

APPENDIX B

Record of Decision Mitigation

ATTACHMENT A

MITIGATION PLAN

This attachment to the Record of Decision for the Miami North Corridor Metrorail Extension (the Project) lists the efforts Miami-Dade Transit (MDT) will undertake to mitigate the environmental impacts resulting from the implementation of the Project. It is a complete listing of those efforts and Chapter 4 of the Miami North Corridor Final Environmental Impact Statement Report provides additional background material on the impacts. Each resource area analyzed in the FEIS is included as a section below (with the same section number) in a common format, consisting of:

- a brief description of the impact of the Project and a brief explanation of issues related to the impact
- a definition of the mitigation effort MDT will undertake if the Project is implemented

1.A SECTION 1: SOCIOECONOMICS—RELOCATIONS

Impact—Residential, Business and Institutional Relocations: The Project would require acquiring 116 parcels resulting in the relocation of 21 residences, 91 businesses and 3 institutions. MDT will carry out a right-of-way acquisition and relocation program in accordance with the Uniform Relocation Assistance and Real property Acquisition Policy Act of 1970.

Mitigation:

SE 1: MDT will, during the real estate acquisition phase, implement the Relocation Assistance Program and the Last Resort Housing Program in full compliance with state and federal regulations. For the 20 efficiency apartment residents, (residing at the complex located at 10534 NW 27th Avenue), the last Resort Housing Program will include, if required, MDT providing supplemental rent payments and arranging for short-term leases for a period of up to three years.

Impact—Business relocations: There would be numerous businesses affected by the right of way acquisition program, many of which would involve frontage on NW 27th Avenue, but not affect the structure. The loss of frontage, direct access to Northwest 27th Avenue and (in most cases) paved land currently used for parking or business purposes would force the business to relocate.

Mitigation:

SE 2: MDT will, during the real estate acquisition phase, attempt, where practical, to allow businesses to remain in operation by allowing the use of MDT acquired land under the guideway for parking, providing adequate ingress and egress, and providing for adequate signage.

Impact—Institutional relocations: There would be three institutional relocations: a storefront church, the Armory and the North Central Branch Library.

Mitigation: See Section 9.4 for mitigation relative to the North Central Library.

SE 3: MDT, during the real estate acquisition phase, will arrange to relocate the storefront church (9920 NW 27th Avenue) in the same manner as a business, insuring that the relocation is carried out to allow the church to remain in continual operation.

SE 4: MDT, during the real estate acquisition phase, will negotiate a mutually acceptable agreement between the Department of Defense and MDT for the relocation of the Armory.

1.B SECTION 1: SOCIOECONOMIC—DEVELOPMENT IMPACTS

Impact—Additional residential and business relocations: The Project could induce new development that could result in a secondary impact of increased property values and rents in the corridor, resulting in some current residents and business no longer being able to afford to remain in their current locations.

Mitigation:

SE 5: MDT will include, in joint development agreements, a requirement that current businesses in the corridor are to receive preferential consideration for commercial space and advantageous rental rates for a period of time to be determined.

SE 6: MDT will request the Board of County Commissioners to adopt a property tax rebate program for businesses that are forced to relocate due to escalating rents if they wish to remain in the corridor.

SE 7: MDT will request the Board of County Commissioners to establish a program to offer low interest loans to businesses and residents that are forced to relocate due to escalating rents for property acquisition or improvements if they wish to remain in the corridor.

1.C SECTION 1: SOCIOECONOMIC—ENVIRONMENTAL JUSTICE

Impact—Relocation, both due to right of way acquisition and, potentially, the secondary impact of induced development: The relocation impacts listed in Sections 9.1.A and 9.1.B disproportionately affect minorities.

Mitigation: MDT would implement a number of mitigation efforts, including those listed in Sections 9.1.A and 9.1.B, which would also mitigate the disproportionate impact of relocations on the minority community. Several other mitigation efforts that MDT would implement are:

SE 8: MDT will implement joint development, redevelopment, and transit oriented development programs to create business opportunities and employment opportunities in the corridor.

SE 9: MDT will implement joint development agreements that include a requirement that current minority owned businesses in the corridor are to receive preferential consideration for commercial space and advantageous rental rates for a period to be determined.

SE 10: MDT will request the Board of County Commissioners to adopt a property tax rebate program for minority owned businesses that are forced to relocate due to escalating rents if they wish to remain in the corridor.

