4.12 HAZARDOUS MATERIALS

4.12.1 INTRODUCTION

This chapter discusses the potential presence or release of Oil or Hazardous Materials (OHM) in relation to the alternatives under consideration during their construction and operation.

Potential operational impacts of the alternatives may include spills or releases of OHM. However, spills of diesel fuel or hydraulic fluids as a result of a train derailment are not anticipated to occur. Derailments are an extremely rare event, particularly on tracks that are maintained in good condition.

The spill or release of OHM in the process of constructing the alternatives is an unlikely event, and measures will be required to prevent and control any such spills. The construction contractors will implement a Spill Control Program in compliance with the Massachusetts Contingency Plan (310 CMR 40.0000, "the MCP") and MBTA policy. These measures will be employed both at the rail reconstruction sites and station construction sites. The following practices will employed on site to prevent, reduce, and clean up spills.

- All spills will be reported to the MBTA and will be reported to appropriate state and/or federal agency if the reportable quantity is exceeded.
- Spill cleanup material will be kept in any chemical storage area.
- All spills will be cleaned up immediately after discovery.
- A spill report will be prepared after each occurrence.
- An appropriately trained employee involved in day-to-day operations will be identified to be the spill prevention coordinator. Each employee will be instructed to report spills to the spill prevention coordinator.
- An inventory of construction and maintenance materials (and corresponding Material Safety Data Sheets) will be maintained as part of the Storm Water Pollution Prevention Plan (SWPPP) for the project.

While the construction activity itself is unlikely to result in the spill or release of OHM, constructing the South Coast Rail alternatives may require acquisition of properties where oil or hazardous materials may already be present in soils or groundwater, or in existing buildings, potentially under conditions that could constitute a prior release pursuant to the MCP. Construction may also encounter contaminated soils or groundwater, or other OHM, within the railroad rights-of-way. The MCP defines the responsibilities of property owners with regard to oil and hazardous material. Several state and federal regulatory programs also govern the requirements for site remediation, transport of regulated hazardous materials, and potential spills during construction.

Rail beds can be contaminated with oil or hazardous materials (OHM) from a variety of sources, some of which may be exempt from the reporting requirements of the MCP, as stated in the Secretary's Certificate dated April 3, 2009. However, once the materials are excavated or moved, they may be subject to the MCP or other regulations. The Secretary's Certificate recommended that a detailed pre-characterization of soils be undertaken as recommended by the Massachusetts Department of Environmental Protection (DEP) for the station sites and all areas on the right-of-way where construction or rehabilitation is proposed, and to include a draft soil management plan in the Environmental Impact Report (EIR).

Several locations along the right-of-way and at station locations may contain or have been confirmed to contain subsurface soil and groundwater contamination; underground storage tanks (USTs), and regulated building materials within the buildings to be demolished. Contaminated sites would require the implementation of response actions, as per the MCP, in conjunction with site construction following property acquisition. Response actions would typically consist of the screening and sampling of soil for laboratory analysis of constituents of concern (COCs) and ultimately risk analysis and potentially risk reduction methods such as off-site export of contaminated soil.

After acquisition of a contaminated property, the new owner would be responsible for its cleanup under the MCP. It is therefore advisable that any hazardous waste properties be identified prior to their purchase since the applicant may qualify as an "eligible person" under the Massachusetts Brownfields Act. An "eligible person" is defined under the Act as an owner or operator who did not own or operate the site at the time of the release and who did not cause or contribute to the contamination at the site. If the applicant were determined to be an "eligible person," it could re-establish MCP deadlines for the submittal of response actions and related reports, referred to as Comprehensive Response Actions. The applicant would be required to complete response actions for the property if the release is to soil only. However, the response actions must be completed for the entire site, which may extend beyond the property boundaries, if the release is for impacts to ground water and/or surface water. Response actions may need to be continued beyond what is required for station construction, as a Permanent Solution must be achieved for site closure.

The following provides a summary of each of the proposed Alternatives and describes the potential OHM conditions within the locations that may be affected by the South Coast Rail alternatives. OHM in the vicinity of alternatives, including alignment corridors, station locations, and layover facilities are discussed below.

4.12.1.1 RESOURCE DEFINITION

Recognized Environmental Conditions (RECs), as defined by the ASTM E1527-05 standard practice (Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process), "means the presence or likely presence of any hazardous substance or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws."

In the Commonwealth of Massachusetts, the management of hazardous substance and petroleum products when released into the environment is generally governed by the MCP. Hazardous substances include oil, hazardous material and hazardous waste and are defined as those substances that that may constitute a present or potential threat to human health, safety, welfare, or the environment.

Hazardous materials, as defined in the MCP, include any material in whatever form that, because of its quantity, concentration, chemical, corrosive, flammable, reactive, toxic, infectious or radioactive characteristics, either separately or in combination with any substance or substances, constitutes a present or potential threat to human health, safety, welfare, or to the environment, when improperly stored, treated, transported, disposed of, used, or otherwise managed.

Hazardous wastes are waste materials that, because of their quantity, concentration, or physical, chemical or infectious characteristics, may cause, or significantly contribute to an increase in serious

irreversible, or incapacitating reversible illness or pose a substantial present or potential hazard to human health, safety, public welfare or the environment when improperly treated, stored, transported, used or disposed of, or otherwise managed. Oil includes insoluble or partially soluble oils of any kind or origin or in any form, including, without limitation, crude or fuel oils, lube oil, asphalt, insoluble or partially soluble derivatives of mineral, animal or vegetable oils and white oil.

When a hazardous substance impacts (or potentially impacts) an environmental medium, then a release (or threat of release) of OHM is said to occur. As per the MCP, a "release" is defined as "spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment." A threat of release "means a substantial likelihood of a release of OHM which requires action to prevent or mitigate damage of health, safety, public welfare or the environment which may result from the release."

As a further refinement of the ASTM E1527-05 definition of RECs, MCP terminology and references are used, since the management of OHM once released in the environment is governed by the MCP.

4.12.1.2 REGULATORY CONTEXT

Properties with confirmed OHM impacts are generally managed in accordance with the MCP, 310 CMR 40.0000 and associated policies or guidance issued by the DEP. However, depending on the type and concentrations of OHM present at a property, other regulations implemented by the Commonwealth of Massachusetts or the U.S. Environmental Protection Agency (EPA) may apply.

4.12.1.3 METHODOLOGY

The Build Alternatives would require construction, including soil removal, within the station, bypass, layover facility/right-of-way locations and alternatives. Properties would need to be acquired (in part or in full) for station, bypass, and layover facility construction. Ballasts, railroad ties, and subsurface soil would need to be removed along existing and out of service railroad tracks. Soil would also need to be removed for the construction of new stations and new rail segments. Several buildings would also need to be demolished.

These activities have the potential to result in the following:

- Encountering contaminated soil or ground water;
- Disposing of contaminated materials;
- Disposing of solid waste containing lead-based paint, asbestos-containing materials, or other regulated materials such as railroad ties.
- The new owner would become responsible for compliance with the MCP for any property that was acquired for station, layover facility, or track construction. Remediation of contaminated "brownfield" sites would be a beneficial effect of the alternatives.

Types of Impacts

Potential impacts at each site were determined based on the type of REC identified through Environmental Site Assessments (ESAs). A detailed description of each REC and potential environmental concern or *de minimis* condition is provided in each of the ASTM Phase I ESAs which were prepared for the proposed stations, bypasses, and layover facilities for the alternatives under consideration. Also

included in the ESAs, and in the tables provided in the following sections, is the list of state hazardous waste sites and corresponding Release Tracking Numbers (RTNs) on which the RECs are based.

In order to permit a user or purchaser of a property to satisfy one of the requirements to qualify for the "innocent landowner, contiguous property owner, or bona fide prospective purchaser" limitations on the landowner liability protection, it is customary practice to conduct a Phase I ESA on the prospective property. The ESA constitutes "all appropriate inquiry" (AAI) into the previous ownership and uses of the property consistent with good commercial or customary practice. An AAI or ESA is conducted to determine if RECs, defined in Section 4.12.1.1, are likely to be present at the prospective property. A Phase I ESA was performed for all properties which may be subject to potential acquisition for the South Coast Rail alternatives under consideration, including stations, bypasses, and layover facilities.

ASTM E 1527-05sets forth a standard practice for determining whether a REC is present. The ASTM Standard Practice includes a review of databases, a site reconnaissance, interviews, and a review of sources such as historic aerial photographs, topographic maps, and Sanborn maps by an Environmental Professional to determine if RECs are present at the property.

Potential impacts were evaluated for each REC identified, based on available information, and classified as either high, medium, or low. RECs that are deemed to have a high potential impact consist of sites such as those with confirmed soil, ground water, and/or indoor air impacts that were either not reported to the Massachusetts Department of Environmental Protection (DEP), or were reported to the Massachusetts DEP and have undergone some type of cleanup, or remain an active case. Those properties that have undergone a cleanup and have achieved a Permanent Solution, such as a Response Action Outcome (RAO), are still considered to have a high potential for impacts. This may be due to changing site use or regulations, construction activities, a DEP audit of the RAO, or identification of new environmental conditions (such as indoor air impacts in nearby structures). This could trigger the need to conduct additional assessment and/or remediation activities. Other RECs with high potential impacts are those in which underground storage tank (UST) installation records exist but for which removal documentation is absent, indicating that USTs may be present. Those where the historic use of the property indicate that substantial quantities of OHM were used and could constitute a release of OHM are also classified as high potential impact. For a property having one or more high RECs where the likelihood of contamination is high or confirmed, implementation of response actions may be required as per the MCP. Additional investigations may be conducted to determine if MCP response actions are necessary and what type of response action is appropriate to reduce risk at the property.

Properties with RECs that are deemed to have a medium potential impact consist of properties such as those with potential sources of OHM with limited or inconclusive information. For instance, the example of a single-walled steel UST in which the UST has been removed, but no documentation was available to show that proper sampling was conducted at the time of the UST removal to confirm that the UST did not leak, may be deemed a REC of medium potential impact. For a property having one or more medium RECs, additional investigations may be required to assess whether a release of OHM has actually occurred. In some such cases, contaminated media could be encountered and response actions would need to be implemented as per the requirements of the MCP, resulting in increased costs as well as potential schedule delays.

RECs that have low potential to impact a site exist at those properties where OHM is present, but information suggests that there is a reduced likelihood that a release occurred or contamination may be encountered. Low potential RECs include off-site properties where releases have occurred that have been cleaned up in compliance with the MCP or USTs where proper documentation is available

indicating that a release has not occurred, as well as properties that have USTs equipped with leak detection, overfill protection, , spill containment, and other currently required or recommended UST system features. A property where one or more low RECs are identified has a lower likelihood that a release has occurred.

Depending on the type of REC, additional investigations may be warranted to assess whether a release has actually occurred. Soils to be excavated may be characterized as part of construction, so as to identify potential COCs that may be encountered. In the event that contamination is identified, response actions would be implemented in accordance with the MCP. The results of an investigation and/or screening could reveal the presence of contaminated media and inform risk assessment.

De Minimis Impacts

The ESA Opinion also includes a section for potential environmental concerns or *de minimis* conditions. Such conditions have less of a potential to impact properties than RECs, and are conditions generally not subject to extensive regulation. An example of a potential environmental concern or *de minimis* condition would be the potential presence of asbestos-containing materials or lead-based paint, based on the age of the building, which would have to be properly managed during building demolition and would require proper disposal.

Asbestos-containing materials were identified as a potential environmental concern or *de minimis* condition for the majority of the buildings that would need to be demolished to implement the alternatives. Such materials include roof flashing, tiles, and other materials that may be present in the building materials based on the age of the buildings. In addition, lead-based paint, mercury and polychlorinated biphenyls (PCBs) may also be present in the building materials and/or fixtures.

The presence of railroad tracks at or adjacent to proposed stations/bypasses represents a potential environmental concern or *de minimis* condition common to all stations and bypasses, as railroad operations can be sources of OHM. Removing ballast, ties or soil along railway corridors would require proper disposal; however, a detailed risk assessment or risk reduction measures may not be required if the material is either statutorily exempt from MGL c. 21E or is consistent with background conditions. The soil exemption may apply only if the soil remains *in situ*. If the material is not exempt from MGL c. 21E and not consistent with background conditions, then appropriate response actions must be performed and an RAO or Remedy Operation Status (ROS) prepared as a regulatory endpoint.

Beneficial Effects

The alternatives would likely have a positive effect on confirmed areas of soil and ground water contamination in the proposed station and layover locations. On-site contamination encountered would be assessed and if necessary, remediated prior to and during construction activities as per the MCP. Re-use of as much excavated soil as possible, including impacted soil with concentrations below the applicable MCP standards, is the preferred option and is recommended if a pre-risk assessment screening of the material shows that there are no limitations on risk associated with the current and foreseeable use of the property. Remediation of soil which could not be re-used would most likely consist of soil excavation and off-site disposal.

The following describes the locations where Phase I ESAs were conducted, the methodology used for these assessments, and the methodology used to evaluate the potential impacts associated with RECs (the potential presence of OHM) at each site.

Phase I Environmental Site Assessments Study Area

To assess the potential for encountering OHM during the implementation of the South Coast Rail project, Phase I ESAs were prepared for station locations and layover facilities associated with the alternatives, including the following.

King's Highway	Easton Village	Taunton Depot
Whale's Tooth	Raynham Place	East Taunton (South)
State Pier	Whittenton	Church Street Layover
Freetown	Barrowsville	ISP Layover
Fall River Depot	Taunton (Dean Street)	Wamsutta Layover
Battleship Cove	Downtown Taunton	Weaver's Cove Layover
North Easton		

Phase I ESAs were not performed for properties that will not involve property acquisition or ground disturbance, such as the Rapid Bus, which includes Galleria Station. Phase I ESAs were prepared for two track segments, the proposed the Attleboro Bypass and the Whittenton Branch, since land will need to be acquired. The Attleboro Bypass would connect the Northeast Corridor to the Attleboro Secondary in the Attleboro Alternative and the Whittenton Branch is part of the Whittenton Alternative.

The existing corridors were not evaluated since no land acquisition or substantial ground disturbance are expected to occur. However, it can be assumed that there is the potential for adverse impacts to be present in soils or ground water in these areas, as railroad operations are common sources of OHM releases, such as semi-volatile organic compounds.

Phase I ESA Methodology

Phase I ESAs were performed as per the ASTM E1527-05 Standard Practice and All Appropriate Inquiries (AAI) pursuant to 40 CFR Part 312. The purpose of the Phase I ESAs is to identify RECs in connection with the properties, to the extent feasible pursuant to the process described in the Standard. The Phase I ESAs were completed using the Standard as guidance. The only major modification to the methodology of the ASTM E1527-05 standard is that a "User" was not identified and therefore not asked to perform tasks to help identify the possibility of RECs in connection with the property. The methodology for the Phase I ESAs included the following:

- Perform a computer database search of federal and state files. The federal databases will include the current Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS), National Priorities List (NPL), Resource Conservation and Recovery Act (RCRA), Storage and Disposal (TSD), RCRA Generators, and Emergency Response Notification System (ERNS) list. The state databases will include the state equivalent CERCLIS list, spills, USTs, Solid Waste Landfills (SWL), and public water supply lists.
- Review available Massachusetts Department of Environmental Protection (DEP) files to provide more information about reported releases of OHM identified through the database search on or adjacent to the site. The DEP files may provide additional information regarding past ownership; historic site usage; past usage, storage and disposal of OHM on and adjacent to the subject site; and other evidence of potential environmental impacts.
- Review available municipal and historic files to assist in confirming ownership history and past usage. Resources include tax records, aerial photographs, Health Department records, Building

Department records, Fire Department records, Conservation Commission records, and Sanborn fire insurance maps. The site history review may also identify reports of historic spills, disposal areas, or other past releases of OHM on or adjacent to the property.
- Review previous site documents including an ESA, if applicable and/or available for review.
- Perform a visual site reconnaissance to observe the site for overt evidence of a release or threat of release of oil and/or hazardous materials within interior and exterior portions of the entire property. The uses of adjoining properties are also documented.
- Interview past and present owners and occupants, and state and/or local government officials, whenever possible, to obtain information regarding the uses and physical characteristics of the property.

REC Impact Criteria

The ASTM Standard requires an opinion regarding the potential for each REC to affect a site. The potential impact for each REC identified was classified as high, medium, or low, based on available information. Criteria used to determine the potential impacts are discussed below.

- RECs that are deemed to have a high potential impact consist of sites such as those with confirmed soil, ground water, and/or indoor air impacts that either were not reported to DEP or were reported to the DEP and have undergone some type of cleanup or remain an active case. Those properties that have undergone a cleanup and have achieved a Permanent Solution, such as a Response Action Outcome (RAO), are still considered high potential impact due to the fact that changing site use or regulations, construction activities, a DEP audit of the RAO, or identification of new environmental conditions (such as indoor air impacts in nearby structures) could trigger the need to conduct additional assessment and/or remediation activities. Other RECs with high potential impacts are those for which UST installation records exist but for which removal documentation is absent, indicating a likelihood that USTs may be present, and those where the historic uses of the property indicate that substantial quantities of OHM were used and could constitute a release of OHM.
- Properties with RECs that are deemed to have a medium potential impact consist of properties such as those with potential sources of OHM with limited or inconclusive information. For instance, a single-walled steel UST which has been removed, but limited or no documentation was available to show that proper sampling was conducted at the time of the UST removal to confirm that the UST did not leak, may be deemed a REC of medium potential impact.
- RECs that have low potential to impact a site include off-site properties where releases have occurred but have been mitigated or USTs where proper documentation is available indicating a release has not occurred, as well as for properties that have more recently installed USTs equipped with leak detection, are double walled, and/or contain overfill protection and spill containment.

The findings also include a section for potential environmental concerns which are also known as de minimis conditions. These potential environmental concerns typically have less potential to impact a property than RECs, as they generally do not present a threat to human health or the environment and would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. An example of a potential environmental concern or de minimis condition would be the potential presence of asbestos-containing materials and lead based paint based on the age of the building, which would have to be properly managed during building demolition.

4.12.2 EXISTING CONDITIONS

The following describes RECs and potential environmental concerns relative to OHM associated with the alternatives, beginning with the alignments of rail alternatives followed by those stations located in the Southern Triangle (New Bedford Main Line followed by Fall River Secondary), and proceeding with stations and layover facilities located along the alternatives alignments. The conclusions of the Phase I ESA that was previously performed for the Stoughton Alternative right-of-way is provided at the end of this discussion. It should be noted that the presence of railroad tracks at or adjacent to a site is identified as a potential environmental concern common to all stations, bypasses, and corridors, as railroad operations are often sources of OHM.

