two locations, one adjacent to the planned underpass at Kato Road and one adjacent to the planned retained cut at Hostetter Road, were conducted. Finally, existing aquifer testing data just north of Montague Expressway was evaluated. The results of the characterization work are summarized below.



Metals in Soil and Ballast. Soil and ballast samples were analyzed for metals, with an emphasis on further characterizing arsenic and lead contamination as a primary concern. Findings are as follows:

- ❑ Shallow soil (less than 3 feet below the existing ballast) for the first 9.3 miles of the alignment evidenced potential for total or extractable arsenic and lead levels that could result in classification of the soil as a California hazardous waste if disposal were required.
- ❑ Other metals such as cadmium, copper, selenium, and zinc were found at regulated levels between East Warren Avenue and Dixon Landing Road; however, these were at locations that already tended to exhibit elevated arsenic and/or lead levels.

Organic Chemicals in Soil and Ballast. Soil and ballast samples were analyzed for a broad suite of potential organic contaminants. Findings are as follows:

- ❑ Pesticides were found often in shallow soil (less than 3 feet below ground surface) at relatively low levels.
- ❑ Polychlorinated biphenyls (PCBs) were not detected in soil.
- ❑ Semi-volatile organic compounds (SVOCs) were detected once in soil at a low level.
- ❑ VOCs were found at one location near Hostetter Road at a depth of 5 feet below ground surface at relatively low levels.
- ❑ Petroleum hydrocarbons classified as motor oil were found often in shallow soil with levels reaching as high as 1,300 milligrams per kilogram. Petroleum hydrocarbons classified as gasoline or diesel were found infrequently in soil at relatively low levels.

Metals in Groundwater. Results of the testing for metal in groundwater are as follows:

- ❑ Arsenic and lead (either total or dissolved) were not detected in any of the samples.
- ❑ In general, other dissolved metals were either not detected or detected at low levels.

Organic Chemicals in Groundwater. Results of the testing for organic chemicals in groundwater are as follows:

- ❑ At several locations (Dixon Landing Road, Capitol Avenue, south of Hostetter Road, and Lundy Avenue/Sierra Road intersection), relatively low levels of VOCs (typically representing chemicals found as components of fuels) were detected. The one detection of MTBE was found in groundwater near Dixon Landing Road.
- ❑ Gasoline-range and diesel-range petroleum hydrocarbons were found in groundwater near Lundy Avenue/Sierra Road and Capitol Avenue, respectively.
- ❑ Other organic chemicals such as PCBs, pesticides, and SVOCs were not detected in groundwater.

4.10.3 REGULATORY SETTING

The regulatory setting included in the FEIR describing federal and State laws and regulations applicable to hazardous materials remains applicable in the SEIR. Please refer to the FEIR, Section 4.11.2.2, for this discussion.

There have been very few, if any, significant changes in hazardous materials regulations since certification of the FEIR. Any changes regarding management of hazardous materials related to the Project are primarily due to negotiations between VTA and other parties that clarified: 1) the requirements related to contaminated soil and ballast during construction; and 2) the responsible party liable for clean-up of contaminated sites. The parties VTA has been in discussion with include the Union Pacific Railroad (UPRR), Department of Toxic Substances Control, and RWQCB.

The negotiations include the development of a Contaminant Management Plan (currently in draft form), with sections on sampling, reuse, transportation, disposal, stockpiling, and air monitoring during construction. The plan also includes a site-specific risk assessment for soil and ballast reuse and “reuse standards” below which soil and ballast can be reused. A discussion of the Draft Contaminant Management

Plan related to the reuse of soil and ballast is provided below. A discussion of the plan applicable to the construction phase only is provided in Section 4.18.5.6.

VTA purchased much of the UPRR railroad right-of-way (ROW) in December 2002 for part of the proposed BART alignment. Under the purchase agreement between the two parties, VTA is identified as the primary responsible party for sites along the former UPRR corridor that require clean-up as a result of the actions of UPRR or its predecessors. However, VTA and UPRR would share clean-up costs in accordance with a cost reimbursement agreement.

4.10.4 PROJECT IMPACTS AND MITIGATION MEASURES

The discussion of impacts included in the FEIR describing maintenance procedures during the operation phase, including dewatering activities where existing soil and groundwater contamination and/or contaminated surface water runoff may be present, remains applicable in the SEIR. For the tunnel, the vertical profile of the two tunnel bores would range from near the surface at each portal to depths of approximately 75 feet below ground surface (to the top of tunnel). Due to this depth, it is unlikely that hazardous materials would be encountered during routine maintenance activities of the tunnel.