SE 11: MDT will request the Board of County Commissioners to establish a program to offer low interest loans to minority owned businesses and minority residents that are forced to relocate due to escalating rents for property acquisition or improvements if they wish to remain in the corridor.

Impact—Noise: The noise impacts of the Project disproportionately impact the minority community.

Mitigation: The noise mitigation efforts are described in Section 9.18 below.

Impact—Visual: The visual impacts of the Project disproportionately impact the minority community. Additional mitigation is discussed in Section 9.5 below.

Mitigation:

SE 12: MDT will involve the community during the design phase of the stations and park and ride facilities, as well as all subsequent phases of the project, including station area planning.

2 SECTION 2: LAND USE

Impact—The Project would provide significantly better development and redevelopment potential for the North Corridor than the TSM and No-Build Alternatives. (See Section 9.23 for cumulative and secondary impacts.)

Mitigation: None

3 SECTION 3: STATION AREAS

Impact—The Project would, in concert with county development policy and zoning, create significant opportunities for joint development and redevelopment at the seven proposed stations. This development would increase employment and other opportunities for residents of the corridor. The TSM Alternative is not likely to create similar development. The No-Build Alternative would not create any demand for development or redevelopment. (See Section 9.23 for cumulative and secondary impacts.)

Mitigation: None

4 SECTION 4: COMMUNITY SERVICES

Impact—Closing the North Central Branch Library: The guideway alignment would require the acquisition of the structure housing the North Central Branch Library.

Mitigation:

CM 1: MDT will relocate the North Central Branch Library in a suitable facility near its current location.

Impact—Community interaction could be interrupted by station, park and ride, and guideway facilities: The stations and adjacent park and ride facilities could become barriers to community interaction.

Mitigation:

CM 2: MDT will:

- Design the stations, including the park and ride facilities, to provide easy accessibility to the surrounding communities and to enhance community interconnectivity
- Design the stations and park and ride lots with berms and landscaping to enhance their aesthetic appeal, but not at the expense of community interconnectivity
- Design the station elements to be aesthetically integrated with the character of the surrounding community
- Continue the dialog with the community initiated during the Station Area Planning process developed as part of this project
- Design the guideway right of way to accommodate its maintenance needs while allowing for neighborhood interconnectivity in the east-west direction

Impact—Extensive relocation: The extensive relocation requirements could alter the characteristics of the community.

Mitigation:

CM 3: MDT will encourage displaced businesses to relocate within the corridor and offer displaced businesses the opportunity to relocate to new joint developments in the corridor (see Section 9.1).

Impact—Construction-related impacts: During construction, there could be temporary lane and street closings along NW 27th Avenue, as well as safety and security issues at construction yards and sites.

Mitigation:

CM 4: MDT will incorporate construction impact controls into contract specifications and construction management plans that:

- Minimize lane and street closing durations and detour travel times
- Require coordination and notification to providers of emergency services prior to implementing any roadway closures
- Require notification to the community for street closings through advance notification signage
- Require continuous pedestrian and vehicular access to businesses, libraries, schools, residences and other institutions at all times during construction
- Require effective security and safety measures at construction sites and yards, including fencing, protective barriers, and signage to protect roadways, walkways and adjacent properties, as well as allow them to remain fully operational

5 SECTION 5: VISUAL AND AESTHETICS

Impact—Visual impact of stations and park and ride lots: The stations and parking lots would be a visual impact in the North Corridor.

Mitigation:

VA 1: MDT will design the park and ride lots to be aesthetically integrated with the surrounding areas and incorporate landscaping to enhance their appearance.

VA 2: MDT will design the stations to be more open and “tropical-like” than the stations on the existing Metrorail line.

VA 3: MDT will continue the public involvement program to insure the community interaction that has been underway since the initiation of this project with a specific focus on station and park and ride lot design.

Impact—Visual impact of the guideway: The elevated guideway would have a visual impact in the North Corridor.

Mitigation:

VA 4: MDT will incorporate landscaping and vegetation under the guideway, in the design and construction phase, to create a buffer from the neighboring development and preserve existing vegetation where possible.

VA 5: MDT will design the guideway to have graceful, clean and simple lines, incorporate the guideway, noise wall and columns into a single visual element and to have the column spacing average 130 feet as compared to the existing Metrorail spacing of 90 feet.

VA 6: MDT will incorporate the Art in Public Places Program into the guideway by creating a linear mosaic, mural, or similar treatment along the noise barriers.