4.12.2.1 RAIL ALIGNMENTS

Attleboro Alternative

Attleboro Bypass Rail Segment

The Attleboro Bypass comprises a linear corridor that is approximately three miles in length and 100 feet in width that begins near Pike Avenue in Attleboro and ends near Gilbert Street in Mansfield (Figure 4.12-1). The site consists of 27 parcels owned by a combination of private parties and municipalities. The majority of the site is undeveloped and forested. Existing active railroad tracks abut the northern and southern site boundaries and an overhead power line (National Grid) is adjacent to the proposed bypass. Based on the tasks conducted for the Attleboro Bypass Phase I ESA, one REC and no potential environmental concerns were identified. This information is described below.

REC #1 – Shpack Landfill, Union Road, Norton

The Shpack Landfill and associated ALI Landfill south of Union Road in Norton, approximately 700 feet south of the proposed Attleboro Alternative, is listed on the National Priorities List (NPL) as a Superfund Site by the EPA. The landfill, which was formerly privately operated, accepted wastes from the 1940s until 1965. A survey by the U.S. Department of Energy detected radioactive contaminants, primarily radium and uranium, in soil and ground water of the property.

According to reports published online by the EPA[1], the ground water contains volatile organic compounds (VOCs), including vinyl chloride and trichloroethene (TCE), as well as heavy metals, including chromium, barium, copper, nickel, manganese, arsenic, cadmium, and lead. Sediments on the edge of the nearby swamp and soils contain radionuclides, including radium and uranium. Surface water in the swampy area is contaminated with radium and alpha and beta particles, as well as organic compounds. Deep ground water is believed to flow to the north and northwest, toward the proposed southernmost bypass connection to the Attleboro Secondary. Shallow ground water is believed to flow radially to the west, north, and east. The hydraulic conductivity of soils on the property shows that ground water flow gradients are very low. Cleanup at the landfill is currently underway and is proposed to be completed in 2010.

Based on this information, conditions present at this property could impact soil or ground water associated with the Attleboro Alternative and this is considered a REC with a low potential impact.

[1] United States Environmental Protection Agency NPL Listing and Pertinent Documents for the Shpack Landfill accessed at http://www.epa.gov/region1/cleanup/resource/findnesites.html

Stoughton Alternative

Stoughton Alternative Right-of-Way

As part of a previously prepared Phase I ESA for the Stoughton Alternative, the MBTA examined the right-of-way between Canton Junction and Weir Junction in 1998. Database searches were also evaluated between Canton Junction to Stoughton Station in January 2000.

Based on the conclusions of the 1998 Phase I ESA, the following release sites may impact the Stoughton Alternative right-of-way. These sites include Cohen Property, General Cable Corporation, North Easton Historical Industrial Avenue, and Cyn Environmental. A brief description of each property is included below.

- The Cohen Property, located in Taunton, was listed as a "not proposed CERCLIS" site. This site was comprised of scattered fill consisting of automobile parts, coal slag, scrap metal, and construction debris. Analytical results indicated the presence of six VOCs, PCBs, and inorganic compounds above detectable concentrations in soil. The City of Taunton has developed a reuse program with the EPA to use a portion of the site for Department of Public Works storage. The ground water flows to the east toward Ingell Street. Groundwater contaminants are consistent with the soil analytical results.
- General Cable Corporation located in Taunton is listed for two spills and releases of No. 4 and No. 2 fuel oil. This site is also listed as the prior location eight USTs, now removed, and as a RCRA Small Quantity Generator.
- North Easton Industrial Avenue is a potential environmental concern due to the historical use of the properties since the early 1900s.
- Cyn Environmental Services, located in Stoughton, is listed as Adequately Regulated outside of the MCP. Cyn is regulated by RCRA guidelines and is a RCRA Small Quantity Generator with several spills listed for petroleum products.

In January 2000, the MBTA performed an additional environmental database search for the Stoughton Alternative from Canton Junction to Stoughton Station. Four potential environmental concerns were identified from the database reports. Additional information was obtained from the DEP for sites which are listed, including the Canton Landfill on Pine Street and three state listed hazardous waste sites. Information from the DEP on the Canton Landfill indicated that ground water contamination was migrating away from the railroad and does not pose a concern to the right-of-way. The three state listed hazardous waste sites include a Texaco gasoline station at 731 Washington Street, the Canton Department of Public Works facility, and the Lamb Company at 85 Jackson Street. All three sites were reviewed and determined not to have an environmental impact on the right-of-way due to the distance or remedial actions undertaken at these sites.

Whittenton Alternative

Whittenton Branch

The Whittenton Branch consists of approximately 3.4 linear miles of inactive railroad right-of-way that is 66 feet in width and is located between Whittenton Junction (West Britannia Street in Taunton) and extending northeast toward Raynham Junction (the intersection of Broadway and Center Street in Raynham) (Figure 4.12-2). According to aerial photographs and reports that were reviewed for the Phase I ESA, the site appears to have not been used as a railroad since at least 1950. The majority of the site is unpaved and unused, with the exception of trespassers. A small section of the right-of-way,

located to the south of Whittenton Street, is used as a paved access roadway for the nearby Aggregate Industries facility.

Based on the tasks conducted for the Whittenton Bypass Phase I ESA, four RECs and five potential environmental concerns were identified and are described below.

REC #1 – Transformer Oil Releases on Adjoining Property, RTN 4-18532

On July 10, 2004, a sudden release of approximately 590 gallons of transformer oil occurred at the Parkman Construction site (also referred to as Dyecraftsmen, Inc.), located at 437 Whittenton Street. This release site is located adjoining and to the west of the subject site and was assigned RTN 4-18532 by the DEP. The fire department records indicated that oil may have migrated to catch basins and adjacent asphalt surfaces. The DEP records indicated that a Class A-2 RAO was submitted to the DEP on July 15, 2005, indicating that a Permanent Solution was achieved; however, contamination was not reduced to background. The RAO report indicated that historical operations may have led to additional transformer oil releases that should be addressed and managed as separate releases. The potential migration of this transformer oil release, as well as indications of historical transformer releases, constitutes a REC with a medium potential impact.

REC #2 – Historic Use of Adjoining Property as Industrial Manufacturing

According to historical reports, the adjoining property located at 437 Whittenton Street, was used for industrial processes for over 100 years. The property was initially used in the late 1800s and early 1900s as a cotton mill, which included the treating and dying of materials. As indicated by UST records and historical maps, these industrial processes likely used large quantities of OHM including fuel oil, machining oil, dye, and bleach. Although no historical documented releases (other than REC #1 described above) were identified in connection with this property, given the industrial history and close proximity to the site, the potential presence of OHM is considered to be a REC with a medium potential impact.

REC #3 – Indication of Significant Historical Dumping

Significant dumping was observed in the wetland area along Segment 1 of the right-of-way consisting of primarily used tires, but also including an old heating oil tank, an oven, car doors, five gallon buckets, a gas can, and other trash. The dumping was identified as an environmental concern given the type and magnitude of discarded materials, including OHM storage containers and at least 50 tires. This dumping has occurred in a wetland habitat and, therefore, has been identified as a REC with a medium potential impact.

REC #4 – Central Oil Company, 728 Broadway, Raynham, RTN 4-16976

A kerosene release was identified at the Central Oil Company, with an address of 728 Broadway, Raynham that was reported to the DEP on April 1, 2002.

RTN 4-16976 was assigned to the release. The current facility status for this site is classified as Tier 1D, where the responsible party fails to provide the required submittal to the DEP by a required deadline. During the site reconnaissance, several large aboveground storage tanks were observed at the Central Oil Company facility, located immediately to the east of the right-of-way. The ground water directional flow at the facility is not known. These tanks and secondary containment appeared to be in below

average condition; however, this was not confirmed, as the Central Oil Company facility was not accessed during this site reconnaissance. Given these observations, the release history, the Tier 1D status and the close proximity to the site, the release and observations associated with the facility have been identified as a REC with a high potential impact.

Potential Environmental Concerns

The Whittenton Branch has five potential environmental concerns, including the following.

- During the site reconnaissance, tires, televisions, piles of fibrous material, and other miscellaneous debris were observed in a wooded area of the site. The source of the material was not determined, although some of the debris was identified as household goods and other material possibly derived from an industry using fibrous materials. The disposal of this material on the site is of potential concern because the nature of the debris is unknown and could potentially contain contaminants that would release to the surrounding environment.
- Three leaking underground storage tank (LUST) sites located between 2,000 and 3,000 feet to the east of Segments 3 and 4 of the site (see Figure 4.12-2) were identified and are listed below:
  - Pop's Service Station, 212 Broadway, Taunton;
  - Broadway Gulf (Sunoco) Station, 225 Broadway, Taunton;
  - Mystic Gas & Properties, 242 and 252 Broadway, Raynham.
- Local ground water flow direction is reportedly toward the south; however, there are also indications that a municipal public water supply well field is drawing ground water towards the west. Each of these three properties has a history of LUSTs and related releases of petroleum. Given the proximity to the site and the anticipated ground water directional flow, these properties are not likely to impact the site but pose a potential environmental concern.
- Historical gravel pits and current observed stump dump operations currently overlap the right-of-way. Piles of wood and loam were observed across several acres of land. No solid waste permit or other listing for this operation was identified during this assessment.
- Miscellaneous debris and an old abandoned truck were observed outside of a horse barn and a cart path connecting the horse barn property to the site, situated along Segment 4 (see Figure 4.12-2). The debris and contents of the horse barn could be a source of OHM.
- A Taunton Municipal Light Plant substation is located adjacent to the site at the southwest portion of Segment 1 (see Figure 4.12-2). There was no indication of spills or releases at the substation and there was no labeling indicating the presence of PCBs on the electrical equipment. However, the operation of this equipment adjacent to the site has the potential to release transformer oil and other OHM onto the site.

4.12.2.2 STATIONS

Southern Triangle

Battleship Cove Station Site

The Battleship Cove station site is located on a portion of land east of Water Street and west of Route 138 in Fall River, Massachusetts with an address of 24 Ponta Delgada Boulevard (Figure 4.12-3). According to the property field cards obtained from the Fall River, Massachusetts tax assessor's database, the site consists of a portion of two parcels. The two parcels total 0.779 acres; however, only approximately 0.33 acres comprise the site. The property is currently occupied primarily by the "Portas

da Cidade" or "Gates of the City" monument, which includes a fountain, flags, and a grassy area. The majority of the site consists of an asphalt paved driveway, concrete sidewalk, and concrete memorial, which was constructed in 2005. The area surrounding the asphalt driveway consists of landscaped grass.

Based on the tasks conducted for the Battleship Cove Station Phase I ESA, two RECs and no potential environmental concerns were identified. The RECs are described below.

REC #1 – Historical Use of the Adjoining Properties

As early as 1888, Sanborn maps indicate that the property adjoining the site to the north at 84 Anawan Street was used as a manufactured gas plant, referred to as the Fall River Gas Works. The Fall River Gas Works at the time housed iron gas holders and a coal house. A Sanborn map from 1905 shows an addition of a crude oil tank and "gasometer" to the gas manufacturing property, as well as the new ownership by Borden & Remington chemical storage of a property immediately to the northeast of the site at 115 Anawan Street. A gas tank on the Borden & Remington property was also constructed and abutted the northwestern corner of the site. The 1933 map showed that up to 15 gas "caustic" materials storage tanks were also present on the Borden & Remington property at least through 1976. The "empty oil tank" adjoining the northeast corner of the site is currently present at the New England Gas Company property.

According to the computer database report, ten 10,000-gallon USTs were removed from a property located at 115 Anawan Street, which is north of the site. In addition, two USTs (one 5,000-gallon gasoline and one 2,000-gallon diesel) were removed from the New England Gas Company with an address of 84 Anawan Street. It is not known if contamination was encountered at the time of the UST removal. In addition, the general practices at the properties of gas manufacturing and chemical storage could have contributed to environmental impacts at the site.

Land to the west, which is currently owned by Borden & Remington Corporation, has also been used for industrial purposes as early as the mid-1800s. The 1933 Sanborn map indicates that the American Printing Company was located at the property until the Firestone Rubber & Latex Company began its operations in approximately 1970. Numerous storage tanks can be seen on these properties from the Sanborn maps. In addition, the property is currently used by a manufacturer of latex and rubber.

The historical use of the adjoining properties including numerous storage tanks containing OHM is considered a REC with a medium potential impact due to the potential for releases to have occurred over the past 150 years of industrial use and these impacts could potentially migrate and affect the quality of site media.

REC #2 – Analytical Results from Previous Environmental Report

A Limited Phase II Environmental site Assessment (Phase II) was completed for the site in November 2001. During Phase II investigation, soil samples submitted for laboratory analysis indicated concentrations of several polynuclear aromatic hydrocarbons (PAHs) and lead above the Reportable Concentrations (RCS-2) representing concentrations that may be indicative of urban fill. Based on the results from the Phase II investigation, the soil could currently contain contamination above the applicable standards. The environmental impacts discovered on the site are considered a REC with a high potential impact.

Fall River Depot Station Site

The Fall River Depot station site is located southeast of the intersection of Davol and Pearce Streets and consists of numerous parcels with eight addresses totaling approximately 5.3 acres (Figure 4.12-4), which are described as follows.

- 825 Davol Street - This northwestern portion of the site consists of a retail discount flooring warehouse with an associated asphalt driveway and storage trailer. This area also encompasses another small vacant parcel with no address (Parcel 0020) which is owned by the City of Fall River.
- 775 Davol Street - This western central portion of the site contains the remnants (roof, metal side supports, and concrete pad) and associated paved surfaces of a former factory building and is surrounded on all sides with chain-link fencing.
- 61 Pearce Street - This northeastern portion of the site is occupied by a brick warehouse building used by a painting company and an electric and alarm company.
- 390 Davol Street - The eastern central portion of the property along the railroad tracks is elevated and consists primarily of a vacant, gravel and grassy area.
- 753 Davol Street and 175 Bayles Street – The central and eastern portions of the property consist of several buildings, including a brick warehouse, and associated paved parking, that are currently being used by Gemco, an electrical and mechanical contractors business.
- 729 Davol Street – the western central portion of the site consists of a cinder block building, referred to as Jimmy's Tire that is being used as a vehicle repair garage and tire sales facility with associated paved parking.
- 713 Davol Street – the western central portion of the site consists of a multi-family residence in the front near Davol Street and another multi-family residence and associated auto detailing business behind the front residence, referred to as Auto Accent.
- 697 Davol Street – the southernmost portion of the site consists of a restaurant referred to as Davol Street Station Seafood Restaurant & Pub with associated paved parking to the south of the restaurant building. A grassy area is located to the east of the restaurant and parking area along the railroad tracks and slopes upward to the north to a small shack and picket fence.
- Based on the tasks conducted for the Fall River Depot Station Phase I ESA, five RECs and two potential environmental concerns were identified and are described below.

REC #1 – Analytical Results from Previous Subsurface Investigations

As part of the Phase II subsurface investigation performed in 2001, a total of 14 hollow-stem auger soil borings were advanced at the site, with eight of the borings being completed as ground water monitoring wells. Petroleum contamination was encountered in three soil borings at depths ranging from 26 to 34 feet, which is consistent with the ground water interface. Coal, coal ash, and slag were observed in the fill materials at one soil boring. Asphalt and brick were observed in the fill materials at four of the soil borings. Groundwater samples were also collected from the monitoring wells. Groundwater samples from two wells were observed to have a sheen and distinct petroleum odor.

Analytical results for soil collected from three soil borings showed concentrations in excess of the Reportable Concentration (RCS-1) thresholds, as per the MCP, for volatile petroleum hydrocarbons (VPH). Two samples collected from two soil borings showed concentrations in excess of PAH Reportable Concentrations.

Groundwater samples collected from two on-site monitoring wells showed VPH and extractable petroleum hydrocarbon (EPH) concentrations above the MCP Reportable Concentrations (RCGW-2).

Soil and ground water concentrations in excess of applicable MCP Reportable Concentrations constituted a potential 120-day release notification obligation to DEP in accordance with the MCP. It appears notification was not performed as the site is not listed on the EDR or DEP databases as having a release. The exceedances of VPH and PAH in soil and VPH and EPH in ground water above the applicable Reportable Concentrations is considered a REC with a high potential impact.

REC #2 – Previous and Current Existence of USTs

A geophysical survey performed on the site in 2001 using ground penetrating radar as part of the Phase II subsurface investigation revealed three potential USTs at the site.

The Fall River Fire Department records show that a 2,000-gallon No. 2 fuel oil UST was previously located at the site at 61 Pearce Street beginning in 1948 until at least 1972. A UST removal permit was not provided; therefore, the UST may still be present at the site. In addition, for the property located at 753 Davol Street, a 1,000-gallon No. 2 fuel oil UST is listed as being present in 1948 and 1976. UST removal permits were provided for two 1,000-gallon No. 2 fuel oil USTs which were removed on March 17, 2009. According to the removal permits, a Licensed Site Professional (LSP) was on the site during the UST removals. Also for the 753 Davol Street property, two 4,000-gallon gasoline USTs were removed on December 2, 1998. It is not indicated on the removal permits if contamination was encountered during the removal; therefore, impacted soil, if encountered during the UST removals, may still be present.

A historic Sanborn map from 1950 showed that a gasoline filling station was located on the northwestern corner of the site that contained two gasoline USTs. According to Building Department records, a gasoline filling station was also constructed at the 753 Davol Street property in 1940. No UST removal permits were provided by the Fall River Fire Department. Therefore, the USTs may still be present at the site which constitutes a REC with a high potential impact.

REC #3 – Historic Use of Site Properties

A foundry was located in the northeastern portion of the site beginning in the late 1890s. Two gasoline filling stations were located on the northwestern and center portions of the site in the mid-1900s. The northwestern portion of the site was also was previously used as a junk yard and for the storage of vehicles and industrial equipment. In addition, a steel manufacturing company was located in the center portion of the site from the early 1900s until the 1980s. The center portion of the site also appeared to be used for the layover of trains in the early 1900s. A vehicle repair and maintenance garage was located at 729 Davol Street, in the center of the site, from the early 1900s until the present. The Gemco machine shop and metal fabrication shop are currently located at 753 Davol Street. It is not known how long the shops have been operating at this location; however, the website for the company indicates it was founded in 1966, but did not state if Gemco has been operating a machine shop and metal fabrication shop at this location since that time. The historical use of the site constitutes multiple potential sources of OHM and is considered a REC with a medium potential impact due to the potential for releases to have occurred over the past 150 years of industrial use.