The design requirements and best management practices (BMPs) included in the FEIR also remain applicable, such as development and implementation of a worker health and safety plan and, if required, Occupational Safety and Health Administration Hazardous Waste Operations and Emergency Response (HAZWOPER) training. The discharge of any water from dewatering activities would comply with National Pollutant Discharge Elimination System (NPDES) and/or municipal separate storm sewer systems (MS4) permit requirements. Where necessary, pump stations would be equipped with properly designed, operated, maintained, and monitored treatment systems appropriate for the contaminants detected at specific locations.

Other discussions of impacts, design requirements, and BMPs in the FEIR related to groundwater

flow directions and pathways, storm water runoff from BART facilities, and hazardous materials transport and disposal during the operation phase remain applicable in the SEIR.

New or updated information since certification of the FEIR applicable to hazardous materials includes soil and ballast reuse and several design changes including: the addition of alignment options from south of Curtis Avenue to Trade Zone Boulevard; the consolidation of two downtown San Jose stations; the addition of the No Parking Option at the Diridon/Arena Station and the realignment of the station; and the elimination of a parking structure site south of Brokaw Road at the Santa Clara Station.

Soil and Ballast Reuse. During the Preliminary Engineering design phase, the potential reuse of soil and ballast was evaluated with a discussion provided in the Contaminant Management Plan. The evaluation included an assessment of the risks to human health and the environment to determine appropriate reuse criteria. However, it should be noted that soil and ballast reuse is not required, or may not be an option due to geotechnical reasons or other characteristics, or there may be excess material. Such material would be disposed of in accordance with applicable laws and regulations.

The reuse criteria vary depending on the chemical concentrations in the material and the manner in which the soil or ballast would be reused, as potential threats to human health and the environment depend on who or what is in the vicinity of the reused material. For example, if the material would be reused near a stream, regulatory levels appropriate for the protection of water quality and biological resources must be considered. If the material would be reused near a residential area or in an area of potential groundwater use, other criteria must be considered such as the U.S. Environmental Protection Agency, Region 9, Preliminary Remediation Goals or the RWQCB's Environmental Screening Levels, respectively. Regardless of the criteria considered, the most protective criteria would be selected as the reuse standard for that particular reuse. The Draft Contaminant Management Plan proposes the following five reuse scenarios for soil and ballast listed in anticipated order of lowest to highest acceptable chemical concentrations:

- ❑ Unrestricted Offsite Reuse: soil or ballast could be reused in an offsite area without restriction, including residential uses or near a stream or shallow groundwater.
- ❑ Unrestricted Onsite Reuse: soil or ballast could be reused in an onsite area, specifically including areas near a stream or shallow groundwater.
- ❑ Reuse in Stations and Facilities: soil and ballast could be reused in areas where a relatively large number of people are present (such as stations and maintenance facilities) but not near a stream or shallow groundwater.
- ❑ Reuse in Right-of-Way: soil or ballast could be reused in areas where relatively few people are present for relatively short periods of time, but not near a stream or shallow groundwater.
- ❑ Reuse in Encapsulation: soil or ballast could be reused in engineered encapsulations (under barriers or other structures and covered on all exposed sides by clean material). Encapsulations would not be placed within 50 feet of a stream or within 5 feet of groundwater.

The majority of ballast contains arsenic levels that are higher than the reuse standards for uses other than in an encapsulation.

Design Change 14. Curtis Avenue to Trade Zone Boulevard. In the FEIR, the BART alignment would be in a long retained cut starting from South of Curtis Avenue, continuing past the Great Mall and underneath Montague Expressway, Capitol Avenue, and Trade Zone Boulevard, and ending south of Trade Zone Boulevard (STA 337+00 to 411+00). Along this portion of the alignment, groundwater is impacted with residual petroleum hydrocarbons from the former Ford Automobile Assembly Plant site between STA 337+00 and 348+00 and chlorinated solvents from Jones Chemical and North American Transformer sites between STA 350+00 and 360+00.

In the SEIR, there are four alignment options from south of Curtis Avenue to south of Trade Zone Boulevard: Retained Cut Long, Retained Cut Short, Aerial Long, and Aerial Short. Each would impact the contaminated areas differently:

The Retained Cut Long Option is the same con-

figuration as that described and analyzed in the FEIR.