Impact—Construction-related impacts: The construction sites could have a temporary visual impact on the surrounding community.

Mitigation:

VA 7: MDT will incorporate construction impact controls into contract specifications and construction management plans that include requirements for materials to be stored in an orderly fashion, not allowing debris to be stored on construction sites, maintaining temporary facilities, barriers and fencing in good condition, and locating temporary facilities out of public view, where possible.

6 SECTION 6: HISTORIC RESOURCES

Impact—Construction-related impacts: The construction of the guideway could have temporary air quality, noise, vibration and visual impacts on the Master Field structures.

Mitigation:

HS 1: MDT will incorporate construction impact controls into contract specifications and construction management plans that require using best management practices to minimize the temporary air quality, noise, and visual impacts, and require monitoring of the historic structures for vibration impacts. If vibration impacts occur at levels that could affect the structures, the specifications will require using alternate construction methods that reduce any vibration impacts to levels that would not cause damage to the structures.

7 SECTION 7: ARCHAEOLOGICAL RESOURCES

Impact—Construction-related impacts: While no archaeological resources are known in the project area, construction activities could unearth resources that are not known to exist at the current time.

Mitigation:

AR 1: MDT will incorporate construction impact controls into contract specifications and construction management plans that require, in the event any archaeological remains are discovered, all work in the area would cease until a qualified archaeologist can evaluate the remains and an appropriate course of action is determined and approved.

8 SECTION 8: SECTION 4(f)

Impact—Pedestrian and bicycle facilities: The guideway, stations, and park and ride lots could impact pedestrian and bicycle facilities and bicycle use.

Mitigation:

4f 1: MDT will design the project, to the degree practical, to maintain existing pedestrian and bicycle facilities, incorporate any planned facilities, provide for pedestrian and bicycle access to the stations, and allow for pedestrian and bicycle transportation near all elements of the project.

9 SECTION 9: GEOLOGY AND SOILS

Impact—Methane conditions: The underground methane leakage from the two nearby closed landfills, which, although highly unlikely, could result in explosive conditions.

Mitigation:

GS 1: MDT will, during final design, conduct subsurface investigations to determine whether methane conditions exist and, if so, MDT will coordinate with DERM to develop the appropriate designs and construction methods in the project implementation plans to minimize the potential environmental impacts.

10 SECTION 10: THREATENED AND ENDANGERED SPECIES

Impact—Potential manatee presence in waterways: The alignment of the Project crosses the canal system in several locations and manatees occasionally enter that system.

Mitigation:

TE 1: MDT will protect manatees that may be present during construction over or near the canal system by implementing the manatee protection requirements of the US Fish and Wildlife Service, Florida Department of Environmental Protection and Miami-Dade Department of Environmental Resources Management, including training of construction management and contractor staff on the requirements as well as the need for monitoring the canals for the presence of manatees.

Impact—Potential rim rock crowned snake in vacant lots: One specimen of this rare snake has been found in a vacant lot in Miami.

Mitigation:

TE 2: MDT will require the construction management team to have a qualified biologist inspect all vacant lots affected by the construction prior to construction to determine if the rim rock crowned snake is present. If the species were found, an appropriate action would be developed in coordination with local, state and federal agencies.

Impact—Other Threatened and Endangered Species: There is a very small potential that other threatened or endangered species, including migratory birds, could be present in the corridor.

Mitigation:

TE 3: MDT will require the construction management team to have a qualified biologist inspect the areas affected by the construction prior to construction to determine if any of the species listed below are present. If any of the following species are found, an appropriate action will be developed in coordination with local, state and federal agencies:

- Florida bonneted bat
- American alligator and American crocodile
- Eastern indigo snake
- Sandhill crane, snail kite, bald eagle, southeastern kestrel, and wood stork
- Migratory birds, including Bachman's warbler and Kirtland's warbler

11 SECTION 11: VEGETATION

Impact—Tree Removal: The Miami-Dade Department of Environmental Resources Management (DERM) has regulations requiring a tree removal permit that prescribes an approved landscape plan for tree replacement.

Mitigation:

VG 1: MDT will, in the design phase, develop, in compliance with DERM requirements, a tree inventory and a removal and landscape plan for submission to DERM. MDT will not remove any trees prior to a permit being issued by DERM, and will implement the tree removal and landscape plan approved by DERM.

VG 2: MDT will incorporate construction impact controls into the contract specifications and construction management plans that protect vegetation and trees not required to be removed as part of the construction program.