REC #4 – Use of Site (729 Davol Street) as Vehicle Repair Garage

According to historic Sanborn fire insurance maps, the property located at 729 Davol Street was historically used as a vehicle repair garage since sometime prior to 1933. Jimmy's Tire Shop, which also performs vehicle maintenance and repair, currently operates at this property. Therefore, this property stores, uses, and/or generates petroleum and other OHM. The OHM would typically include waste oil, fuel oil, alcohol, anti-freeze, and degreasing chemicals which can contain chlorinated solvents. The improper use, storage, and/or generation of these products/wastes may have resulted in a release of OHM and is considered a REC with a medium potential impact.

REC #5 – Use of Site (753 Davol Street and 175 Bayles Street) as Machine Shop and Metal Fabrication Shop

During a limited site reconnaissance on June 10, 2009, a sign on the office and warehouse building at 753 Davol Street indicated that the property was operated by "Baldor Industrial Electric Motors" and "Gemco Electrical and Mechanical Contractors." An internet search for "Gemco" at the 753 Davol Street address revealed that Gemco is "a leading electrical and mechanical contractor and employs services which include electrical power and controls, mechanical piping, machine work and rigging." The website stated that "Gemco has an 8,250-square-foot shop area that consists of a machine shop and metal fabrication shop." From an open door, soldering/welding and metal cutting/grinding were observed to be occurring at the time of the site reconnaissance inside the brick warehouse building located at 753 Davol Street. An outside storage area consisting of various pipes and tubes was also observed near the warehouse building. Machine shops typically store and use various OHM in their processes and metal cutting involves the use of lubricating oils and other OHM. These processes may have resulted in a release of OHM and are considered a REC with a medium potential impact.

Potential Environmental Concerns

The Fall River Depot Station site has two potential environmental concerns.

Abandoned debris on the site, including a 55-gallon drum containing a small quantity of water at 825 Davol Street, broken television/computer monitors along the railroad platform, 40 to 50 containers of paint at 775 Davol Street, a large debris pile between Parcels O-15-0032 and O-155-0018, and an overgrown mound of unknown material, are of potential concern because the nature of the debris is unknown and it could contain contaminants that would release to the surrounding environment.

Given the age of the buildings located at the site, it is possible that hazardous materials, including roof flashing, tiles, and other materials, as well as lead-based paint, may be present in remaining building materials, surrounding debris piles, and soils.

Freetown Station Site

The Freetown station site is located at 165 South Main Street in the Town of Freetown (Figure 4.12-5). The land consists of 14.2 acres, with approximately 30 percent of the property covered with buildings or paved surfaces that consist of indoor and outdoor storage facilities. Four rectangular storage buildings, along with a paved outdoor storage area, are located on the northeastern portion of the site. The paved outdoor storage area is used for boats, recreational vehicles, trucks, and storage trailers. A cellular phone signal tower and telecommunications facility are located on the site immediately south of the

storage facilities. Approximately six large soil piles were observed on the site further south of the cellular phone signal tower. The western portion of the site is vegetated and unoccupied.

Based on the tasks conducted for the Freetown Station Phase I ESA, no RECs were identified for the site; however, three potential environmental concerns were identified and are described below.

Potential Environmental Concerns

The Freetown Station site has three potential environmental concerns:

- An outdoor storage area containing various boats, trucks, and other vehicles was observed during the site reconnaissance. Although the outdoor area was paved, there did not appear to be any engineered secondary containment to prevent a release of motor oil, gasoline, or antifreeze from migrating to environmental receptors. No staining or other indications of spills or release were observed.
- During the site reconnaissance, two pad-mounted electrical transformers were observed on the site. One of the transformers is located in a fenced-in area with the cellular phone signal tower. The second transformer is located outside the fenced-in area to the east of the cellular phone signal tower. A label indicated that this second transformer was owned by Commonwealth Electric Company. There were no stains or other indications of releases observed at the location of the transformers. It is not known if the transformers contain PCB dielectric fluid. The transformers have the potential to leak transformer oil directly onto the ground.
- Given the age of the buildings located at the site, it is possible that hazardous materials, including roof flashing, tiles, and other materials, as well as lead-based paint, may be present in remaining building materials, surrounding debris piles, and soils.

King's Highway Station Site

The King's Highway station site, located at 1024 King's Highway in New Bedford, consists of 13.4 acres (Figure 4.12-6). Active railroad tracks are located east of the property. The site is currently a commercial shopping plaza and historically was an industrial site.

Based on the tasks conducted for the King's Highway Station Phase I ESA, two RECs and three potential environmental concerns were identified and are described below.

REC #1 – Historical Use of Site as Industrial Manufacturing

According to historical accounts of City of New Bedford personnel, the site and/or adjoining properties were used for industrial processes, including manufacturing ceramic lighting fixtures. These industrial processes likely used OHM, including machining oils, paints, coatings, and glazing. Based on the age of the industrial development and its past use, the potential presence of OHM is considered to be a REC with a medium potential impact.

REC #2 – Gasoline Release at Adjoining Property (494 Church Street), Release Tracking Number (RTN) 4-15181

A gasoline release was identified at an adjoining property to the east at 494 Church Street. Information from a DEP file review indicated a release of approximately 1,000 gallons of gasoline had occurred. The DEP was notified of the release in December 1999. The release was issued RTN 4-15181, and a Class A-2

RAO was filed for the site in June 2004, indicating that a Permanent Solution had been achieved for the site; however, the contamination was not reduced to background. Although the anticipated ground water flow direction is to the southeast, away from the site, the historic release of gasoline in close proximity indicates the possibility of impacts to the site and therefore is considered to be a REC with a low potential impact.

Potential Environmental Concerns

The King's Highway Station site has three potential environmental concerns including:

During the site reconnaissance, the outdoor storage of waste was identified in the rear of Savers retail store on the southern portion of the plaza. The solid waste in this area was observed to be stored in an uncovered and uncontained manner with generally poor housekeeping. Although OHM was not specifically identified, the general storage of waste materials in this manner indicates a potential for historical impacts related to spills and stormwater runoff of OHM.

During the site reconnaissance, two pad-mounted electrical transformers were observed on the eastern or rear portion of the site. One transformer appeared to be in good condition, while the other appeared to be in below average and was not mounted on an elevated pad. An additional pad-mounted electrical transformer was observed further south behind the plaza. There were no stains or other indications of releases observed at the location of the transformers. It is not known if the transformers contain (PCB dielectric fluid. The transformers have the potential to leak transformer oil directly onto the ground.

Based on the age of the buildings located at the site, asbestos-containing materials, including roof flashing, tiles, and other materials, as well as lead-based paint, may be present.

Whale's Tooth Station Site

The Whale's Tooth station site is located at 532, 536 and 540 Acushnet Avenue, just east of Route 18 in the City of New Bedford (Figure 4.12-7). The land consists of 1.1 acres of paved surface currently used as a ferry terminal shuttle parking area. The surrounding area consists of commercial and light industrial properties. Active railroad tracks run along the eastern property boundary of the site.

Based on the tasks conducted for the Whale's Tooth Station Phase I ESA, three RECs and no potential environmental concerns were identified and are described below.

REC #1 – Confirmed Contamination (RTN 4-118) and Historical Use of the Site as Freight Yard

Previous operations at the Conrail yard located at the site included offloading tank railroad cars containing PCBs. The following contaminants were detected in site soils: PCBs, arsenic, lead, and PAHs. The DEP was notified of the release in January 1987 and RTN 4-118 was assigned. The property was managed as a voluntary Brownfields site. The DEP and EPA concluded that it was technically infeasible to remediate the site. Contamination was limited to the fill portion of the site and was not detected in ground water. Installation of an engineered barrier and implementation of deed restrictions consisting of Activity and Use Limitations (AULs) were sufficient to achieve a Permanent Solution, as defined by the MCP, at the site. Since contaminated soil was left in place beneath the paved surface, potential impacts related to exposures during future excavation or construction at the site exist. The potential impact of this REC is considered medium because exposure is limited due to the engineered barrier and the AUL.

REC #2 – Acushnet Estuary (New Bedford Superfund Site)

The Acushnet Estuary, a water body located east of the site, was placed on the EPA's National Priorities List on September 8, 1983, and is referred to as the New Bedford Superfund site. The site contains PCB contamination that affects ambient air, surface water, ground water, soil, sediment, and the food chain. Responsible parties have been identified; the contamination is the result of improper historic disposal of waste from two manufacturers which occurred over several decades, ending in the 1970s. The site was also reported to the DEP on January 15, 1987 at which time the release was issued RTN 4-122. The site is currently active. Although adequately regulated under state and federal regulations, the PCB contamination associated with this site has the potential to have impacted the subject site historically or potentially impact it in the future and is considered a REC with a medium potential impact.

REC #3 – No. 2 Fuel Oil Release at Adjoining Property (618 Acushnet Avenue, RTN 4-14791)

A No. 2 fuel oil release was identified at the Department of Employment and Training, an adjoining property to the north with an address of 618 Acushnet Avenue. Information from a DEP file review indicated that a release of an unknown quantity of oil was reported on June 14, 1999. Approximately 19.3 tons of petroleum contaminated soil was removed from the site. A Class A-2 RAO was submitted to the DEP stating that a Permanent Solution was achieved; however, contamination was not reduced to background. Although the anticipated ground water flow direction is cross gradient (to the east), the historic leaking fuel oil at the adjoining property is a potential threat of release to the site and is considered a REC with a low potential impact.

Taunton Depot Station Site

The Taunton Depot station site is located west of the intersection of County Street and Taunton Depot Drive in Taunton (Figure 4.12-8). The site consists of a portion of three parcels totaling approximately 22 acres. The majority of the site is undeveloped. A sewer pumping system and generator associated with the retail stores to the southeast, surrounded by a chain link fence, extends approximately 200 feet west onto the site. An asphalt paved driveway leads up to this area. A truck and metal storage container are also located in that area. The southern portion of the site consists of a grassy field with little vegetation while the northern half of the site is densely wooded with walking paths. Land adjoining the railroad tracks to the west is wooded and consists primarily of wetland areas and small stream, which is a tributary of the Taunton River.

The Taunton Depot Station Phase I ESA did not identify any RECs. However, lead and arsenic based pesticides, herbicides, and/or synthetic fertilizers may previously have been applied to the Taunton Depot Station site when it was used as an orchard. These contaminants do not readily biodegrade and may be present in site soil at elevated concentrations.

Attleboro Alternative Station Sites

Barrowsville Station

The Barrowsville station site is located southwest of the intersection of South Worcester Street and the Old Colony Railroad tracks (Figure 4.12-9). It consists of four parcels totaling an area of 10.01 acres.

The 225 South Worcester Street property (Parcel 185) comprises 5.02 acres and makes up the southern portion of the site. The property consists of undeveloped land that contains off-road vehicle trails. The property is mostly wooded with some cleared field areas.

The 215 South Worcester Street property (Parcel 187) comprises 0.56 acres and abuts South Worcester Street and the eastern property border. It consists of a 2,102-square foot vacant restaurant building and approximately 15,000-square foot asphalt paved parking lot.

The 209 South Worcester Street property (Parcel 190), comprising 0.53 acres, is located at the northeast portion of the site. A portion of the property abuts the railroad to the north. The property contains a 782-square foot single family residence and a small shed. The majority of the property is lawn area with some trees.

The 0 South Worcester Street property (Parcel 191), comprising 3.9 acres, is located at the northern portion of the site, adjoining the railroad tracks to the north. The property is undeveloped, consisting of open fields with grasses and shrubs, and contains off-road vehicle trails.

Based on the tasks conducted for the Barrowsville Station Phase I ESA, one REC and two potential environmental concerns were identified and are described below.

REC #1 – Indications of Dumping and Burning of OHM and Other Wastes

During the site reconnaissance, a partially dismantled and burned car was observed at the 0 South Worcester Street parcel. An area containing melted material, coal and stained soil was also observed adjacent to the car.

Three 55-gallon drums were observed within and adjoining to a brook located at the site at the 225 South Worcester Street parcel. It was unclear whether the drums contained any hazardous materials. Two drums had lids in place and the third drum appeared to be decomposed and crushed.

Various wastes were observed throughout three parcels that comprise the site, consisting of 0, 209 and 225 South Worcester Street. Evidence of wastes included an automotive fuel tank, car batteries, fire pit areas, car tires, empty automotive fluid containers, paint cans, asphalt, scrap metal, household trash, furniture, an automotive muffler, various containers, car bumpers, beer bottles and two 55-gallon drums filled with trash.

The presence of the car and its apparent impacts to the soil, the improperly disposed drums and the potential contents located inside or released from the drums, and the various wastes constitute a REC with a medium potential impact.

Potential Environmental Concerns

The Barrowsville Station site has two potential environmental concerns.

Stained soil and a dark shiny cinder-like material which may be coal slag were observed adjacent to the tracks on the site during the site reconnaissance. The presence of stained soil indicates that a release of OHM may have occurred. Although the potential presence of coal slag may be consistent with background conditions and exempt from reporting, as defined in the MCP, coal slag typically contains

semi-volatile organic compounds and metals, and may need to be properly managed if the property is developed.

According to the information reviewed at the DEP, a large release of tetrachloroethene (PCE) and TCE occurred from the former Kilburn Glass Company which is approximately 2,000 feet west northwest of the site. Delineation of the PCE and TCE ground water plume in 1992 indicated that the releases have impacted the bedrock and that the plume is approximately 2,250 feet long and is migrating to the southeast, toward the property comprising the site. Based on the extent of release of PCE and TCE from this property, the direction of ground water flow, and the unknown extent of contamination, this release is considered a potential environmental concern.

Downtown Taunton Station Site

The Taunton station site, located northeast of the intersection of Porter and Mason Streets in the City of Taunton (Figure 4.12-10), consists of approximately six acres of undeveloped land which is comprised primarily of weeds and grass and surrounded with a chain link fence. Small trees and shrubs, as well as miscellaneous solid waste trash, are located near the perimeter of the site. Railroad tracks abut the property to the southwest.

Based on the tasks conducted for the Taunton Station Phase I ESA, five RECs and no potential environmental concerns were identified and are described below.

REC #1 – Documented Release at Site (Parcel 6-A, RTN 4-695)

The property which comprises the site is also referred to as Parcel 6-A. Parcel 6-A was assigned RTN 4-695 in April 1989 for a release of aromatic solvents and petroleum based oil. Tier 1D status was assigned in August 1996 due to the responsible party's failure to provide a required submitted to DEP by a specified deadline. The property is also listed in the US Brownfields database. DEP transmittal forms (BWSC-102) dated July 24 and July 30, 2008 were reviewed. The forms indicated that soil sampling was conducted at several residential properties located near the intersections of Porter and Mason Streets using a hand auger. Each sample was screened in the field using an x-ray fluorescence device.

A telephone interview was conducted with Mr. Shea, Executive Director of the Taunton Redevelopment Authority, on February 4, 2009 and Mr. Robert Atwood, the environmental consultant, on February 5, 2009 to obtain additional information about Parcel 6-A. The property is currently enclosed with a chain-link fence due to soil contamination consisting of benzo(a) pyrene, lead, beryllium, arsenic, zinc, and asbestos throughout the property. Light non-aqueous phase liquid (LNAPL), which was also detected in one monitoring well, appears to be limited to less than a 50-foot diameter area around the well. Lead and zinc concentrations have been detected in one well above regulatory criteria. The source of the contamination is from the previous use of the property as a locomotive plant and maintenance facility since the mid to late 1800s. EPA has conducted CERCLIS response actions and DEP has also conducted sampling, most recently of the nearby residences. Mr. Shea said that DEP has concluded that the soil contamination detected on the adjoining residential properties is due to urban fill and not from impacts associated with the Parcel 6-A property.

The Taunton Redevelopment Authority cannot use a Brownfield grant to clean up the property since they are the responsible party. They are currently planning to clean up and develop the property with the Taunton Housing Authority for construction of elderly housing as well as expansion of the adjacent GATRA facility. A portion of the property may also be developed as a parking lot.

The impacted soil and ground water on this property is considered a REC with a high potential impact.

REC #2 – Historic Use of the Site and Adjoining Properties

From the mid-1800s until the mid-1900s, the site was used for railroad repair, maintenance, and painting. An iron and oil house, two coal sheds, a woodworking shop, a "tin" shop, and a painting shop, along with a railroad roundhouse, were also located at the site. Railroad spurs were located throughout of the site. During this time, Mason Machine Company was located immediately northwest of the site. Taunton Locomotive Works, a manufacturer of trains, also operated during this time immediately northeast of the site across the railroad tracks in the current location of the Taunton Mall. Operations there included a foundry along the railroad tracks, as well as three machine shops, a boiler shop, an iron shop, and an erecting house. The adjoining facilities used different processes than the processes used at the site, resulting in potentially different OHM concerns.

Historical OHM use and storage at the site and adjoining properties have the potential to release contaminants into the environment which have previously not been identified; therefore, the past use of the site and adjoining properties is deemed a REC with a high potential impact.

REC #3 – Former and Current Existence of USTs and Use as Vehicle Repair and Maintenance at Adjoining Property (2 Oak Street)

According to information received from the Taunton Fire Department, one 15,000-gallon No. 2 fuel oil and one 1,000-gallon fuel oil UST were removed in 1988 from the adjoining Greater Attleboro Taunton Transit Authority (GATRA) facility located to the northwest at 2 Oak Street property. However, it was not indicated if contamination was encountered during the removal of the tanks and detailed closure reports were not identified. Therefore, OHM may be present in the locations of the former USTs.

In addition, according to the Taunton Fire Department, six USTs were registered in 2008 at 2 Oak Street, which include the following:

- Two 15,000 gallon diesel fuel;
- One 10,000 heating oil;
- One 10,000 gasoline;
- One 2,500-gallon waste oil; and
- One 2,500-gallon motor oil.

In a telephone conversation with Lieutenant Gilbert on January 15, 2008, it was learned that the tanks were installed in 1987. Lieutenant Gilbert stated that information in the file showed that the tanks passed a tightness test which was performed in August 2008. According to a GATRA employee, the tanks are double-walled fiberglass and have leak detection alarms. The tanks are also inspected annually. However, additional detailed information regarding the USTs is not known and all USTs have the potential to leak and release OHM to environmental media.

Vehicle repair and maintenance of GATRA and H & L. Bloom Bus Line vehicles is also performed at the adjoining 2 Oak Street building. The vehicle repair and maintenance operations require the use, storage and generation of waste oil and other OHM which consists of motor oil, waste oil, fuel oil, alcohol, anti-freeze, and degreasing chemicals that may contain chlorinated solvents. Hydraulic lifts that contain hydraulic oil and are installed below the floor were also observed in the maintenance building. Although

floor drains in the facility are connected to an oil-water separator, the storage, use, and/or generation of these products could in some cases result in a release of OHM without proper management practices.