The Retained Cut Short Option (STA 358+00 to 411+00) would avoid the contaminated area from the Ford Automobile Assembly Plant site, but would be located at the southern end of the contaminated area from the Jones Chemical and North American Transformer sites.

The Aerial Long Option (STA 333+00 to 415+00) would mostly avoid both contaminated areas due to the aerial configuration of the alignment. However, the aerial structure would require piles that would be located within both contaminated areas.

The Aerial Short Option (STA 353+00 to 415+00) would avoid the contaminated area from the Ford Automobile Assembly Plant site. At the southern end of the contaminated areas from the Jones Chemical and North American Transformer sites, a retained fill configuration precedes the aerial structure (STA 352+00 to 361+00). Therefore, this option avoids both contaminated areas.

Design Change 40. Downtown San Jose Station. The elimination of the Civic Plaza/SJSU Station avoids two contaminated sites identified in the FEIR. The first site is Deluxe Cleaners at 224 East Santa Clara Street, between 5th and 6th streets. Contaminants in soil and groundwater include stoddard solvent. This property was investigated in 2003 as part of the San Jose Civic Center (City Hall) construction. The second site is Downtown Auto Express at 154 East Santa Clara Street, between 3rd and 4th streets. Contaminants in soil and groundwater include total petroleum hydrocarbons as gasoline (TPHg) and benzene, toluene, ethylbenzene, and xylenes (BTEX). This site received regulatory closure on January 12, 1998 (SCVWD Case Closure Letter, Fuel Leak Case No. 14-379, SCVWDID# 0751E08L02f). In the SEIR, the tunnel bores pass deep beneath these two locations, and it is unlikely that residual hazardous materials would be encountered during routine maintenance activities of the tunnel.

Design Change 42. Diridon/Arena Station and Alignment. In the FEIR, a parking structure on 2.8 acres is identified adjacent to and immediately west of the HP Pavilion at the site of an existing surface parking lot. In the SEIR, there are two options for parking at the Diridon/Arena Station: Parking Structure Option and No Parking Option. Under the Parking Structure Option, the parking structure is in the same location as that described in the FEIR; however, the footprint is increased to 4.5 acres.

The soil underneath the existing surface parking lot is contaminated with polynuclear aromatic hydrocarbons (PAHs) (a product of incomplete combustion). The PAHs are mixed with soil and debris, and are in two general locations: 1) those left in-situ and later covered with the surface parking lot; and 2) those removed during excavation of the HP Pavilion basement and relocated to a specially designed and constructed encapsulation beneath the parking lot.

Although the footprint of the parking structure under the Parking Structure Option has increased compared to that described in the FEIR, implementation of this option would not result in any new impacts to this contaminated site. However, implementation of the No Parking Option would avoid impacts to this site.

During the Preliminary Design phase, the alignment of the Diridon/Arena Station was shifted and angled to avoid construction under the San Jose Diridon Caltrain railroad tracks. With this shift, the east end of the station box would be partially located within the contaminated parking lot site between Montgomery and Autumn streets. As mentioned above, a deed restriction on this property restricts certain activities that would extend beyond 1 foot into the soil or would use shallow groundwater for drinking water purposes or industrial/commercial use. The deed restriction includes a provision that allows for the application by the property owner for a variance from the Santa Clara Valley Water District. As the Project would require excavation beyond 1 foot into the soil on a portion of the property, a variance will be required to construct the Diridon/Arena Station.

Design Change 52. Santa Clara Station. In the FEIR, one option for a parking structure is identified on 4 acres south of Brokaw Road, which would displace a portion of the former FMC facility. Soil and groundwater beneath this site is impacted with petroleum hydrocarbons, metals, and VOCs. The primary chemicals of concern are TCE and PCE in groundwater. Environmental investigations at this site include: 1) groundwater extraction and monitoring at

328 West Brokaw Road; and 2) remediation, including two groundwater treatment systems, and monitoring at 1125 Coleman Avenue.

In the SEIR, the site south of Brokaw Road is eliminated, as the parking structure and potential surface parking/future transit facilities would be located north of Brokaw Road. Therefore, any impacts to the site south of Brokaw Road have been eliminated.

CONCLUSION

The design changes would not create hazardous materials impacts during operation of the Project. Several of the design changes would reduce or avoid impacts to contaminated sites previously identified in the FEIR. The design requirements and best management practices related to hazardous materials included in the FEIR remain applicable. No mitigation is necessary.