12 SECTION 12: AQUATIC HABITATS

Impact—Potential manatee presence in waterways: Protection of manatees is covered in Section 9.10.

Mitigation: See Section 9.10

13 SECTION 13: FARMLANDS

Impact—No impact

Mitigation: None

14 SECTION 14: WATER RESOURCES

Impact—Stormwater runoff: The construction of the project would create impervious areas, primarily the park and ride lots.

Mitigation:

WT 1: MDT will design the project to incorporate stormwater retainage facilities, such as detention ponds and French drains, in accordance with the requirements of the Florida Department of Environmental Protection, South Florida Water Management District and Miami-Dade Department of Environmental Resources Management (DERM). The stormwater retainage plans will be submitted to those agencies for approval. This project proposes to construct an elevated system that will not result in a significant increase in impervious surfaces, however, all new impervious areas as well as stormwater runoff from the guideway, stations, and parking lots will be treated in proposed exfiltration trenches as the primary point of deposition for all runoff. Exfiltration trenches will be designed in accordance with Miami-Dade DERM's design criteria requirements. The design will incorporate features to minimize disease vectors such as mosquito problems associated with exfiltration trenches.

Specifically, the station drainage design will include the collection, transmission, and discharge of stormwater runoff associated with platforms, guideway within stations, canopies, facilities, walkways, driveways, and parking lots. Runoff collected from the station, guideway, and canopies will be hard-piped to the French drain network in the adjoining parking lot. Walkways will be sloped to convey runoff into planted areas, adjacent roadways, or parking areas. The parking areas will include a network of catch basins and French drains that will adequately drain the parking area as the adjacent station facility. Station parking drainage would be designed by splitting the parking area and station into sub-basins and using DERM program criteria to calculate the required French drain for each sub-basin.

Impact—Stormwater and groundwater pollution: Stormwater runoff has the potential to carry petroleum hydrocarbons into surface water.

Mitigation:

WT 2: MDT would design the project to incorporate stormwater runoff treatment facilities in accordance with the requirements of the Florida Department of Environmental Protection, South Florida Water Management District and Miami-Dade Department of Environmental Resources Management (DERM). Drainage inlets within proposed stations shall be equipped with pollution control baffles to treat stormwater prior to entering surface water and groundwater. The stormwater runoff treatment plans would be submitted to those agencies for approval. A stormwater pollution prevention plan for the approval of FDEP, SFWMD and DERM will be prepared to mitigate stormwater and groundwater pollution.

WT 3: MDT will operate and maintain the stormwater runoff treatment facilities for the life of the project.

Impact—Construction-related impacts: Activities could cause erosion and sediment transfer to surface water, and cause polluted runoff to enter surface waters and groundwater.

Mitigation:

WT 4: MDT will incorporate construction impact controls into contract specifications and construction management plans that require the following actions in accordance with FDOT's Standard Specifications and through the use of BMPs:

- Use of sedimentation barriers to prevent construction site soil erosion and sediment from reaching surface water
- Use of turbidity barriers where construction occurs adjacent to or in water
- Channelization of stormwater runoff into holding basins
- Preparation of a stormwater management plan and erosion control plan for the approval of FDEP, SFWMD and DERM
- Retention and protection of existing vegetation as much as possible
- Covering disturbed soil with mulch or vegetation as soon as possible
- Mechanical retardation of runoff erosion and sediment in runoff water
- Provision of storage for increased runoff caused by changed soil conditions during construction

15 SECTION 15: WETLANDS

Impact—No Impact

Mitigation: None

16 SECTION 16: TRANSPORTATION

Impact—Construction-related impacts: Construction activities could temporarily impact traffic and emergency services accessibility.

Mitigation:

TR 1: MDT will incorporate construction impact controls into contract specifications and construction management plans that require the development of a Work Zone Traffic Control (WZTC) Plan. The WZTC plan will include requirements for planning and scheduling to minimize traffic impacts, notice to the media, businesses and residents of any street closures, posting of warning notices for road hazards created by the project, and provision of alternate routes. The construction would be planned to maintain two lanes of peak hour traffic flow in both directions on NW 27th Avenue as well as Metrobus service. Any road closures or lane closures that are expected to cause temporary traffic delays would be coordinated with providers of emergency services (fire, rescue and police). The WZTC plan will be reviewed and approved by FDOT, and will be coordinated with local police.