The former and current existence of USTs at 2 Oak Street and the use of 2 Oak Street for vehicle repair and maintenance is considered a REC with a low potential impact.

REC #4 – Release At Nearby Property (5 Myrtle Street, RTN 4-10550)

Kent Silversmiths of 5 Myrtle Street is located approximately 100 feet southwest of the site and was formerly occupied by a metals plating operation, which ceased production in 1993. The property is currently unoccupied. Elevated concentrations of chlorinated VOCs, including PCE, TCE, and degradation byproducts were detected in soil and ground water at the property above the MCP Method 1 standards. The source of the contaminants was determined to be from a spill from an aboveground storage tank (AST) that was reported in June 1994. Response actions were conducted at the site. Phase I through Phase V reports have since been submitted to the DEP.

A Phase V Inspection and Monitoring Report dated September 2008 was reviewed. Remedial actions at the property have included soil vapor extraction and a limited oxidant addition program using potassium permanganate. Monthly site visits are conducted for the purpose of operation, maintenance, and monitoring of the treatment system. The ground water treatment program has been effective at destroying the VOCs; however, dense non-aqueous phase liquid (DNAPL) is still providing an on-going source of dissolved VOCs into ground water at the site. The on-site building is reportedly planned for demolition in the near future. The demolition will provide an opportunity to excavate the impacted soils and to add more oxidant to the impacted soil area. Low ground water migration rates calculated using on-site wells indicates that the VOC plume is nearly immobile.

The two wells closest to the site have not had exceedances of any VOCs since February 2005; however, at the time of this report, it could not be determined if the wells were installed at the appropriate depth to detect DNAPL. The ground water flow direction seems to vary by year. Based on the information reviewed in the Phase V report, the release could affect media at the site is deemed a REC with a low potential impact.

REC #5 – Release at Adjoining Property (Taunton Mall, 1 Washington Street, RTN 4-12457)

The Taunton Mall abuts the site to the east. A Notice of Responsibility dated January 22, 1997 was reviewed at the DEP and stated that the following PAH compounds were detected in soil at the following concentrations:

- benzo(a)anthracene at 10 mg/kg;
- benzo(a)pyrene at 16 mg/kg; and
- benzo(a)fluoranthene at 17 mg/kg.

A letter from the Morton Hospital regarding Mill River Place and RTNs 4-14917, 4-12457, and 4-2028 indicated that a Release Abatement Measure (RAM) Plan dated August 26, 1999 was prepared to define the extent of the petroleum non-aqueous phase liquid (NAPL) encountered in a monitoring well from test pitting and excavation of source material.

No other documents, including the RAO or AUL, were available at the DEP for review. Because figures showing the ground water flow direction were not available for review, the ground water flow direction

is not known. Based on the topography and the location of the nearest surface water, ground water flow is assumed to be to the east toward the Mill River. However, since the files could not be reviewed and a deed restriction consisting of an AUL was implemented at this property which abuts the site, this release may have the potential to impact the site and is therefore deemed a REC with a low potential impact.

Stoughton Alternative and Whittenton Alternative Station Sites

Easton Village Station

The Easton Village station site is restricted to a portion of the railroad right-of-way which is owned by the Massachusetts Bay Transportation Authority (MBTA) in Easton, Massachusetts according to the Easton Assessor's Map No. 16U. The site is identified by the Easton tax assessor's database as Map and Parcel No. 20R-45 (Figure 4.12-11). Inactive railroad tracks are located in the center of the right-of-way, while overgrown vegetation occupies the majority of the remaining right-of-way. The site is approximately 50 feet in width and 600 feet in length, totaling approximately 30,000 square feet or 0.7 acres, and is located approximately 400 feet south of Oliver Street, 300 feet north of Main Street, and immediately west of Sullivan Avenue and Mechanic Street.

Based on the tasks conducted for the Easton Village Station Phase I ESA, two RECs and one potential environmental concern were identified and are described below.

REC #1 – Fuel Oil Release at Adjoining Property (28 Main Street, RTN 4-19778)

Shovel Shop Square, the commercial buildings located on the site at 28 Main Street, was assigned RTN 4-19778 in May 2006 due to a release of petroleum hydrocarbons associated with former USTs. Elevated concentrations of lead and beryllium were also detected. Site remediation has included soil removal, off-site disposal, and dewatering.

Soil excavation occurred immediately west of the site, just north of Queset Brook. In 2006, a total of 42 soil samples collected from the walls and bottoms of the UST excavation areas showed EPH exceedances in 14 samples above the applicable soil standards. However, soil samples collected closest to the site showed no detections above laboratory reporting limits. Groundwater sampling performed in May and August 2007 found no contaminants in any samples at concentrations above the applicable standards, including the ground water monitoring well located immediately adjacent to the site. Surface water samples from Queset Brook and Shovel Shop Pond collected in May 2007 showed no compounds were detected above the applicable guidelines or standards.

Although laboratory data for soil samples and ground water closest to the site indicate no concentrations exceeding laboratory reporting limits for the COCs, the release is considered a REC with a low potential impact because it abuts the subject site. Possible residual contaminants may still be present, and because ground water flows from the disposal site toward the proposed Easton Village Station, the contaminants could be present on the site and not identified during assessment activities.

REC #2 – Petroleum and Historic Fill Release at Nearby Property (64 Main Street, RTN 4-10839)

The Verizon Central Office Facility located at 64 Main Street, approximately 300 feet west of the site, was assigned RTN 4-10839 in October 1994 due to the presence of EPH compounds in soil. The Class A-2 RAO submitted for the property in December 2001 was reviewed. Remediation was conducted

beginning in December 1994 and a total of 42 tons of contaminated soil was removed from the site. EPH compounds and PAHs were detected in soil and ground water above the applicable standards during subsurface investigations which were conducted in 1995 through 1997 and 2000.

As part of a Phase IV Remedy Implementation Plan that was submitted to DEP in 2001, 27 tons of soil was excavated and 300 pounds of oxygen releasing compounds were injected into the base of the excavation area. Groundwater sampled in September 2001 showed no detections of EPH compounds or PAH target analytes above laboratory method detection limits. The source of the contamination is believed to be from a 1,000-gallon capacity No. 2 fuel oil UST and historic fill material.

The ground water flow direction is shown to be to the northeast, toward the site. Based on this information, conditions present at this property could impact environmental media at the site and is considered a REC with a low potential impact.

Potential Environmental Concern

Easton Village Station has one potential environmental concern. A utility pole with three pole-mounted transformers was observed on the western boundary of the railroad right-of-way at the southern end of Shovel Shop Square. There were no stains or other indications of releases observed at the location of the transformers. It is not known if the transformers contain PCB dielectric fluid. The transformers have the potential to leak transformer oil directly onto the ground.

North Easton Station Site

The North Easton site is located west of the intersection of Roche Brothers Way and Washington Street/Route 138 in Easton and Stoughton, Massachusetts (Figure 4.12-12). The site consists of a portion of three parcels totaling approximately 5.2 acres. The site is currently void of buildings and primarily overgrown with grass or forest. A small wastewater treatment system and leaching field associated with the commercial development on Roche Brothers Way abuts the southern boundary of the site. The remainder of the southern portion of the site is covered with tall grass and serves as a drainage basin for the commercial property at 31 Roche Brothers Way. J F McNamara & Sons Construction Company currently uses the northern portion of the site to store dumpsters and roll-off containers.

Based on the tasks conducted for the North Easton Phase I ESA, no RECs were identified for the site; however, three potential environmental concerns were identified and are described below.

Potential Environmental Concerns

The North Easton Station site has two potential environmental concerns including:

During a site reconnaissance in 2002, it appeared that the southern portion of the site was used for target practice, based on ammunition shells and miscellaneous scrap metal with bullet holes that were observed scattered throughout that area. Ammunition shells and bullets typically contain high concentrations of lead; therefore, elevated lead concentrations may be present in surficial soil in the area where target practice occurred. The frequency with which the property was used as target practice could not be determined. This activity would constitute a REC if it were determined that target practice occurred frequently at the property or the property was used as a commercial target shooting facility.

The presence of multiple storage containers on the northern portion of the site is of concern as the containers may be old and painted with lead-based paint. In addition, not every dumpster could be inspected for possible contents and the majority of the containers were rusting and in a state of disrepair.

Raynham Place Station Site

The Raynham Place station site is located at 1958 Broadway in Raynham. The site parcel consists of a portion of the larger Raynham Dog Track Park and totals approximately 20 acres of land, with more than 80 percent of the property covered with buildings or paved surfaces, including dog kennel buildings, truck storage/maintenance buildings, storage containers, and parking lot space rented for the storage of wooden poles and snow removal equipment (Figure 4.12-13). The inactive rail right-of-way is located west of the property.

Based on the tasks conducted for the Raynham Place Station Phase I ESA, one REC and two potential environmental concerns were identified and are described below.

REC #1 – Historic Use of the Site as Truck Maintenance and Industrial Storage

According to observations and reports of operations at the site, trucks, truck parts and equipment, telephone poles, track mats, and other materials have been stored at the site. The Property Manager for the site stated that the telephone poles are pressure treated and were not treated with creosote. No specific OHM storage was identified at the site during the site reconnaissance. The interiors of the buildings were not accessible during the site reconnaissance and the truck maintenance garage and related OHM storage were not inspected. These site operations could have potentially resulted in a release of OHM to the environment and therefore are considered a REC with a low potential impact.

Potential Environmental Concerns

The Raynham Place Station site has two potential environmental concerns. Two electrical transformers were observed to be located on the site. There were no stains or other indications of releases observed at the locations of the transformers. It is not known if the transformers contain PCB dielectric fluid. The transformers have the potential to leak transformer oil directly onto the ground. Given the age of the buildings located at the site, it is possible that hazardous materials, including roof flashing, tiles, and other materials, as well as lead-based paint, may be present in remaining building materials.

Taunton Station Site

The Taunton station site is located north of the intersection of Arlington Street and William Hooke Lane in the City of Taunton (Figure 4.12-14). William Hooke Lane (previously referred to as Railroad Avenue) bisects the southern portion of the site in a north-south direction. Arlington Street borders the site to the southwest and the railroad tracks border the site to the east. The site consists of six parcels totaling 10.99 acres.

- Parcel 759 - Except for an unoccupied building which is currently located in the southeastern portion of the site (on Parcel 759 with an address of 30 William Hook Lane) and abuts the railroad tracks, the site does not contain of any building structures. A fire on the Parcel 759 property that occurred in March 2008 burned down the building located on the northern portion of the parcel. The concrete slab foundation and asphalt pavement are still present on the property.

- Parcel 761 - This parcel is partially paved. A pile containing miscellaneous trash and debris is located in the southern portion of the parcel. A pile of railroad ties is also located on this parcel.
- Parcels 762, 763, and 764 - The northern parcels are unpaved and partially wooded. A small pond and wetland area is located on Parcel 764.
- Parcel 760 - Due to a series of fires and consequential demolition which have occurred on (100 Arlington Street) over a period of several years, there are no buildings remaining on the property. Remnants of a building complex, including the concrete slab foundations, are still present. A pond and stream are located in a wooded area on the central portion of the property. The southwestern portion of Parcel 760, which is unpaved, is currently used by contactors as a staging and storage area for the installation of an underground water main in the vicinity of the site. Several trucks, pipes, soil and gravel piles, and equipment are located there.

Based on the tasks conducted for the Taunton Station Phase I ESA, five RECs and four potential environmental concerns were identified and are described below.

REC #1 – Historical Use of the Site

- The Taunton Twist and Drill Company was located at the site west of William Hooke Lane on Parcel 760 beginning in the early 1900s. The New Jersey Rubber Company, a manufacturer of rubber soles and tubing, then occupied the site from the 1920s until the late 1970s. Both of these operations had the potential to release OHM used in manufacturing processes into the environment.
- A coal shed was located east of William Hooke Lane on Parcels 759 and 761 from the late 1800s until the mid-1900s, when Crown Tank Works, a manufacturer of steel tanks, operated on the property until the late 1990s. Coal residues may still be present in the surrounding soil from the loading and unloading of coal into trains.
- Underground fuel storage, manufacturing processes, and OHM storage may have released contaminants into the environment and is deemed a REC with a high potential impact.

REC #2 – Conditions Associated with RTN 4-20854 at 100 Arlington Street

A two-hour reporting condition for a spill of five pounds of mercury was reported to the DEP in November 2007 and assigned RTN 4-20854. The release occurred during demolition activities when mercury beads were discovered under a pile of old meters in the bottom of a roll-off container. An Immediate Response Action (IRA) was approved during the initial notification for the excavation of up to 25 cubic yards of soil. No other documents were available for review at the DEP. The presence of OHM and detection of OHM in site media is deemed a REC with a medium potential impact.

REC #3 – Conditions Associated with RTN 4-374 and the CERCLIS Listing at 100 Arlington Street

According to a CERCLIS report dated November 1994, improper handling and storage of hazardous substances were the sources of contamination at the property. Toluene was detected at 7,800 parts per million (ppm) and lead was detected at 1,300 ppm in samples collected from drums, bags, and sumps. EPA addressed additional asbestos and oil-contaminated waste debris, as well as transformers located outside the building. A removal action, which included only the wastes that presented an immediate threat to the public, was completed by contractors for EPA in January 1995. The DEP file for RTN 4-374 contained documents relating to the CERCLIS listing. The RTN has been assigned a Tier 1D, which indicates that site is in default because response actions have not been performed by the required deadlines.

The previously hired environmental consultant, who performed the asbestos removal for the 100 Arlington Street property, was interviewed on February 6, 2008. The environmental consultant stated that he reviewed the results of sampling activities previously conducted by EPA and that the soil and sediment collected from the on-site stream showed the presence of PAHs and metals impacts above regulatory criteria. The environmental consultant could not be certain if there were any regulatory exceedances in ground water. The detection of OHM in site media and the out of compliance status indicating that this release is not being properly addressed are deemed a REC with a high potential impact.

REC #4 – Conditions Associated with RTN 4-403 at 30 Railroad Avenue (William Hooke Lane)

According to a Phase I Initial Site Investigation Report prepared in 1995 by Quigley Environmental for Parcel 759, the property at the time consisted of a two-acre tank fabrication facility referred to as Crown Tank Works. Open areas on the property were used for parking and to store metal, liquid products consisting of naphtha and primer that were used for fabricating and finishing tanks. The report stated that an environmental assessment report prepared in 1987 indicated that contaminated soil was encountered during a tank removal operation and gasoline compounds were detected in one water sample. In addition, accidental kerosene spillage was reported by on-site personnel during routine handling practices. A RAM Plan to conduct response actions at the site was also prepared for the site and a RAM Completion Statement was submitted to the DEP in August 1996.

A Class A-3 RAO to permanently close out the site was prepared by Norfolk Environmental and submitted to the DEP in January 2002. A deed restriction, consisting of an AUL, was also implemented for the site.

The presence of multiple OHM sources, detection of OHM in site media, and an AUL is deemed a REC with a high potential impact.

REC #5 –Transformer Found at 30 William Hooke Lane (Parcel 759)

During the site reconnaissance visit on November 17, 2008, a fallen pole-mounted transformer on an unpaved surface was observed near the foundations of the demolished building at 30 William Hooke Lane. The transformer was once located on a utility pole that was damaged by fire. The transformer appeared to be an older model, which is typically associated with PCB-containing oils.

The potential presence of an OHM source and detection of OHM in site media is deemed a REC with a medium potential impact.

Potential Environmental Concerns

The Taunton Station site has four potential environmental concerns:

- Given the age of the former buildings which were previously located at the site, it is possible that asbestos-containing materials may be present in the floor tiles currently remaining at the site.
- Given the age of the current building remaining at the site, it is possible that hazardous materials, including roof flashing, tiles, and other materials, as well as lead-based paint, may be present in remaining building materials, surrounding debris piles, and soils.

- Three pole-mounted transformers were observed on a utility pole on the eastern side of William Hooke Lane. There were no stains or other indications of releases observed at the locations of the transformers. It is not known if the transformers contain PCB dielectric fluid. The transformers have the potential to leak transformer oil directly onto the ground.
- A pile containing miscellaneous debris including lumber, old buckets, tires, and plastic tarps was observed in the southern portion of Parcel 761. The asphalt pavement was weathered and cracking. A large pile of railroad ties was also observed in the area along the existing railroad tracks. The parcel was once used to store trucks, and there were also small pieces of automobile parts scattered across the property. The general storage of debris materials in this manner indicates historically poor housekeeping practices and a potential for impacts to environmental media. In addition, railroad ties specifically contain certain OHM.

4.12.2.3 LAYOVER FACILITY SITES

New Bedford Main Line Layover Site Options

Wamsutta Layover Site

The Wamsutta layover site is located on a triangular shaped property in a commercial and light industrial area of New Bedford (Figure 4.12-15). The site is located south of Wamsutta Street, east of the railroad tracks, and west of Herman Melville Boulevard and is approximately 12 acres in size. Due to immobile soil contamination, the site was capped with a geotextile membrane in approximately 2004. Two grassy mounds are located on the eastern portion of the site. Railroad tracks abut the site to the west and travel off site to the north. Railroad tracks also travel from the northeastern site boundaries to the harbor which is located approximately 100 feet to the east. The trains haul dredged sludge from the harbor to the east and travel to the site for off-site disposal.

Based upon the tasks conducted for this Phase I ESA, five RECs and three potential environmental concerns associated with the site were identified and are described below.

REC #1 – Historic Use of Site as Freight Yard and Placement of Permanent Engineered Barrier Above Impacted Soil at Site, RTN 4-118

The former Conrail Yard comprising the site was managed as a voluntary Brownfield site. RTN 4-118 was initially assigned to this site and the nearby Whale's Tooth property located south of the site by the DEP in January 1987. The center of the site contained elevated concentrations of PCBs, arsenic, lead, and PAHs with the perimeter having lower concentrations of these contaminants in soil. An agreement was reached with the DEP and EPA based on the financial infeasibility of remediation at the site. The contamination was proposed to be left in place with proper engineering controls, such as a soil geotextile composition cap and land use restrictions consisting of an AUL in the areas exhibiting the highest concentrations of contamination above the Upper Concentration Limits. Since contaminated soil was left in place, there are potential impacts related to exposure during future soil disturbance at the site during construction related to the South Coast Rail Project. Therefore, this condition is considered a REC. The potential impact of this REC is considered medium because exposure is limited due to the engineered barrier and the existence of an AUL.