TR 2: MDT will incorporate construction impact controls into contract specifications and construction management plans that require the development of a Health and Safety Plan (HSP). The HSP will cover all aspects of worker safety, including the requirements of the Occupational Safety and Health Act (OSHA) of 1970. The HSP will require the use of personal protective equipment, safe work practices, site management to eliminate hazardous conditions, and emergency response procedures. It will also require workers to have the appropriate qualifications for the work they are carrying out as well as training relative to the specific tasks on the project not common to general construction.

The HSP will, in coordination with the WZTC Plan incorporate signing, traffic control devices and barricades to maximize worker safety for work adjacent to traffic as well as safety practices and training for workers assigned to areas adjacent to traffic.

The general contractor will be required to have a full time safety officer on the construction site. The construction management team will be charged with the responsibility of monitoring compliance with the plan.

17 SECTION 17: AIR QUALITY

Impact—Construction-related impacts: Construction activities could cause short-term air quality impacts in the form of dust. Air quality issues related to asbestos and other contaminants are discussed in Section 9.19.

Mitigation:

AQ 1: MDT will incorporate construction impact controls into contract specifications and construction management plans that require the following actions to control dust:

- Spraying exposed areas with water or other dust suppressants. However, the use of other suppressants would be weighed against potential water pollution impacts
- Covering trucks carrying dusty materials to and from construction sites
- Washing trucks, particularly the undercarriage, before they leave construction sites
- Minimizing the use of vehicles over unpaved areas
- Cleaning dust and mud covered paved areas

18 SECTION 18: NOISE AND VIBRATION

Impact—Operational noise: Train operations would generate increased noise levels in the corridor. At several locations, the noise predicted impacts would be in the “severe” category as defined by the Federal Transit Administration (FTA).

Mitigation:

NV 1: During final design, MDT will conduct a detailed noise analysis along the entire length of the proposed guideway. The analysis will include an extensive noise monitoring survey with noise measurements collected at representative noise sensitive sites identified throughout the corridor. Noise monitoring sites will be selected based on the FTA guidelines, which define sensitive land uses and the proximity of these land uses to the final location of the guideway alignment. In addition to noise measurements at representative noise monitoring sites, additional noise readings will be collected at all existing properties where a severe impact has been identified in the FEIS. To determine existing 24 hour day-night (L_{dn}) noise level at each location, noise measurements will be collected for duration of approximately 20 minutes during peak AM, PM, mid-day, pre-midnight and after mid-night periods. Future noise levels from transit operations will be determined for a typical mid-week schedule. Where impacts are identified using methodology defined in the FTA guidelines, abatement requirements on a parcel-by-parcel basis will be identified. Where abatement is required, all or some of the mitigation measures described below will be implemented. Based on this information, MDT would design the project to include:

- Continuous welded rail trackage
- A four foot high noise wall along one or both sides of the guideway in areas necessary to eliminate or reduce noise impacts based on the FTA criteria
- Incorporation of noise absorbing material having a noise reduction coefficient of 0.70 on the interior of the noise wall capable of reducing the noise levels by two to three decibels (dBA) in areas necessary to eliminate or reduce noise impacts based on the FTA criteria

NV 2: Based on the analysis available at this time, the mitigation efforts in Mitigation NV 1 above will reduce the noise impacts at all but five receptors to the “no impact” category as defined by FTA. These locations include three single-family residences at 2727 NW 106th Street, 2701 NW 179th Street, 18700 NW 27th Avenue (Crossing at University Apartments – 1 unit), and the Turf Motel (7000 NW 27th Avenue) affecting 9 units, and the Lake Lucerne Apartments (2601 NW 207th Street) affecting approximately 16 units. At these locations, MDT will negotiate with the property owners or tenants and offer to undertake the following mitigation efforts:

- For the single-family residences, the motel and the 16 apartment units, to install replacement windows and/or wall insulation to reduce interior noise levels by several dBA
- For the three-single family residences and as a last resort, offer to purchase the property and reimburse the occupants for relocation costs, if a fair acquisition and relocation allowance can be negotiated
- For the apartment unit tenants of the impacted apartments in the Lake Lucerne Apartment complex, offer to reimburse their cost to relocate to another apartment unit, if a reasonable one-time relocation cost can be negotiated

In the event the detailed analysis completed in Mitigation NV 1 shows that any of the properties listed above are not impacted, the additional mitigation listed will not be required. If the detailed analysis in Mitigation NV 1 shows additional properties are impacted, MDT will negotiate with the property owners or tenants and offer to undertake the following mitigation efforts:

- For residential and commercial properties, install replacement windows and/or wall insulation to reduce interior noise levels by several dBA

- For owner occupied residences, and as a last resort, offer to purchase the property and reimburse the occupants for relocation costs, if a fair acquisition and relocation allowance can be negotiated
- For residential and commercial tenants, offer to reimburse their cost to relocate in or near the North Corridor, if a reasonable one-time relocation cost can be negotiated

Impact—Noise and vibration construction-related impacts: Construction of the project would cause temporary noise and vibration impacts.