REC #2 – Documented Release at Acushnet Estuary (New Bedford Superfund Site), RTN 4-122

The Acushnet Estuary, a water body located to the east of the site, was placed on the National Priorities List and became a Superfund site in 1983. This site contains PCB contamination that affects ambient air, surface water, ground water, soils, sediment, and the food chain. The contamination is the result of improper historic disposal of wastes which occurred over several decades up until the 1970s. The site is currently active and was assigned RTN 4-122 by the DEP in 1987. Although adequately regulated under State and Federal regulations, the PCB contamination associated with this site is widespread and has the potential to have impacted the subject site historically or potentially impact it in the future through continued contaminant migration and is considered a REC with a medium potential impact.

REC #3 – Documented Fuel Oil Release at Adjoining Property (618 Acushnet Avenue), RTN 4-14791

A No. 2 fuel oil UST release from a western adjoining property, the Department of Employment and Training, located at 618 Acushnet Avenue, was identified in June 1999. A total of 20 tons of petroleum contaminated soil was removed from the property. A Class A-2 RAO, indicating that a Permanent Solution was achieved but that contamination was not reduced to background, was submitted to the DEP. The anticipated direction of ground water flow is to the east toward the property comprising the site. However, given the quantity and regulatory status, this REC is deemed to have a low potential to affect site media.

REC #4 – Documented Diesel Fuel Release and AUL at Nearby Property (1 Wamsutta Street), RTN 4-11715

A diesel fuel UST release from a property located northeast of the site to soil was reported to the DEP in October 1995. Approximately 100 cubic yards of petroleum impacted soil was removed. Exceedances of 2-methylnaphthalene in soil were detected above the applicable regulatory standards and a deed restriction consisting of an AUL was placed on the property along with a Class A-3 RAO in October 1996. Although ground water was not impacted, the ground water flow direction was determined to flow to the south-southwest toward the site. Based on the proximity of the site, the direction of ground water flow, and the implementation of an AUL indicating residual petroleum impacts are present, this REC is deemed to have a low potential to affect site media.

REC #5 – Documented PCB Release at Nearby Property (New Bedford Main Interceptor), RTN 4-127

PCBs were detected during the filling of an abandoned interceptor pipe with grout in soil in an area located northeast of the site. Limited documents were available for review on this release at the DEP file review. It was stated in documents that were available that an AUL will be necessary to achieve a condition of No Significant Risk for the property indicating residual soil impacts are present. Based on the proximity of this property to the site and the lack of information available for review, this property may have the potential to impact the site and is deemed a REC with low potential to impact the site.

Potential Environmental Concerns

The Wamsutta layover site has three potential environmental concerns:

- An electrical substation containing transformers abuts the site to the west off Acushnet Avenue. It is not known if the transformers contain PCB transformer oil. The transformers have the potential to release transformer oil directly onto the ground surface.

- A motor repair facility abuts the site to the east off Herman Melville Boulevard. Numerous 55-gallon drums were observed outside behind the facility facing the site and most likely contained OHM. The drums were not placed on pallets or any other type of secondary containment structure. Releases or spills from the drums, should they occur, have the potential to impact the site.
- Numerous piles of unused new creosote coated railroad ties were located in two areas in the northern portion of the site. Creosote contains heavy organic compounds that have the potential to leach into soil and ground water.

Church Street Layover Site

The Church Street layover site is located between Route 140 and the railroad tracks in a mixed use area of New Bedford (Figure 4.12-16). The northern portion of the site is wooded and undeveloped. The remaining portion of the site is used by the Frade's Disposal Company which operates a solid waste recycling, scrap metal recycling, and trash pick-up and disposal company on the property. Railroad tracks abut the site to the east. Route 140 is located west of the site.

Based upon the tasks conducted for the Church Street layover site, four RECs and three potential environmental concerns were identified and are described below.

REC #1 – Presence of Pooled Oil and Stained Soil in Unpaved Area Near Site

During the site reconnaissance of April 30, 2009, an area of pooled oil as well as a larger area of stained soil was observed on the ground surface in an unpaved area located in the western portion of the Frade's facility which is approximately 300 feet to the west of the proposed site boundaries. The pooled soil was located in an area staging large trucks and other heavy equipment which utilize OHM. The presence of pooled oil and stained soil could represent a release that would require notification to the DEP. In addition, this condition may have impacted subsurface soil and ground water at the site and therefore is considered a REC with a medium potential impact.

REC #2 – Current Existence of 3,000-Gallon Diesel AST with Stained Soil on Site

A 3,000-gallon diesel AST with a fuel dispenser pump was observed outside in the center of the Frade's facility. The AST and dispenser pump are located at the southwestern site boundaries. Even though a concrete pad was located under the AST, a large area of stained soil was observed around the dispenser pump and had migrated off the concrete pad onto the ground surface. The exterior of the AST was also rusted. The potential release of oil which may have occurred in this area over time could have impacted subsurface soil and ground water at the site and therefore is considered a REC with a medium potential impact.

REC #3 – Historic and Current Use of Area Near Site for Vehicle Repair and Maintenance

Mr. Frade stated that approximately 25 vehicles, including garbage and recycling trucks, are repaired and maintained at the Frade's Disposal repair garage which is located approximately 200 feet west of the proposed site boundaries. He indicated that the facility therefore stores, uses, and generates petroleum and other OHM which consists of motor oil, waste oil, fuel oil, alcohol, anti-freeze, and degreasing chemicals that may contain chlorinated solvents. An inspection of the repair garage by the DEP in 1998 indicated that the waste oil collection area was not being properly managed and displayed evidence of excessive spillage. The improper management, storage, use, and/or generation of these

products may have or could result in a release of OHM which constitutes a REC with a medium potential impact.

REC #4 – Existence of USTs Near or on Site

According to information provided by the New Bedford Fire Department, a 3,000 gallon No. 2 fuel oil UST existed at the Frade's property in 1958. In addition a 1,000 gallon gasoline UST also existed at the Frade's property in 1970. There were no UST removals on file with the New Bedford Fire Department. Therefore, it is possible that one or both of the USTs, the integrity of which is unknown, may still be present and OHM associated with the USTs on this property may also be present which would constitute a REC with a medium potential impact.

Potential Environmental Concerns

The Church Street layover site has three potential environmental concerns:

- The property was historically used for the growing of crops. Therefore, pesticides, herbicides, and fertilizers may have been used and because of their persistence, may still be present in site soils.
- A pad-mounted electrical transformer is located in a shed in the western portion of the Frade's Disposal facility. Mr. Frade stated that the transformer is owned by NSTAR. It is not known if this transformer contains PCB transformer oil. The transformer has the potential to leak transformer oil directly onto the ground surface.
- During the site reconnaissance, the Frade's Disposal facility was being used for the storage of drums, tires, trucks, scrap metal, machinery, plastic, metal, and other recyclable materials, including bins of computer monitors and other miscellaneous debris and trash. The general storage of materials in this manner indicates historically poor housekeeping practices and a potential for impacts to environmental media.

Fall River Secondary Layover Site Options

ISP Layover Site

The ISP layover site is located between the railroad ROW and the Barnaby Cove which is part of the Taunton River in the Town of Freetown (Figure 4.12-17). The land is currently undeveloped, except for dirt pathway that traverses the property in a southwest-northeast orientation and the railroad tracks that abut the site to the southeast. In a grassy area, several dirt roads are present and appear to be used by recreational vehicles.

Based upon the tasks conducted for this Phase I ESA, five RECs associated with the site were identified and are described below.

REC #1 – Documented Releases on or Encompassing the Layover Site – RTNs 4-13482, 4-13856, and 4-15907

For RTN 4-13482, a total of 60 buried 55-gallon drums and contaminated soil were encountered during a due diligence test pit investigation in 1997. In addition, 80 tons of impacted soil was removed and 6,300 cubic yards of soil was treated onsite by bioremediation and then returned to the excavation. Soil and ground water sampling revealed VOCs, semi-volatile organic compounds (SVOCs), EPH, and thallium above background levels. Fine white polyvinyl chloride (PVC) powder was observed in soil at a thickness

of up to eight feet. Even though a Class A-2 RAO was achieved in December 1999, residual soil contamination and other buried materials may be present in this location.

For RTN 4-13856 and 4-15907, TCE, 1,1-dichloroethene and vinyl chloride were detected in ground water monitoring wells initially in 1998 above the applicable standards which were installed in the area of the site. The same compounds were detected in surface water collected from Barnaby Cove which is located downgradient of the site. Response actions are currently ongoing. The depth to ground water varies at the site but is located at an average depth of ten feet below the ground surface.

The documented releases in soil and ground water at the site above the applicable standards constitute a REC which a high potential impact.

REC #2 – Existence of Large Quantity of Hazardous Chemicals at Southwestern Adjoining Property and Existence of Risk Management Plan (ISP Chemicals, 238 South Main Street)

During the site reconnaissance on the exterior portion of the adjoining ISP Freetown Fine Chemicals facility in May 2009, numerous 55-gallon drums of various chemicals were observed in an outside staging/storage area which appear to use appropriate housekeeping practices. As per the SARA Title II Right-to-Know regulations promulgated by the EPA, information on the names of chemicals was available for review in the Freetown Fire Department files. The information contained the names of over 58 chemicals that are currently being used at the ISP Chemical facility. Because of the toxic nature of chemicals present at the ISP facility, EPA requires the preparation of a Risk Management Plan in the event of a release which could volatilize to the environment, impacting nearby receptors. According to the Risk Management Plan, the prevailing winds from the ISP facility were determined to be from the southeast to the northwest, toward the layover site. Because of the large quantity and the toxic nature of the chemicals used at the facility, if there were a release of toxic and volatile chemical(s), it would most likely impact potential receptors at the layover site. Therefore, the proximity, volume, and characteristics of these toxic and volatile chemicals have been deemed a REC with a high potential impact.

REC #3 – Historic Use of Adjoining or Nearby Properties

Algonquin Synthetic Natural Gas operated a synthetic natural gas plant approximately 1,000 feet north of the site from 1973 and 1986. The following companies operated on the southwestern adjoining property at 238 South Main Street from 1964 to the present:

- Thompson Chemical Corporation,
- Continental Oil Corporation,
- Olin Corporation,
- Polaroid Corporation, and
- ISP Freetown Fine Chemicals.

Considering the above, numerous quantities of OHM have been stored, treated, used, and/or disposed on this property since the 1960s, and on the former Algonquin Synthetic Natural Gas property since the 1970s.

The historic uses of these properties, including the use of numerous OHM, is considered a REC with a high potential impact due to the potential for releases not previously identified to have occurred over the past 45 years of use; these releases could potentially migrate and affect the quality of site media.

REC #4 – Documented Releases at Nearby Property (Former Synthetic Natural Gas Plant), RTN 4-16971

Algonquin Synthetic Natural Gas operated a synthetic natural gas plant approximately 1,000 feet to the north of the site from 1973 and 1986 in an area currently used as a Stop and Shop Supermarket Distribution Facility. Petroleum constituents were detected in surficial soil samples and ground water at this property in 2000. A release of nickel and zinc was also identified in an area of the property adjoining the site. These metals were generated from the associated catalyst usage in synthetic gas plant activities. A total of 180 tons of petroleum impacted soil and 4,500 tons of nickel and zinc impacted soil was excavated and disposed of offsite. In March 2003, one surficial soil sample was collected from an area located between the proposed site and South Main Street and submitted for laboratory analysis of metals, VOCs, SVOCs, and herbicides. Nickel was detected at 160 mg/kg which exceeds the Method 1 S-1 standard of 20 mg/kg. Therefore, impacted soil may have migrated to the site and may be encountered during construction of the proposed ISP Layover Site. The potential presence of impacted soil from the nearby former synthetic natural gas plant constitutes a REC with a medium potential impact.

REC #5 – Documented Releases at Southwestern Adjoining Property (238 South Main Street), RTNs 4-10219, 4-10965, 4-11891, 4-13804, 4-13805, 4-18988, 4-14027, 4-14485, 4-15568, 4-15700, 4-16479, 4-16533, 4-16702, 4-16703, 4-19297, and 4-19557

Although numerous releases have occurred at the adjoining ISP Chemicals property located immediately southwest of the layover site, the majority of these releases were released to the air or achieved a Class A-1 or B-1 RAO, in which contamination approached or achieved background. Two of these releases achieved a Class A-2 RAO, in which contamination was not reduced to background; however, they both achieved No Significant Risk, and most likely did not migrate to or impact the layover site. However, the quantity of the releases at the adjoining property constitutes a REC with a medium potential impact as unidentified or improperly assessed releases could exist.

Weaver's Cove East Layover Site

The Weaver's Cove East Layover site consists of three parcels and is located between the railroad tracks which are located to the west and North Main Street which is located to the east in a mixed use area of Fall River (Figure 4.12-18). The former Shell Oil Company petroleum product distribution facility is located southwest of the railroad tracks. The Weaver's Cove portion of the Taunton River is located immediately west and northwest of the railroad tracks. The parcels comprising the site are currently undeveloped and surrounded by a chain-link fence. Groundwater monitoring wells were observed throughout the site.

The southernmost parcel (Parcel T-1-38) consists of a concrete slab from a former repair garage that was used by the New England Telephone & Telegraph company. The land around the slab consists of grass, shrubs and trees. The center parcel (Parcel T-1-33) consists of a heavily vegetated wetland area that reportedly was formed from a depression caused by the weight of a former gasoline AST. The northernmost parcel (Parcel T-15-1) is vegetated and primarily covered with shrubs and trees.

Based on the tasks conducted for the Weaver's Cove East Layover site Phase I ESA, five RECs and one potential environmental concern were identified and are described below.

REC #1 – Previous Use of Site as Oil Storage Facility and Documented Petroleum Release at Site, RTN 4-749

According to historic Sanborn maps, from the early to mid 1900s, a large gasoline AST was located on the center portion of the site. Numerous ASTs of various sizes were also located west of the site across the railroad tracks. The portion of the site that contained the AST was listed as owned by Shell Oil Company (Shell). The AST located at the site was removed in the mid-1900s. According to documents reviewed, Shell operated a crude oil refinery, product storage and distribution facility at the western abutting property from 1920 to 1929 and a petroleum product distribution facility from 1929 to 1995.

Documents obtained from the Fall River Fire Department include a letter from the DEP to Shell Oil Company at One New Street dated February 9, 1993. The letter refers to the Notices of Responsibility dated 1989 and 1992 relative to releases of petroleum products on their property and requests "Short Term Measure Activities" to address the oil release. An attached map prepared by Handex dated November 4, 1992 depicts a large area of petroleum impacts, which includes the site and the abutting property located west of the site, as well as the former and current tank locations. Contours on the map show the thickness of the LNAPL in ground water of thickness up to 2.5 feet. In the center of the site, the LNAPL thickness is shown to be two feet.

The previous use of the site as an oil storage facility and the documented extensive petroleum release constitutes a REC with a high potential impact.

REC #2 – Previous Use of Adjoining Property as Petroleum Product Distribution Facility and Documented Release (Shell Oil Company, 1 New Street), RTN 4-749

As stated in REC #1 above, Shell operated a crude oil refinery, product storage and distribution facility at the western abutting property from 1920 to 1929 and a petroleum product distribution facility from 1929 to 1995. According to documents reviewed, extensive petroleum releases occurred on that property during that time. According to a recent ROS Status Report dated November 2008, this property is currently being remediated with a LNAPL recovery and ground water treatment system. Even though active remediation activities are currently ongoing and ground water flows to the northwest toward the Taunton River and away from the site, the presence of extensive LNAPL in the subsurface is deemed a REC with a high potential impact.

REC #3 – Previous Use of Building on Parcel T-1-38 as a Commercial Garage

Recent aerial photographs of the southern portion site located on Parcel T-1-38 show the presence of a concrete slab, indicating that a building was once present. A Sanborn map dated 1976 shows the existence of a "private garage" that was operated by New England Telephone and Telegraph Company.

It is assumed that vehicle repairs were performed in this building and that petroleum and other OHM were stored, used, and generated. The petroleum and OHM would typically consist of motor oil, waste oil, fuel oil, alcohol, anti-freeze, and degreasing chemicals that may contain chlorinated solvents. The storage, use, and/or generation of these products may have or could result in a release of OHM constituting a REC with a medium potential impact.

REC #4 – Existence of USTs on Parcel T-1-38

According to records received from the Fall River Fire Prevention Department, three USTs were previously located on Parcel T-1-38, which is described above in REC #3, with an address of 2680 North Main Street. The USTs included a 4,000-gallon gasoline tank, a 275 waste oil tank, and a 6,000-gallon No. 6 fuel oil tank. The records document the removal of the gasoline and waste oil tanks which were removed in 1988 and 1987, respectively. There are no records documenting the removal of the No. 6 fuel oil tank.

It was not indicated on the removal records if contamination was encountered during the removal of the gasoline and waste oil tanks and detailed closure reports were not identified. Therefore, OHM may be present in the locations of the former USTs. In addition, it is possible that the No. 6 fuel oil UST, the integrity of which is unknown, may still be present. OHM associated with the USTs formerly/currently on this property would constitute a REC with a medium potential impact.

REC #5 – Possible Presence of Elevated Concentrations of Metals in Soil at Adjoining Property (1 New Street)

According to a report reviewed for a western adjoining property, arsenic and beryllium were detected in soil above applicable standards at a depth beginning from the ground surface to a depth of approximately eight feet below grade. The detection of these metals are believed to be attributable to historic filling activities in the 1920s during which fill material was dredged from the Taunton River. According to historic Sanborn maps, the area located to the west of the site was previously under water and was filled in the early 1900s. The Sanborn map also shows a portion of the site to be previously under water; which appears to have been filled in the early 1900s. Therefore, arsenic and beryllium-impacted soil may be present in site soils. Coal ash was found to be present in the fill on the adjacent property; therefore, the presence of metals may be consistent with the MCP's definition of background, and no response actions under the MCP may be necessary. However, aside from the regulatory provisions, the potential presence of OHM at levels which could pose a risk to human or ecological populations is considered a REC with a low potential impact and would need to be managed appropriately during any proposed construction activities.

Potential Environmental Concern

Weaver's Cove East Layover site has one potential environmental concern. During the site reconnaissance, pole-mounted electrical transformers were observed on the site. It is not known if these transformers contain PCB transformer oil. The transformers have the potential to leak transformer oil directly onto the ground surface.

Weaver's Cove West Layover Site

The Weaver's Cove West Layover site is located between Weaver's Cove which is part of the Taunton River and the railroad tracks in Fall River (Figure 4.12-19). The site includes both developed and undeveloped land. The developed portion is highly disturbed by industrial uses associated with a petroleum products facility. The industrial portion is a former Shell Oil petroleum product distribution facility, and consists of completely cleared land with several large aboveground storage tanks and a short shipping dock. The undeveloped portion is vegetated. Approximately seven acres of the Shell site, primarily the undeveloped portion, would be utilized by the proposed layover facility. Surrounding land

in all directions except west and northwest is similarly undeveloped or industrial property. A narrow strip of lightly developed land (a cell phone tower site) is located northwest of the site.

Based on the tasks conducted for the Weaver's Cove West Layover site Phase I ESA, three RECs and one potential environmental concern were identified and are described below.

REC #1 – Existence of USTs and ASTs at Site

According to records received from the Fall River Fire Department, a total of 12 gasoline, fuel oil, and used oil tanks ranging in size from 1,000 gallons to 15,000 gallons were removed from the site from 1989 to 1998. The removal records did not indicate if the tanks were USTs or ASTs.

A letter from Shell Oil Company to the Fall River Fire Department dated November 1990 indicated that Shell planned to dismantle ten ASTs at the site. The ASTs contained solvents, oil, and roofing tar. The size of the tanks ranged from 5.4 barrels (equivalent to 227 gallons) to 55.5 barrels (equivalent to 2,331 gallons).

A Certificate of Registration dated April 25, 2002 to Jay Cashman, Inc. at One New Street, the address of the site, grants the "keeping, storage, manufacture or sale of flammables or explosives as follows: 64,000,000 gallons of various petroleum products."

A UST inventory notification dated May 1991 stated that eight USTs were located at the site. Six of the USTs were listed as being permanently out of use and two of the USTs were listed as being currently in use. The size of the USTs or the type of product was not provided. The tank removal records list only six USTs having been removed since 1991.

It was not indicated on the tank removal records if contamination was encountered during the removal and detailed closure reports were not identified. Therefore, OHM may be present in the locations of the former USTs. In addition, it is possible that at least two USTs, the integrity of which is unknown, may still be present. OHM associated with the USTs and ASTs that were formerly and currently may be present on this property would constitute a REC with a high potential impact.

REC #2 – Previous Use Site as Petroleum Product Distribution Facility and Documented Release, RTN 4-749

Shell operated a crude oil refinery, product storage and distribution facility on the site from 1920 to 1929 and a petroleum product distribution facility on the site from 1929 to 1995. According to documents reviewed, extensive petroleum releases occurred on the site during that time.

Documents reviewed include a letter from the DEP to Shell Oil Company at One New Street dated February 9, 1993. The letter refers to the Notices of Responsibility dated 1989 and 1992 relative to releases of petroleum products on their property and requests "Short Term Measure Activities" to address the oil release. A map of the site prepared by Handex dated November 4, 1992 depicts a large area of petroleum impacts, as well as the former and current tank locations. Contours on the map show the thickness of the LNAPL in ground water at the site with thicknesses up to 2.5 feet.

According to a recent ROS Status Report dated November 2008, this property is currently being remediated with a LNAPL recovery and ground water treatment system. The previous use of the site as

an oil storage facility and the documented extensive petroleum release constitutes a REC with a high potential impact.

REC #3 – Possible Presence of Elevated Concentrations of Metals in Site Soil

According to a report reviewed for the property, arsenic and beryllium were detected in soil above applicable standards at a depth beginning from the ground surface to a depth of approximately eight feet below grade. The detection of these metals are believed to be attributable to historic filling activities in the 1920s during which fill material was dredged from the Taunton River. According to historic Sanborn maps, the area comprising the site was previously under water and was filled in the early 1900s. Therefore, arsenic and beryllium-impacted soil may be present in site soils. Coal ash was found to be present in the fill on the site; therefore, the presence of metals may be consistent with the MCP's definition of background, and no response actions under the MCP may be necessary. However, aside from the regulatory provisions, the potential presence of OHM at levels which could pose a risk to human or ecological populations is considered a REC with a low potential impact and would need to be managed appropriately during any proposed construction activities.

Potential Environmental Concern

Weaver's Cove West Layover site has one potential environmental concern. During the site reconnaissance, pole-mounted electrical transformers were observed on the site. It is not known if these transformers contain PCB transformer oil. The transformers have the potential to leak transformer oil directly onto the ground surface.

4.12.2.5 SUMMARY

Phase I ESAs were conducted for the station sites, layover facility sites and rail corridors associated with the alternatives under consideration. The Phase I ESAs indicate that multiple proposed station, layover, and bypass locations either border or are the location of known and/or suspected OHM contamination and may also contain building materials that can include asbestos, lead, and other OHM. These conditions represent the potential to encounter OHM impacts when demolishing buildings or constructing new stations and rails, including soil excavation and ground water management. A table summarizing the RECs and potential environmental concerns for each station site is provided in Table 4.12-1.

Based on the findings of the Phase I ESAs, further evaluation for subsurface contamination may be needed for proposed station, layover, and rail locations with RECs classified as having a high or medium potential to impact each site and which may be subject to disturbance during implementation of the South Coast Rail project prior to acquisition and/or construction. The results of the subsurface investigations previously conducted for Whale's Tooth Station and Wamsutta Layover show that OHM is currently present above regulatory standards below an engineered barrier; these properties, therefore, do not have to be reassessed. Based on updated information regarding Battleship Cove Station and King's Highway Station, no property acquisition or station construction will occur; therefore, no further investigations are recommended for these stations. Further investigation is recommended at these sites:

- Barrowsville;
- Fall River Depot;
- Raynham Place;
- Taunton Station;
- Downtown Taunton Station;
- Whittenton Branch;
- Church Street Layover;
- ISP Layover;

Table 4.12-1: Summary of RECs by Location

Location	REC No.	Ranking	Address	RTN	Impact
King's Highway	1	Medium	Site (1024 King's Hwy)	Not applicable	Historical use
King's Highway	2	Low	Adjoining property (494 Church Street)	4-15181	Gasoline release
Whale's Tooth	1	Medium	Site (532, 536 & 540 Acushnet Avenue)	4-118	Confirmed contamination (PAHs, PCBs, arsenic lead) and capping
Whale's Tooth	2	Medium	Nearby property (Acushnet Estuary)	4-122	PCB release
Whale's Tooth	3	Low	Adjoining property (618 Acushnet Avenue)	4-14791	No. 2 fuel oil release
Fall River Depot*	1	High	Site (390, 775 & 825 Davol St. & 61 Pearce St.)	Not applicable	Confirmed contamination (VPH, EPH, PAHs)
Fall River Depot*	2	High	Site (see above)	Not applicable	Presence of USTs
Fall River Depot*	3	High	Site	Not applicable	Historic use
Fall River Depot*	4	Medium	Site (729 Davol Street)	Not applicable	Historic and current use as vehicle repair garage
Fall River Depot*	5	Medium	Site (753 Davol Street and 175 Bayles Street)	Not applicable	Use as machine shop and metal fabrication shop
Battleship Cove	1	Medium	Adjoining properties	Not applicable	Historic use
Battleship Cove	2	High	Site (24 Ponta Delgata Boulevard)	Not applicable	Confirmed contamination (PAHs and lead)
Easton Village	1	Low	Adjoining property (28 Main St)	4-19778	Fuel oil release
Easton Village	2	Low	Adjoining property (64 Main St)	4-10839	Petroleum and historic fill release
Raynham Place*	1	Low	Site (1958 Broadway)	Not applicable	Historic use
Barrowsville*	1	Medium	Site (0, 209, and 225 South Worcester Street)	Not Applicable	Indications of dumping and burning of OHM
Taunton*	1	High	Site (100 Arlington Street & 30 William Hooke Lane)	Not applicable	Historic use
Taunton*	2	Medium	Site (100 Arlington St.)	4-20854	Mercury release
Taunton*	3	High	Site (100 Arlington St.)	4-374	Metals and petroleum release
Taunton*	4	High	Site (30 William Hooke Lane)	4-403	Gasoline and kerosene release
Taunton*	5	Medium	Site (30 William Hooke Lane)	Not applicable	Possible electrical transformer release
Downtown Taunton*	1	High	Site	4-695	Documented release
Downtown Taunton*	2	High	Site and adjoining properties	Not applicable	Historic use

Table 4.12-1 (continued)

Location	REC No.	Ranking	Address	RTN	Impact
Downtown Taunton*	3	Low	Adjoining property (2 Oak St.)	Not applicable	Former and current existence of USTs and use as vehicle repair and maintenance
Downtown Taunton*	4	Low	Nearby property (5 Myrtle Street)	4-10550	Chlorinated VOC release
Downtown Taunton*	5	Low	Adjoining Property (1 Washington Street)	4-12457	PAH release and AUL
Church Street Layover*	1	Medium	Adjoining Property	Not applicable	Presence of pooled oil and stained soil
Church Street Layover*	2	Medium	Site (781 Church St.)	Not applicable	Current existence of 3,000 gallon diesel AST with stained soil
Church Street Layover*	3	Medium	Adjoining Property	Not applicable	Historic and current use of area near site for vehicle repair and maintenance
Church Street Layover*	4	Medium	Site or Adjoining Property	Not applicable	Existence of USTs near or on site
ISP Layover*	1	High	Site	4-13482, 4-13856, and 4-15907	Drums containing VOCs, SVOCs, EPH, thallium and PVC powder
ISP Layover*	2	High	Adjoining Property (238 South Main Street)	Not applicable	Existence of large quantities of hazardous chemicals
ISP Layover*	3	High	Adjoining Property (238 South Main Street)	Not applicable	Historic Use of Adjoining and nearby properties
ISP Layover*	4	High	[d] Nearby Property	4-16971	Petroleum, nickel and zinc
ISP Layover*	5	High	Adjoining Property	4-10219, 4-10965, 4-11891, 4-13804, 4-13805, 4-18988, 4-14027, 4-14485, 4-15568, 4-15700, 4-16479, 4-16533, 4-16702, 4-16703, 4-19297, 4-19557	Numerous releases of various chemicals
Wamsutta Layover	1	Medium	Site	4-118	PCBs, arsenic, lead, and PAHs
Wamsutta Layover	2	Medium	Nearby Property (Acushnet Estuary)	4-122	PCB release

Table 4.12-1 (continued)

Location	REC No.	Ranking	Address	RTN	Impact
Wamsutta Layover	3	Low	Adjoining Property (618 Acushnet Avenue)	4-14791	No. 2 fuel oil from UST
Wamsutta Layover	4	Low	Nearby Property (1 Wamsutta Street)	4-11715	Diesel fuel from UST
Wamsutta Layover	5	Low	Nearby Property (New Bedford Main Interceptor)	4-127	PCBs
Weaver's Cove West Layover*	1	High	Site	Not applicable	Existence of USTs and ASTs
Weaver's Cove West Layover*	2	High	Site	4-749	Previous use as petroleum product distribution facility and documented release of petroleum
Weaver's Cove West Layover*	3	Low	Site	Not applicable	Detection of arsenic and beryllium in site soils
Weaver's Cove East Layover*	1	High	Site	4-749	Previous use as oil storage facility and documented release
Weaver's Cove East Layover*	2	High	Adjoining property (Shell Oil Co., 1 New Street)	4-749	Previous use as petroleum products distribution facility and documented release
Weaver's Cove East Layover*	3	Medium	Site (Parcel T-1-38)	Not applicable	Previous use as commercial garage
Weaver's Cove East Layover*	4	Medium	Site (Parcel T-1-38)	Not applicable	Existence of USTs
Weaver's Cove East Layover	5	Low	Adjoining Property (1 New Street)	Applicable	Detection of arsenic and beryllium in soil
Attleboro Bypass	1	Low	Shpack Landfill, Union Road, Norton	4-132	Release of OHM into environmental media
Whittenton Branch*	1	Medium	Adjoining property (437 Whittenton Ave.)	4-18532	Transformer oil releases
Whittenton Branch*	2	Medium	Adjoining property (437 Whittenton Ave.)	Not applicable	Historic use
Whittenton Branch*	3	Medium	Adjoining property (Segment 1)	Not applicable	Historic dumping in wetland
Whittenton Branch*	4	High	Adjoining property (728 Broadway, Raynham)	4-16976	Kerosene release and use of property

* Further investigation is recommended at these sites

- Weaver's Cove East Layover; and
- Weaver's Cove West Layover.

The purpose of the subsurface investigations will be to screen each site for the presence of OHM which could impact construction and/or operation of the stations/bypasses. In areas determined to be impacted by a release of OHM, soil and ground water information will be useful in developing a management plan for impacted media and defining worker protection requirements and required response actions (if any) under the MCP.

4.12.3 ANALYSIS OF IMPACTS

4.12.3.1 NO-BUILD (ENHANCED BUS) ALTERNATIVE

Under this alternative, no new rail or bus service would be provided to Southeastern Massachusetts.

Existing commuter bus service to Boston from New Bedford, Fall River, and Taunton is currently provided by three commuter bus carriers: DATTCO provides Boston – New Bedford service; Peter Pan provides Boston – Fall River bus service; and Bloom provides Boston – Taunton service.

The No-Build Alternative includes bus schedule enhancements, new and expanded park-and-ride facilities, transportation demand management, and transportation policy enhancements for commuter bus. In addition to these enhancements, incentives and other means would be considered to enable the private commuter bus service operators to acquire a new fleet of fuel efficient and clean emission buses. Ideally, these buses would provide rider comfort and amenities comparable to commuter rail service.

Silver City Galleria is currently a paved parking area that would be restriped to allow for better bus circulation and easier parking maneuvers. No soil disturbance is expected to occur in this area. The current Park & Ride facilities referred to as Route 106/Route 24 in West Bridgewater and Mount Pleasant Street in New Bedford would remain at these locations and would be restriped. No construction that would require soil disturbance is expected to occur in these areas. Therefore, the No-Build Alternative would not require any remediation of properties that contain OHM. Since there would be no positive changes that would have resulted from the cleanup of properties containing OHM, the No-Build Alternative could be considered to have a potential negative impact.

4.12.3.2 SOUTHERN TRIANGLE (COMMON TO ALL RAIL ALTERNATIVES)

Portions of the rail lines within the southern part of the South Coast Rail Study Area are common to all rail alternatives. These rail lines form a rough triangular shape running south from Myricks Junction to Fall River (the Fall River Secondary) and from Weir Junction through Myricks Junction to New Bedford (the New Bedford Main Line), and are therefore referred to as the Southern Triangle.

The Southern Triangle includes of six stations, which include a total of 12 identified RECs. Three of the RECs were evaluated as having a “high” impact, seven RECs were evaluated with “medium” impacts and two RECs were evaluated as having “low” impacts. Table 4.12-2 lists each of the RECs for the stations along the Southern Triangle. Stations located on the Southern Triangle include Battleship Cove, Taunton Depot, Fall River Depot, Freetown, King’s Highway and Whale’s Tooth. A total of eight structures would be demolished for station construction.

In summary, there is a substantial likelihood that contamination would be encountered and would need to be addressed at Battleship Cove and Fall River Depot stations. There is a moderate likelihood that contamination would be encountered and need to be addressed at King’s Highway station. An engineered barrier was constructed at the Whale’s Tooth site and contaminated soil was left in place beneath the barrier. There are potential impacts related to exposure during the future excavation or construction at this proposed station. It is less likely that contamination would be encountered at the Taunton Depot and Freetown stations.

Table 4.12-2: RECs - Southern Triangle

Station	Number of Structures to be Demolished	REC Description	RTN	Relative Impact
Battleship Cove	0	Analytical Results from Previous Subsurface Investigation	Not applicable	High
		Historical Use of the Adjoining Properties	Not applicable	Medium
Taunton Depot	0	None	Not applicable	Not applicable
Fall River Depot	8	Analytical Results from Previous Subsurface Investigations	Not applicable	High
		Previous and Current Existence of USTs	Not applicable	High
		Historic Use of Site Properties	Not applicable	Medium
		Use of Site (729 Davol Street) as Vehicle Repair Garage	Not applicable	Medium
		Use of Site (753 Davol Street) as Machine Shop and Metal Fabrication Shop	Not applicable	Medium
Freetown	0	None	Not applicable	Not applicable
King's Highway	0	Historic Use of Site as Industrial Manufacturing	Not applicable	Medium
		Gasoline Release at Adjoining Property (494 Church St.)	4-15181	Low
Whale's Tooth	0 (has small attendant's booth and storage shed)	Confirmed Contamination and Historical Use of Property as Freight Yard	4-118	Medium
		Acushnet Estuary (New Bedford Superfund Site)	4-122	Medium
		No. 2 Fuel Oil Release at Adjoining Property (618 Acushnet Avenue)	4-14791	Low

4.12.3.3 ATTLEBORO ALTERNATIVE

The Attleboro Alternative would provide electric or diesel commuter rail service to South Station using the Northeast Corridor, proposed Attleboro Bypass, Attleboro Secondary, New Bedford Main Line and Fall River Secondary. Both electric (Attleboro Electric) and diesel (Attleboro Diesel) commuter rail options were evaluated. Figure 4.12-20 shows the route of the Attleboro Alternatives.

This alternative requires improvements to track infrastructure along the Northeast Corridor; the Attleboro Bypass; and the Attleboro Secondary. This alternative also requires the reconstruction of track on the Southern Triangle, which is common to all rail alternatives, including the New Bedford Main Line and the Fall River Secondary. Infrastructure improvements also include constructing, reconstructing, or widening 45 bridges and constructing or reconstructing 40 railroad at-grade crossings. This alternative would include seven new commuter rail stations (Barrowsville, Battleship Cove, Taunton Depot, Fall River Depot, Freetown, Downtown Taunton and Whale's Tooth) and major reconstruction at three existing commuter rail stations (Canton Junction, Sharon, Mansfield) as well as minor work at the existing commuter rail station at Route 128. This alternative would include two overnight layover

facilities, one on the New Bedford Main Line and one on the Fall River Secondary, to be chosen from the four overnight layover alternatives.

For the electrified option, the traction power system would include one main substation in Taunton, one switching station in Attleboro, and six paralleling stations (one in Norton, one in Berkley, two in Freetown, one in New Bedford, and one in Fall River).

Six of the seven stations are summarized in the Southern Triangle section. For the segment specific to just the Attleboro Alternative, there are two new stations and one by-pass, which include Barrowsville, Downtown Taunton and the Attleboro Bypass. Table 4.12-3 lists each REC for Barrowsville, Downtown Taunton and the Attleboro Bypass. A total of eight structures would be demolished for station construction. Taking the Southern Triangle into consideration, there are a total of 19 RECs identified. Five of the RECs were evaluated as having a "high" impact, eight RECs were evaluated with "medium" impacts and six RECs were evaluated as having "low" impacts.