Mitigation:

MDT will incorporate construction impact controls into contract specifications and construction management plans that require:

- The development and execution of a noise and vibration plan consistent with local noise regulations and FDOT's Standard Specifications and FTA's mitigation strategies for noise and vibration to include including numeric noise and vibration limits and monitoring measures based on local, state or national thresholds
- Construction of temporary noise barriers, such as temporary walls or piles of excavated material, between noisy activities and noise-sensitive receivers
- Routing truck traffic away from residential streets to the degree possible to minimized both noise and vibration
- Locating site construction equipment on the construction lot as far away from noise-sensitive sites as possible
- Operating earth moving equipment on the construction lot as far away from vibration-sensitive sites as possible
- Constructing walled enclosures around especially noisy activities, or clusters of noisy equipment
- Combining noisy operations to occur in the same time period (because noise impacts of multiple operations are not cumulative), but phase demolition, earth moving and ground-impacting operations so as not to occur at the same time (because vibration impacts are less when each vibration source is operated separately)
- Avoiding nighttime activities near residential areas
- Avoiding impact pile driving where possible in noise-sensitive and vibration-sensitive areas and consider the use of vibratory or sonic pile driving equipment where geological conditions permit, but consideration must be given to their vibratory impacts
- Using special quieted equipment, such as enclosed air compressors and mufflers on all engines
- Selecting quieter demolition methods, where possible
- Selecting demolition methods not involving impact, where possible
- Avoiding vibratory rollers and packers near vibration-sensitive areas
- Providing a careful maintenance and lubrication program for heavy equipment

19 SECTION 19: CONTAMINATION

Impact—Contamination on property that would be used for the project: Based on the Phase 1 study completed during preliminary engineering there are 43 properties with known contamination, 16 are ranked as having a “high” risk for finding contamination, and 27 are ranked as having a “medium” risk.

Mitigation:

CT 1: MDT will, during final design, complete a Phase 2 study at all sites where there is potential contamination based on the Phase 1 study. The Phase 2 study would include taking on site samples of soil and groundwater. Where contamination is found, a remediation plan would be developed for review and approval by the local, state and federal agencies having jurisdiction.

Pre-construction characterization of contaminants at excavation areas will enable MDT to plan a BMP approach for management of the soil and ground water contamination and control of the fugitive dust generated during excavation. MDT will require contractors to prepare a Pollution Prevention and Abatement (PPA) plan to minimize the potential for public and/or worker exposure to hazardous materials during construction. In addition, before construction activities proceed, for those sites where the potential for hazardous material contamination has been identified and for any site discovered during construction, MDT commits to the following measures: 1. completing a Site Sampling Plan during final design on all areas identified as having high probability of containing surface hazardous materials and are in the construction envelope, and 2. preparing a CERCLA-certified Site Safety Plan during final design that will establish policies and procedures to protect construction workers and the public from hazards posed by any hazardous wastes identified in the Site Sampling Plan.

It is anticipated that most of the contaminated sites would be tainted with petroleum-based products. Typical remediation would include removal of contaminated soil, although in-situ methods such as thermal treatment or soil vapor extraction may be used. Treatment of groundwater contaminated with petroleum-based products treatment could include pump and treat methods, among others. (The health and safety discussion directly below provides additional detail relative to contamination remediation.)

Impact—Health and Safety: The Occupational Safety and Health Act (OSHA) of 1970, as amended, establishes standards to enhance safe and healthy working conditions in places of employment throughout the United States. Each employer is required to furnish a place of employment free of recognized hazards likely to cause death or serious physical harm to all employees. The OSHA regulations establish specific standards for employers to achieve a safe and healthy working environment and employees have a duty to comply with these standards

Mitigation:

CT 2: MDT will, in order to meet OSHA requirements:

- Follow OSHA and local standards for fire protection and prevention. Handling and storage of fuels and other flammable materials during construction will conform to these requirements,

which include appropriate storage of flammable liquids and prohibition of open flames within 50 feet of flammable storage areas.

- Perform detailed investigations of the potential presence of contaminants in soil and groundwater prior to construction, using conventional drilling, sampling, and chemical testing methods. Based on the chemical test results, a mitigation plan will be developed to establish guidelines for the disposal of contaminated soil and discharge of contaminated dewatering effluent, and to generate data to address potential human health and safety issues that could arise because of contact with contaminated soil or groundwater during construction. The investigation and mitigation plan will follow the local, state and federal requirements as appropriate.
- Cover with plastic sheeting contaminated soils removed during excavation and grading activities that remain on site for an extended period of time to prevent the generation of fugitive dust emissions that migrate offsite
- Use a licensed waste hauler, applying appropriate manifests or bill of lading procedures, as required to haul soil for disposal at a landfill or recycling facility
- Use chemical test results for groundwater samples along the alignment to obtain the appropriate permits to evaluate requirements for pretreatment prior to discharge to sanitary sewers, storm drains or surface waters. Effluent produced during the dewatering of excavations will be collected in onsite storage tanks and periodically tested, as required under discharge permit requirements, for potential contamination to confirm the need for any treatment prior to discharge. If required, treatment may include:
 - Settling to allow particulate matter (total suspended solids) to settle out of the effluent in order to reduce the sediment load as well as reduce elevated metal and other contaminant concentrations that could be associated with suspended sediments
 - Construction of a small-scale batch wastewater treatment system to remove dissolved contaminants from the dewatering effluent prior to discharge to the sanitary sewer including the use of filtration to remove suspended solids
- Develop a detailed mitigation plan for the handling of potentially contaminated soil and groundwater prior to starting construction.
- Design, if necessary based on environmental conditions, dewatering systems to minimize downward migration of contaminants that can result from lowering the water table. As necessary, shallow soils with detected contamination would be dewatered first using wells screened only in those soils. Dewatering of deeper soils would then be performed using wells screened only in the zone to be dewatered. Dewatering wells would be installed using drilling methods that prohibit shallow contaminated soils from being carried deeper into the boreholes.
- Require workers performing activities on site that could involve contact with contaminated soil or groundwater have appropriate health and safety training. A Worker Health and Safety Plan (HSP) will be developed and monitored for the implementation of the plan on a day-to-day basis by a Certified Industrial Hygienist (CIH). The HSP will specify mitigation of potential worker and public exposure to airborne contaminant migration by incorporating dust suppression techniques in construction procedures. The plan will also specify mitigation of worker and environmental exposure to contaminant migration via surface water runoff pathways by implementation of comprehensive measures to control drainage from excavations and saturated materials excavated during construction. The HSP will include provisions for:

- Conducting preliminary site investigations and analysis of potential job hazards
 - Personal protective equipment
 - Safe work practices
 - Site control
 - Exposure monitoring
 - Decontamination procedures
 - Emergency response actions
- Review existing asbestos surveys, abatement reports, and supplemental asbestos surveys, as warranted. Perform an asbestos survey for buildings to be demolished, as required. Asbestos-containing building materials will require abatement prior to building demolition. Removal and disposal of asbestos-containing materials will be performed in accordance with applicable local, state, and federal regulations.
 - Perform a lead-based paint survey for buildings to be demolished to determine areas where lead-based paint is present and the possible need for abatement prior to demolition.

Impact—Underground tanks: Based on the Phase 1 study there are a number of underground storage tanks that would be impacted by the project.

Mitigation:

CT 3: MDT will require the tanks be removed in accordance with local, state and federal requirements. If contamination exists, the site(s) will be remediated.

Impact—Construction-related impacts: Construction activities involve the use petroleum and other products and materials that are potential contaminants. Construction activities would generate dust, require groundwater removal, and involve excavation.

Mitigation:

CT 4: MDT will incorporate construction impact controls into contract specifications and construction management plans that will:

- Control dust during construction
- Control storage and use of hazardous materials
- Control disposal of groundwater
- Require a Health and Safety Plan for proper handling of hazardous material and contingency plans for handling any spills during construction
- Require the Health and Safety Plan to include emergency response procedures in the event of a hazardous material spill
- Require the Health and Safety Plan to include requirements for notifying the proper authorities of any spill of hazardous material

20 SECTION 20: UTILITIES

Impact—Construction-related impacts: The project would require relocating utilities.