Table 4.12-3: RECs - Attleboro Alternatives

Station/ Bypass	Number of Structures to be Demolished	REC Description	RTN	Relative Impact
Barrowsville	0	Evidence of Dumping and Burning of OHM and Other Wastes	Not applicable	Medium
Downtown Taunton	0	Documented Release at Site	4-695	High
		Historic Use of Site and Adjoining Properties	Not applicable	High
		Former and Current Existence of USTs and Use as Vehicle Repair and Maintenance at Adjoining Property (2 Oak Street)	Not applicable	Low
		Release at Nearby Property (5 Myrtle Street)	4-10550	Low
		Release at Adjoining Property (1 Washington Street)	4-12457	Low
Attleboro Bypass	0	Potential Release from Shpack Landfill	4-132	Low

In summary, for the two stations and one-bypass common only to the Attleboro Alternative, there is a substantial likelihood that contamination would be encountered and would need to be addressed at Downtown Taunton station. There is a moderate likelihood that contamination would be encountered and need to be addressed at Barrowsville station. It is less likely that contamination would be encountered at the Attleboro Bypass near the Shpack Landfill because the edge of the landfill is located relatively distant (approximately 700 feet) from the proposed Attleboro Alternative, the ground water flow velocity is low, and cleanup activities to address the contamination have been initiated and are ongoing.

Since no property acquisitions are planned for the Canton Junction, Sharon, Route 128 and South Station commuter rail stations, Phase I ESAs were not prepared. During the reconstruction efforts, mitigation measures, including special handling, dust control, and management and disposal of contaminated soil and ground water, are recommended. Phase I ESAs will be prepared for Mansfield Station at a later phase of this project if the Attleboro Alternative is selected as the LEDPA.

4.12.3.4 STOUGHTON ALTERNATIVES

The Stoughton Alternatives would provide electric or diesel commuter rail service to South Station using the Northeast Corridor, Stoughton Line, New Bedford Main Line, and Fall River Secondary. Both electric (Stoughton Electric) and diesel (Stoughton Diesel) commuter rail options were evaluated for this alternative. The New Bedford route would be 54.9 miles long and the Fall River route would be 52.4 miles long. Figure 4.12-21 shows the route of the Stoughton Alternative.

This alternative requires improvements to track infrastructure along the Stoughton Line. This alternative also requires reconstructing track on the Southern Triangle, which is common to all rail alternatives, including the New Bedford Main Line and the Fall River Secondary. Infrastructure improvements also include constructing, reconstructing, or widening 43 bridges and constructing or reconstructing 47 railroad at-grade crossings.

This alternative would include ten new commuter rail stations (Battleship Cove, Taunton Depot, Easton Village, Fall River Depot, Freetown, North Easton, King's Highway, Raynham Place, Taunton, Whale's Tooth) and major reconstruction at two existing commuter rail stations (Canton Center and Stoughton). This alternative would include two overnight layover facilities, one on the New Bedford Main Line and one on the Fall River Secondary, to be chosen from the four overnight layover alternatives.

For the electrified option, the traction power system would include two main substations (one in Easton and one in New Bedford), two switching stations (one in Canton and one in Berkley), and six paralleling stations (one in Easton, one in Taunton, two in Freetown, one in New Bedford, and one in Fall River).

Six of the ten stations are summarized in the Southern Triangle section. For the segment specific to just the Stoughton Alternative, there are four stations, which include Easton Village, North Easton, Raynham Place, and Taunton. Table 4.12-4 lists each REC for Easton Village, North Easton, Raynham Place, and Taunton. Taking the Southern Triangle into consideration, there are a total of 20 RECs identified. Six of the RECs were evaluated as having a "high" impact, nine RECs were evaluated with "medium" impacts and five RECs were evaluated as having "low" impacts. A total of approximately 25 structures would be demolished for station construction.

In summary, there is a substantial likelihood that contamination would be encountered and would need to be addressed at Taunton station. It is less likely that contamination would be encountered at Easton Village and Raynham Place stations. It is unlikely that contamination would be encountered at North Easton station.

4.12.3.5 WHITTENTON ALTERNATIVES

The Whittenton Alternatives would provide electric or diesel commuter rail service to South Station through Stoughton, connecting to the existing Stoughton Line using the Whittenton Branch through the City of Taunton. Both electric (Whittenton Electric) and diesel (Whittenton Diesel) commuter rail options were evaluated for this alternative. Figure 4.12-22 shows the Whittenton Alternatives.

This alternative requires improvements to track infrastructure along the Stoughton Line; Whittenton Line and Attleboro Secondary. This alternative also requires reconstructing track on the Southern Triangle, which is common to all rail alternatives, including the New Bedford Main Line and the Fall River

Secondary. Infrastructure improvements also include constructing, reconstructing, or widening 40 bridges and constructing or reconstructing 54 railroad at-grade crossings.

This alternative would include ten new commuter rail stations (Battleship Cove, Taunton Depot, Easton Village, Fall River Depot, Freetown, King's Highway, North Easton, Raynham Place, Downtown Taunton, and Whale's Tooth) and major reconstruction at two existing commuter rail stations (Canton Center and Stoughton). This alternative would include two overnight layover facilities, one on the New Bedford Main Line and one on the Fall River Secondary, to be selected from the four overnight layover alternatives.

Table 4.12-4: RECs - Stoughton Alternatives

Station	Number of Structures to be Demolished	REC Description	RTN	Relative Impact
Easton Village	0	Fuel Oil Release at Adjoining Property (28 Main Street)	4-19778	Low
		Petroleum and Historic Fill Release at Nearby Property (64 Main Street)	4-10839	Low
North Easton	0	None	Not applicable	Not applicable
Raynham Place	Estimated 16	Historic Use of Site as Truck Maintenance and Industrial Storage	Not applicable	Low
Taunton	1 (also has flooring/slabs from previous buildings destroyed by fires)	Historic Use of Site	Not applicable	High
		Conditions Associated with Release and CERCLIS Listing at Site (100 Arlington Street)	4-374	High
		Conditions Associated with Release at Site (30 William Hooke Lane)	4-403	High
		Conditions Associated with Release at Site (100 Arlington St.)	4-20854	Medium
		Transformer Found at Site (30 William Hooke Lane)	Not applicable	Medium

For the electrified option, the traction power system would include two main substations (one in Easton and one in New Bedford), two switching stations (one in Canton and one in Berkley), and six paralleling stations (one in Easton, one in Taunton, two in Freetown, one in New Bedford, and one in Fall River).

Six of the ten stations are summarized in the Southern Triangle section. For the segment specific to just the Whittenton Alternatives, there are four stations and one bypass, which include Easton Village, North Easton, Raynham Place, Downtown Taunton, and the Whittenton Branch. Table 4.12-5 lists each of the RECs for Easton Village, North Easton, Raynham Place, Downtown Taunton and Whittenton Branch. A total of approximately 25 structures would be demolished for station construction. Taking the Southern Triangle into consideration, there are a total of 24 RECs identified. Six of the RECs were evaluated as having a "high" impact, ten RECs were evaluated with "medium" impacts and eight RECs were evaluated as having "low" impacts.

Table 4.12-5: RECs - Whittenton Alternatives

Station/ Bypass	Number of Structures to be Demolished	REC Description	RTN	Relative Impact
Easton Village	0	Fuel Oil Release at Adjoining Property (28 Main Street)	4-19778	Low
		Petroleum and Historic Fill Release at Nearby Property (64 Main Street)	4-10839	Low
North Easton	0	None	Not applicable	Not Applicable
Raynham Place	Estimated 16	Historic Use of Site as Truck Maintenance and Industrial Storage	Not applicable	Low
Downtown Taunton	0	Documented Release at Site	4-695	High
		Historic Use of Site and Adjoining Properties	Not applicable	High
		Former and Current Existence of USTs and Use as Vehicle Repair and Maintenance at Adjoining Property (2 Oak Street)	Not applicable	Low
		Release at Nearby Property (5 Myrtle Street)	4-10550	Low
		Release at Adjoining Property (1 Washington Street)	4-12457	Low
Whittenton Branch	0	Release History and Observations of Adjoining Property (728 Broadway)	4-16976	High
		Historic Use of Adjacent Property as Industrial Manufacturing	Not applicable	Medium
		Indication of Significant Historical Dumping	Not applicable	Medium
		Transformer Oil Release on Adjacent Property	4-18532	Medium

4.12.3.6 RAPID BUS ALTERNATIVE

The Rapid Bus Alternative would provide commuter bus service to South Station via Route 140, Route 24, and I-93. South of the I-495 interchange in Raynham, buses would travel in the general purpose lanes with mixed traffic. North of I-495, buses would use a combination of new zipper bus lanes, new reversible bus lanes, two-lane bus roadways, existing zipper HOV lanes, and existing HOV lanes, along with a short section in mixed traffic. Figure 4.12-23 shows the Rapid Bus Alternative.

This alternative requires improvements to highway infrastructure along Route 24 (construct third lane from Route 140 to I-495, a distance of 5.4 miles; construct reversible bus lane at I-495 interchange, a distance of 1.1 miles; and construct zipper bus lane from I-495 to Harrison Boulevard, a distance of 15.7 miles); and Route 128/ I-93 (construct reversible bus lane from Harrison Boulevard on Route 24 to Logan Express Lot, a distance of 4.2 miles; and construct two-lane bus roadway from Logan Express Lot to existing HOV zipper lane on the Southeast Expressway, a distance of 1.6 miles). Infrastructure improvements also include constructing, reconstructing, or widening 27 bridges and reconstructing 11 highway interchanges.

In summary, there is a substantial likelihood that contamination would be encountered and would need to be addressed at the Downtown Taunton station. It is less likely that contamination would be encountered at Raynham Place stations.

This alternative would include six new rapid bus stations (Fall River Depot, Freetown, Galleria Station, King's Highway, Downtown Taunton, and Whale's Tooth) and major expansion of the bus terminal at South Station.

It is assumed that bus stations would have to be constructed at each station location, with the exception of the proposed Galleria Station. Because no soil disturbance would occur at the proposed Galleria Station, a Phase I ESA was not prepared. Table 4.12-6 lists each of the RECs by station location for the Rapid Bus Alternative consisting of Fall River Depot, Freetown, Galleria, King's Highway, Downtown Taunton and Whale's Tooth. A total of eight structures would be demolished for station construction. For this alternative, a total of 15 RECs were identified. Four of the RECs were evaluated as having a "high" impact, six RECs were evaluated with "medium" impacts and five RECs were evaluated as having "low" impacts.

In summary, there is a substantial likelihood that contamination would be encountered and would need to be addressed at Fall River Depot and Downtown Taunton stations. There is a moderate likelihood that contamination would be encountered and would need to be addressed at King's Highway station. It is unlikely that contamination would be encountered at Freetown station. An engineered barrier was constructed at the Whale's Tooth site and contaminated soil was left in place beneath the barrier. There are potential impacts related to exposure during the future excavation or construction at this site.

4.12.3.7 LAYOVER FACILITIES

One midday layover facility is planned for the Boston area, but alternative sites have not been selected yet.

Five layover sites have been identified along the Southern Triangle and include the ISP Layover site in Freetown, Weaver's Cove East Layover and Weaver's Cove West Layover sites in Fall River, Church Street Layover site in New Bedford and Wamsutta Layover site in New Bedford. For the layover sites, a total of 22 RECs have been identified. Eight of the RECs were evaluated as having "high" impacts, eight RECs were evaluated with "medium" impacts and six RECs were evaluated as having "low" impacts. Table 4.12-7 lists each of the RECs by layover site. No structures are anticipated to be demolished for the layover sites for station construction.

In summary, there is a substantial likelihood that contamination would be encountered and would need to be addressed at ISP, Church Street Weaver's Cove East, and Weaver's Cove West layover sites. An engineered barrier was constructed at the Wamsutta layover site and contaminated soil was left in place beneath the barrier. There are potential impacts related to exposure during the future excavation or construction at this site.

The selected midday bus layover facility for the Rapid Bus Alternative is the existing Logan Express facility in Braintree. No construction would be needed at this location and thus no impacts associated with subsurface contamination would occur.

Table 4.12-6: RECs - Rapid Bus Alternative

Station	Number of Structures to be Demolished	REC Description	RTN	Relative Impact
Fall River Depot	8	Analytical Results from Previous Subsurface Investigations	Not applicable	High
		Previous and Current Existence of USTs	Not applicable	High
		Historic Use of Site Properties	Not applicable	Medium
		Use of Site (729 Davol Street) as Vehicle Repair Garage	Not applicable	Medium
		Use of Site (753 Davol Street) as Machine Shop and Metal Fabrication Shop	Not applicable	Medium
Freetown	0	None	Not applicable	Not applicable
Galleria	0	Not applicable – Phase I ESA Not Performed	Not applicable	Not applicable
King's Highway	0	Historic Use of Site as Industrial Manufacturing	Not applicable	Medium
		Gasoline Release at Adjoining Property (494 Church Street)	4-15181	Low
Downtown Taunton	0	Documented Release at Site	4-695	High
		Historic Use of Site and Adjoining Properties	Not applicable	High
		Former and Current Existence of USTs and Use as Vehicle Repair and Maintenance at Adjoining Property (2 Oak Street)	Not applicable	Low
		Release at Nearby Property (5 Myrtle Street)	4-10550	Low
		Release at Adjoining Property (1 Washington Street)	4-12457	Low
Whale's Tooth	0 (has small attendant's booth and storage shed)	Confirmed Contamination and Historical Use of Property as Freight Yard	4-118	Medium
		Acushnet Estuary (New Bedford Superfund Site)	4-122	Medium
		No. 2 Fuel Oil Release at Adjoining Property (618 Acushnet Avenue)	4-14791	Low

Table 4.12-7: RECs - Layover Sites

Layover Facility	REC Description	RTN(s)	Relative Impact
ISP	Documented Releases on or Encompassing the Layover Site	4-13482, 4-13856, and 4-15907	High
	Existence of Large Quantity of Hazardous Chemicals and Existence of Risk Management Plan at Southwestern Adjoining Property (ISP Chemicals, 238 South Main Street)	Not applicable	High
	Historic Use of Adjoining Properties	Not applicable	High
	Documented Releases at Nearby Property (Former Synthetic Natural Gas Plant)	4-16971	Medium
	Documented Releases at Southwestern Adjoining Property (238 South Main Street)	4-10219, 4-10965, 4-11891, 4-13804, 4-13805, 4-18988, 4-14027, 4-14485, 4-15568, 4-15700, 4-16479, 4-16533, 4-16702, 4-16703, 4-19297, and 4-19557	Medium
Church Street	Current Existence of 3,000 Gallon Diesel Aboveground Storage tank with Stained Soil on Site	Not applicable	High
	Presence of Pooled Oil and Stained Soil in Unpaved Area Near Site	Not applicable	Medium
	Historic and Current Use of Area Near Site for Vehicle Repair and Maintenance	Not applicable	Medium
	Existence of Underground Storage Tanks Near Site	Not applicable	Low
Wamsutta	Historic Use of Site as Freight Yard and Placement of Permanent Engineered Barrier Above Impacted Soil at Site	4-118	Medium
	Documented Release at Acushnet Estuary (New Bedford Superfund Site)	4-122	Medium
	Documented Release at Adjoining Property (618 Acushnet Avenue)	4-14791	Low
	Documented Release and Implementation of Activity and Use Limitation at Nearby Property (1 Wamsutta Street)	4-11715	Low
	Documented Release at Nearby Property (New Bedford Main Interceptor)	4-127	Low
Weaver's Cove West	Existence of USTs and ASTs at Site	Not applicable	High
	Previous Use of Site as Petroleum Products Distribution Facility and Documented Release	4-749	High
	Possible Presence of Elevated Concentrations of Metals in Site Soil	Not applicable	Low
Weaver's Cove East	Previous Use of Site as Oil Storage Facility and Documented Petroleum Release on Site	4-749	High
	Previous Use of Adjoining Property as Petroleum Product Distribution Facility and Documented Release (Shell Oil Company, 1 New Street)	4-749	High
	Previous Use of Building on Parcel T-1-38 as Commercial Garage	Not applicable	Medium
	Existence of Underground Storage Tanks (USTs) on Parcel T-1-38	Not applicable	Medium
	Possible Presence of Elevated Concentrations of Metals in Site Soil	Not applicable	Low

4.12.3.8 SUMMARY OF IMPACTS BY ALTERNATIVES

Each of the alternatives under consideration would require acquisition of properties with RECs that would require further investigation. In each case, remediation or soil/groundwater management during construction could be required. Table 4.12-8 summarizes the number of RECs and the impact that were identified for each alternative.

Table 4.12-8: Summary of RECs by Alternative

Alternative	Total Number of Stations/ Bypasses	Total Number of RECs	Number of Low Impact RECs	Number of Medium Impact RECs	Number of High Impact RECs
Attleboro Alternatives	8/1	19	4	8	7
Stoughton Alternatives	10/0	20	5	9	6
Whittenton Alternatives	10/0	24	8	10	6
Rapid Bus Alternative	6/0	15	5	6	4

The Rapid Bus Alternative has six stations and the least number of RECs, with only 15 identified, while the Whittenton Alternatives, with 10 stations, have the greatest number of RECs were identified (24 total). Downtown Taunton Station and Fall River Depot Station have the majority of the RECs for that alternative, with five each. Taunton Station and Fall River Depot Station along the Stoughton Alternatives, have the majority of the RECs for that alternative, with five each.

Since the Attleboro, Stoughton, and Whittenton Alternatives each have at least six high impact RECs that were identified, these alternatives also have the most potential to encounter oil or groundwater contamination. Downtown Taunton on the Attleboro Alternative, Taunton Station on the Stoughton Alternatives, and Downtown Taunton on the Whittenton Alternatives each have at least two high impact RECs that were identified.

Although sites containing RECs could increase construction costs, there would be an environmental benefit associated with remediating contaminated sites, particularly the station sites with known soil and groundwater contamination such as the Downtown Taunton station site and the Taunton station site. The alternatives that would have the greatest environmental benefits are the alternatives with the most RECs since these properties are the most likely to have contaminated environmental media that would be cleaned up for the proposed South Coast Rail project. The Rapid Bus Alternative would have the least environmental benefits. The Stoughton Alternatives and the Whittenton Alternatives would have the greatest environmental benefits.

Each of the layover sites under consideration would require acquisition of properties with RECs that would require further investigation. In each case, remediation or soil/groundwater management during construction could be required. Table 4.12-9 summarizes the number of RECs and the impact that were identified for each layover.