Mitigation:

UT 1: MDT will incorporate construction impact controls into contract specifications and construction management plans that, when feasible, maintain utility connections, minimize the time without service, install new or alternative service before disconnecting the existing service, and allow disruptions to service to occur only during periods of non-usage or minimal usage

21 SECTION 21: RAILROADS

Impact—Construction-related impacts: The alignment crosses railroad tracks in two locations.

Mitigation:

RR 1: MDT will design the project to provide vertical and horizontal clearances in accordance with the railroad's requirements.

RR 2: MDT will incorporate construction impact controls into contract specifications and construction management plans that require construction over the railroads not interfere with railroad operations.

22 SECTION 22: PERMITS

Impact: There are a number permits required for the project and all of them are, in some way, related to mitigating environmental impacts that are discussed in other sections of this chapter.

Mitigation:

PT 1: MDT will obtain the following permits:

- Environmental Protection Agency (EPA)
 - National Pollutant Discharge Elimination System (NPDES) General Permit for discharges from construction activities
 - NPDES Municipal Separate Storm Sewer System Permit (MS4) for the construction of stormwater discharge facilities that collect, convey, channel, hold, inhibit or divert the movement of stormwater and discharges into surface waters
 - Stormwater facilities are necessary since the improvements would exceed the impervious surface threshold of five acres. A Storm Water Pollution Prevention Plan (SWPPP) is required as part of the engineering plans.
- Army Corps of Engineers (ACOE)
 - No permits are required from the ACOE; however, construction activities over jurisdictional waters (water management canals) require coordination with this agency

- South Florida Water Management District (SFWMD)
 - A SFWMD right of way Occupancy Permit is required under the jurisdiction of the water management district for the Project since Canals C-7, C-8 and C-9 would be crossed by the guideway
 - An Environmental Resource Permit (ERP) is required for the approval of Surface Water Management Systems and for the Management and Storage of Surface Water (MSSW)/drainage permit. The ERP is a joint-permit application that addresses surface and storage of waters. The FDEP and ACOE also review this application.
 - Mining/Dewatering Permit is required for dewatering
 - Use of Works of the District Permit is required for construction over the state canals
- Florida Department of Environmental Protection (FDEP)
 - A General Air Compliance and Enforcement Permit is required to insure all state air quality control regulations are obeyed
 - An Asbestos Manufacturing and Fabrication Facilities Air General Permit for the removal of asbestos is required since demolitions are expected within the corridor
 - A Management and Storage of Surface Waters Permit is required since surface waters (canals) are present within the corridor.
 - Standard General Permit for Incidental Site Activities
- Miami-Dade County Department of Environmental Resources (DERM)
 - Class II Permit for construction of outfalls to water bodies of Miami-Dade County
 - Class V Permit for dewatering of groundwater, surface water, or water that has entered an excavation or trench
 - Tree Removal Permit
 - Construction Permit, which addresses the contamination issues within the corridor
 - Class VI Permit for construction of any drainage system in the vicinity of contaminated areas
 - Class III Permit for construction in canal right of way
 - Notice of Asbestos Renovation or Demolition
 - Storage Tank Removal/Abandonment Permit
- Miami-Dade County Planning and Zoning Department
 - A Category 15 Permit would also need to be obtained for the demolition of any commercial or residential structures that may exist within a proposed alternative's right of way
- Miami-Dade Building Department
 - Building Permit Application
- Florida Department of Transportation
 - State Highway Access Driveway/Connection Permit
 - Rail Corridor Crossing Permit - Right of Entry Standard Application Package
- Florida East Coast Railroad
 - Application for Highway Crossing Over/Under Properties and Tracks

23 SECTION 23: CUMULATIVE AND SECONDARY IMPACTS

Impact—induced development: The project could generate new development that could have a number of environmental impacts. The impact of higher property costs and rents is discussed in Section 9.1. There could be impacts on community resources, water resources, air quality, contamination and utilities.

Mitigation:

CS 1: The agencies approving development and land use plans should, using the regulatory powers available to them, insure:

- Sufficient community resources are available for the post-development demand
- Community interaction is not hindered by new development
- Contamination on development sites is properly remediated
- Local air quality is properly addressed
- Adequate utility services are available

CS 2: For joint developments, where MDT is a participant, MDT will insure:

- Sufficient community resources are available for the post-development demand
- Community interaction is not hindered by new development
- Contamination on development sites is properly remediated
- Local air quality is properly addressed
- Adequate utility services are available