Table 4.12-9: Summary of RECs by Layover Site

Layover	Total Number of RECs	Number of Low Impact RECs	Number of Medium Impact RECs	Number of High Impact RECs
Church Street	4	1	2	1
ISP	5	0	2	3
Wamsutta	5	3	2	0
Weaver's Cove West	3	1	0	2
Weaver's Cove East	5	1	2	2

As stated previously, the No-Build Alternative would not encounter any RECs, but would have no environmental benefits since it would not require any cleanup of properties that contain OHM.

4.12.4 MANAGEMENT OF CONTAMINATED MEDIA AND REGULATORY COMPLIANCE

For contaminated property owned by MassDOT, response actions would be required pursuant to the milestones outlined in the MCP. Notification to the DEP would be required if a reporting condition is identified as per the MCP or if OHM is detected in soil and/or ground water above the applicable standards, referred to as the Reportable Concentrations. An LSP would then most likely need to be retained to verify that notification is required, to further assess and manage the site, direct response actions, and specify procedures for work performed in the contaminated areas, such as soil excavation, in accordance with the MCP and, if need be, to render appropriate Opinions. The LSP would also determine if risk reduction measures are required.

To extend MCP deadlines for response action and report submittals so that the response actions can be coordinated with the construction of the stations, layovers, and expansion of the rail lines, the application for a Special Designation Permit (as per 310 CMR 40.0060 of the MCP) may be warranted.

At many sites containing impacted soil, it is often not possible to reach a regulatory endpoint by using soil excavation and off-site disposal as the only type of remediation. It is advisable to explore other options such as the re-use of soil in order to minimize the quantity of soil to be excavated and disposed off-site. For low levels of impacted soil where a risk assessment shows an unacceptable risk for current and future unrestricted use, a deed restriction consisting of an AUL may be implemented after construction is completed to meet a regulatory endpoint. As per 310 CMR 40.1012(3) (c) of the MCP, AULs are not required within railroad rights-of-way.

Soil impacted with OHM above the Reportable Concentrations that is generated during the implementation of the South Coast Rail project would be managed appropriately in accordance with the MBTA Design Construction Standard Specifications, Section 02282, entitled "Handling, Transportation and Disposal of Excavated Material." Preliminary assessment activities may assist in identifying the type and quantity of OHM impacted media which would require management under these protocols and help select the optimal disposal methods and/or destination prior to generation. A summary of the MBTA Specification is provided in the following sections.

4.12.4.1 MANAGEMENT OF IMPACTED SOIL

Since contaminated media located on proposed stations, bypasses, and rail right-of-way may be present from historic releases or urban fill which were not reported to the DEP, a pre-characterization of soils prior to excavation, as recommended by DEP, would be performed. The pre-characterization would consist of a limited subsurface investigation whereby soil samples would be collected, screened, and submitted for laboratory analysis in order to define the nature and extent of contamination in areas where soil disturbance would occur. Based on the pre-characterization described above, a Soil Management Plan would be prepared for the project that is consistent with MBTA specifications.

A Soil Management Plan would be implemented as a waste management tool during soil excavation and removal activities that would occur during construction to ensure soil is property characterized, re-used and/or exported. The primary purpose of the Soil Management Plan is to expedite construction and avoid unexpected costs by minimizing costly off-site disposal and maximizing the re-use of soil within the boundaries of the project.

In order to minimize the need to stockpile and manage the excavated soil, which often can be problematic due to dust, runoff, regulatory time limits on stockpiles, the need for large areas, and impacts to other area, the Soil Management Plan would require the identification of the soil that would be disposed of off-site prior to being excavated, as well as the names of the receiving facilities that would be accepting the soil. It would categorize the soil based on its regulatory status from the specific areas to be excavated. Based on the subsurface investigation analytical results, the soil would fall into four groups, consisting of:

- non-regulated clean;
- soil subject to the anti-degradation policy;
- MCP regulated; and
- RCRA Hazardous Waste.

Re-use and disposal options for each category would then be designated under the Soil Management Plan during construction activities, and soil receiving facilities or destinations would be pre-selected on either a daily or weekly basis. The soil requiring excavation would be loaded directly into trucks at the site of excavation requiring soil to be removed only once.

Based on the anti-degradation policy and a pre-risk screening which would be performed to determine the risk associated with the current and foreseeable use of the property, the re-use of soil may be possible within the project that is above the MCP standards as long as regulatory endpoints could be met.

Should OHM impacted soil be generated during project-related excavation that requires export or on-site re-use, this material would also need to be properly characterized and managed in accordance with applicable regulations. Proper management would ensure appropriate re-use on the project site to prevent exposure to contaminants or export to appropriate destinations. Characterization may entail the collection of soil samples and analysis for specific parameters specified in the DEP policies for re-use and disposal of contaminated soil. Pre-characterization should eliminate the need to stockpile excess soil onsite pending characterization and if export is needed, generation of the required paperwork. A minimum of ten business days are required for laboratory analysis and approval at a disposal facility or landfill. The stockpiling of soil before characterization on such a large project may lead to delays or

outright stoppages of work resulting from management and segregation difficulties and could result in a large volume of soil for which there may not be space to accommodate.

Although re-use should be the preferred option, when characterization of soil after excavation is absolutely necessary, the soil should be segregated into approximately 500-cubic yard sections and placed on and covered with polyethylene sheeting of 10 mil or greater thickness. Covers would be placed on each stockpile at the end of each day's operations, and would be secured in place to prevent runoff and erosion. A composite soil sample would be collected from each of the 500 cubic yard segments. The soil samples would be submitted, at a minimum, for the following chemical analyses: RCRA 8 metals using Method 6010/7471, VOCs via EPA Method 8260, PCBs via EPA Method 8081, total petroleum hydrocarbons (TPH) via modified EPA Method 8100, SVOCs via EPA Method 8270, reactive cyanide and sulfide using EPA Method SW-846, ignitability using EPA Method 1010, corrosivity using EPA Method 9045, and conductivity using EPA Method 120.1. The specific analysis to be performed will depend upon the requirements of the receiving facility that was selected to accept the soil. Any samples found to contain contaminant concentrations equal to or greater than 20 times their hazardous waste toxicity threshold (*i.e*., the 20-times rule) would be analyzed for toxicity characteristic leaching procedure (TCLP).

It is assumed that the analysis of pesticides and herbicides would not be required; however, this assumption may be modified based on the requirements of the disposal facility and history of the generator site. Should alternate soil disposal options be pursued (*i.e*., asphalt batching), analytical requirements may vary depending on the analytical requirements for that facility. Based on the results of the characterization, a Bill of Lading would be prepared to facilitate the export of the soil that would need to be disposed of off-site to the selected disposal facility to ensure that the facility is appropriate to handle the impacted soil. The Bill of Lading would need to be prepared and/or certified by an LSP.

4.12.4.2 MANAGEMENT OF IMPACTED GROUND WATER

If OHM impacted ground water is encountered during the implementation of any of the alternatives under consideration, it may also need to be managed in accordance with applicable regulations. If the volume would be limited and subsequent offsite disposal is deemed to be the most cost effective disposal option, the ground water can be temporarily stored in a 21,000-gallon fractionation tank. It would then be characterized, at a minimum, via laboratory analysis for the following parameters: VOCs via EPA Method 8260, TPH via EPA Method 8100 and SVOCS by EPA Method 8720. For managing larger volumes of ground water, it may be more cost effective to obtain an EPA Construction General Permit or Remediation General Permit for discharge to surface waters/storm drains or a permit from the local sewer authority, if allowed, for discharge to sanitary sewers.

Contaminated ground water may also need to be dewatered. However, since dewatering is not cost effective, it is not recommended and therefore should be thoroughly assessed before any decision is made as to remediation. When impacted ground water has originated from an off-site property, the filing of a Downgradient Property Status may be prudent to suspend response actions and compliance fees. However, response actions may still be necessary in order to achieve a regulatory endpoint beyond those required for project construction.

Large quantities of impacted ground water encountered by construction activities would also be managed with proper permitting. For smaller quantities, ground water would be pumped into a containerized 20,000-gallon fractionation tank and removed via a manifest for off-site disposal at an approved facility.

4.12.4.3 MANAGEMENT OF HAZARDOUS DEMOLITION DEBRIS AND USED RAILROAD TIES

Asbestos-containing materials, including roof flashing, tiles, and other materials may be present in the building materials for the buildings that would be undergoing demolition, based on their age. In addition, lead-based paint, mercury, and PCBs may also be present in the building materials and/or fixtures. It is recommended that prior to demolition licensed asbestos and hazardous materials contractor sample the building material, including roof flashing, tiles, and other materials, as well as the potential lead-based paint, mercury, and PCBs. If these hazardous materials are found to be present in the structures, then they must be removed by a licensed contractor in accordance with state regulations.

Re-use of building materials, such as asphalt, brick, and concrete, should be considered, as their re-use could reduce disposal costs and may not require a permit. The re-use would depend on whether they are coated with a contaminant or considered "contaminated" based on the concentrations of contaminants present on the material.

Used wooden railroad ties are typically coated with chemical preservatives including creosote which contains SVOCs and would require special handling procedures. The discarded railroad ties must be managed and disposed of in accordance with applicable regulations.

4.12.4.4 HEALTH AND SAFETY REQUIREMENTS

In addition, health and safety procedures must be performed under the guidelines of the Occupational Safety and Health Administration (OSHA). All construction workers involved in performing the response actions must be appropriately health and safety trained in accordance with the applicable provisions of OSHA, which mandates specific procedures that must be followed to be protective from exposure to contaminated media.

4.12.4.5 CLOSURE REPORTS

At the completion of response actions at properties acquired by the applicant for which an RTN was obtained from the DEP, but a closure report consisting of a RAO has not yet been submitted, a condition of No Significant Risk must exist as defined by the MCP. The preferred outcome is a Class A-1 RAO in which contamination is reduced to background levels. In some situations, the confirmatory sampling results may not support a Class A-1 RAO, and in these situations, alternatives would be evaluated to a Class A-1 RAO. DEP would need to be consulted regarding the planning and implementation of demolition and management of contaminated soil to ensure consistency with the applicable regulations.

Additional response actions beyond those necessary for project construction may be necessary at some of these properties in order to achieve regulatory closure. Such foreseeable response actions could occur pursuant to the MCP as permitted under provisions such as those of a RAM plan, Special Designation Permit, or others, and applicable MCP policies pertaining to construction and waste management.

4.12.5 TEMPORARY CONSTRUCTION-PERIOD IMPACTS

Mitigation measures during construction may include special handling, dust control, and management and disposal of contaminated soil and ground water in order to prevent construction delays and to

provide adequate protection to workers and any nearby sensitive receptors. All response actions must ensure that any nearby or adjacent receptors are adequately protected.

4.12.5.1 RECOMMENDATIONS

Based on the conclusions of the Phase I ESAs that were performed for the rail alignments, proposed stations, and layovers, the following section describes the recommendations and mitigation measures to be performed prior to and during construction of these stations, track segments, and/or layovers. Recommendations are also discussed below for the Stoughton right-of-way based on an environmental database review that was performed in 2001, since track work and retaining wall construction would be performed along the right-of-way. The recommendations for Phase II ESAs would be to determine existing environmental conditions for property acquisitions and would not consist of soil pre-characterization as part of the Soil Management Plan described above.

Rail Alignments

The track segments where land acquisition or substantial new construction is required include the Attleboro Bypass for the Attleboro Alternatives and the Whittenton Branch for the Whittenton Alternatives, as well as the Stoughton Branch Right-of-Way for the Stoughton Alternatives. The recommendations for these track segments are described in the following section.

Attleboro Bypass (Attleboro Alternatives)

Because only one low-level REC was identified for the Attleboro Bypass, no Phase II is recommended; however, soils excavated in the area of the Shpack Landfill would be screened as part of construction for potential COCs that may be encountered. In the event that contamination is identified, response actions would need to be implemented in accordance with the MCP.

Stoughton Branch Right-of-Way (Stoughton Alternatives)

Potential contamination along the Stoughton Branch that may require further investigation include the following.

- Cyn Environmental Services located in Stoughton is a state hazardous waste spill site, UST location, and RCRA corrective action site. The site is currently adequately regulated outside of the MCP. Potential soil and ground water contamination in the right-of-way prior would be assessed by the applicant to construction.
- North Easton Historical Industrial Area is a state hazardous spill site where several USTs have been removed. Unknown material was used for undergrade bridge fill at Main and Bridge Streets. Soil contamination in the right-of-way would be assessed by the applicant prior to construction.
- Petroleum contamination was documented at DeAngelis Iron Works in Easton. The applicant would assess potential soil contamination in the right-of-way prior to construction.
- General Cable Corporation in Taunton is a state hazardous waste spill site and contains a UST. Soil and ground water contamination is documented. The status and remediation of the UST release and assess oil and ground water contamination in the right-of-way would be researched by the applicant prior to construction.

The Cohen property in Taunton is a designated Superfund site. Potential soil contamination in the right-of-way would be assessed prior to construction.

Whittenton Branch (Whittenton Alternatives)

A Phase II ESA is recommended for Whittenton Branch in the areas of identified medium impact RECs in which limited soil and ground water sampling would be performed. Response actions would be implemented as necessary to address any soil or ground water impacts that may be identified.

Stations

Recommendations for the eleven stations, presented in alphabetical order, are described below.

Barrowsville Station Site

A Phase II ESA is recommended for Barrowsville in which limited soil and ground water sampling would be performed. Response actions would be implemented as necessary to address any soil or ground water impacts that may be identified.

Battleship Cove Station Site

A Phase II ESA was performed in 2002 for Battleship Cove and identified impacted soil above the regulatory criteria. However, since no property acquisition an updated Phase II ESA is not required.

Downtown Taunton Station Site

Although previous subsurface investigations have been performed at the Downtown Taunton property, a Brownfield site that has confirmed contaminated soil and ground water, a Phase II ESA is recommended in which a thorough document review of previously prepared environmental reports would be performed, as well as a subsurface investigation to obtain updated soil and ground water data. Response actions would be implemented as necessary to address the soil and ground water impacts that are identified.

Easton Village Station Site

Because only two low impact RECs were identified on adjoining properties, a Phase II ESA is not recommended. Soils excavated as part of construction should be screened for potential contaminants that may be encountered. In the event that contamination is identified, response actions would be implemented in accordance with the MCP.

Fall River Depot Station Site

A Phase II ESA was performed in 2002 for the northern portion of the Fall River Depot and identified impacted soil above the regulatory criteria and the potential presence of USTs. An updated Phase II ESA is recommended for the Fall River Depot to obtain updated data from the northern portion of the property as well as to obtain soil and ground water from the southern portion that was not previously assessed. Response actions may be implemented as necessary to address the impacts that were identified. An update of the 2001 comprehensive survey of the existing buildings will be performed by the applicant for the presence of asbestos-containing materials, lead-based paint, and other regulated building materials.

Freetown Station Site

No RECs were identified at this location; however, soils excavated would be screened as part of construction for potential contaminants that may be encountered. In the event that contamination is identified, response actions would be implemented in accordance with the MCP.

King's Highway Station Site

Although several RECs were identified at this location, since no property acquisition or station construction is planned, a Phase II ESA is not recommended.

North Easton Station Site

No RECs were identified at this location; however, soils excavated as part of construction would be screened for potential contaminants that may be encountered. In the event that contamination is identified, response actions would be implemented in accordance with the MCP.

Raynham Place Station Site

A Phase II ESA is recommended for Raynham Place in which limited soil and ground water sampling would be performed. Response actions would be implemented as necessary to address any soil or ground water impacts that may be identified. A comprehensive survey would be performed of the existing structures for the presence of asbestos-containing materials, lead-based paint, and other regulated building materials.

Taunton Depot Station Site

No RECs were identified at this location; however, soils excavated as part of construction would be screened for potential contaminants that may be encountered. In the event that contamination is identified, response actions would be implemented in accordance with the MCP.

Taunton Station Site

A Phase II ESA is recommended for Taunton Station, a Brownfield site that has confirmed soil and ground water impacts. The Phase II ESA would consist of a thorough document review of previously prepared environmental reports, as well as a comprehensive surficial and subsurface investigation which would obtain updated soil, ground water, and perhaps surface water and sediment impacts. Response actions would be implemented as necessary to address environmental media that may be identified. A comprehensive survey would be conducted of the remaining flooring and existing structure for the presence of asbestos-containing materials, lead-based paint, and other regulated building materials.

Whale's Tooth Station Site

An engineered barrier was constructed at Whale's Tooth and contaminated soil was left in place beneath the barrier. There are potential impacts related to exposure during the future excavation or construction at this site. Since known contamination is present at the site but buried beneath an engineered barrier, no soil disturbance or subsurface investigation, including a Phase II ESA, is recommended.

Layover Facility Sites

Church Street Layover Facility Site

A Phase II ESA is recommended for the Church Street Layover site, since potential impacts are likely. The comprehensive surficial and subsurface investigation would address soil and ground water impacts. Response actions would be implemented as necessary to address environmental media that may be identified.

ISP Layover Facility Site

A Phase II ESA is recommended for the ISP Layover site, since potentially substantial impacts are likely. The comprehensive surficial and subsurface investigation would address soil and ground water impacts, as well as the potential presence of buried drums. Response actions would be implemented as necessary to address environmental media that may be identified.

Wamsutta Layover Facility Site

An engineered barrier was constructed at the Wamsutta Layover site and contaminated soil was left in place beneath the barrier. There are potential impacts related to exposure during the future excavation or construction at this site if soil disturbance below the barrier were to occur. Since known contamination is present at the site but buried beneath an engineered barrier, no soil disturbance or subsurface investigation is recommended, including a Phase II ESA.

Weaver's Cove East Layover Facility Site

A Phase II ESA is recommended for the Weaver's Cove East Layover site, since potentially substantial impacts are likely. The comprehensive surficial and subsurface investigation would address soil and ground water impacts. Response actions would be implemented as necessary to address environmental media that may be identified.

Weaver's Cove West Layover Facility Site

A Phase II ESA is recommended for the Weaver's Cove West Layover site that has confirmed soil and ground water impacts. The Phase II ESA would consist of a thorough document review of previously prepared environmental reports, as well as a comprehensive surficial and subsurface investigation which would obtain updated soil and ground water impacts. Response actions would be implemented as necessary to address environmental media that may be identified as susceptible to OHM impact. In addition, a comprehensive survey of the remaining structures would be performed, including aboveground tanks, for the presence of asbestos-containing materials, lead-based paint, and other regulated materials.