

## 27. Construction Impacts

### 27.1. Chapter Overview

#### 27.1.1. Introduction

This chapter discusses the changes to the potential for construction-related impacts associated with the SDEIS Preferred Alternative. Construction activities associated with rail and station platforms for the SDEIS are the same as for the DEIS Preferred Alternative. New elements requiring analysis for construction phase-related impacts include the following:

- Change in project terminus: the revised Preferred Alternative terminates in Englewood and would not require construction activity in Tenafly.
- North Bergen VBF option: the option for a vehicle base facility (VBF) in North Bergen was eliminated and therefore would not result in construction activity nor the related temporary disruption of freight service in the vicinity of the existing CSX North Bergen Yard.
- West Side Avenue alignment and substation: to minimize disruption of freight operations, the alignment north of the existing Tonnelle Avenue Station would cross on viaduct over the CSX North Bergen Yard (freight rail yard) and travel along West Side Avenue at grade until 79<sup>th</sup> Street. A substation would be constructed at the southwest corner of West Side Avenue and 69<sup>th</sup> Street.
- 85th Street Viaduct and 85<sup>th</sup> Street Extension: the revised Preferred Alternative would require a new railroad underpass through the elevated CSX River Line, which runs on embankment in North Bergen. The purpose of the underpass would be to extend 85<sup>th</sup> Street to West Side Avenue. Furthermore, a viaduct is proposed from West Side Avenue, rising at approximately 79<sup>th</sup> Street, west of the CSX and NYS&W railway alignments, passing over the existing freight facilities and CSX River Line elevated alignment, and connecting to the Northern Branch running track at grade near 90<sup>th</sup> Street.
- Development of Leonia Station parking deck: the revised Preferred Alternative would require an easement with Bergen County to construct a parking deck in Overpeck County Park. Construction activity would occur within Overpeck County Park near the Bergen Equestrian Center.
- Development of the Leonia pedestrian overpass: a pedestrian overpass would be constructed connecting Leonia High School to the athletic fields in Overpeck County Park.
- Englewood Route 4 VBF and Station: construction disturbance would be reduced due to the planned co-location of the parking deck and the VBF.
- Englewood Town Center Station: the surface parking area east of the alignment between Palisade and Demarest Avenues would be reconfigured to maintain the current number of parking spaces while improving circulation.
- Englewood Hospital and Medical Center Station pedestrian overpass: a pedestrian overpass would be constructed over North Dean Street to connect the station with the shared hospital parking facility.

During the DEIS public comment period eight comments were received regarding construction impacts. Most comments addressed concerns from the residents and leadership in Tenafly regarding the length of the construction period and potential for community disruption arising from the construction activity. The SDEIS revisions addressed these concerns. The SDEIS Preferred Alternative does not propose the development of project elements in Tenafly except for grade crossing improvements to provide for Quiet Zone mitigation of overnight freight noise impacts. One comment noted concern with potential vibration impacts during construction to manufacturing activities at the Kulite facility adjacent to the Leonia Station parking deck proposed in the DEIS. The change in location of the Leonia deck resolves this

concern. One comment noted that the project should comply with diesel emission standards from construction vehicles. This information has been added to the air quality discussion below.

### **27.1.2. Summary of Findings of the DEIS and SDEIS**

The construction of the track, grade crossings, and most station locations described for the DEIS Preferred Alternative are the same for the SDEIS Preferred Alternative. Where project elements have relocated, the project element itself and its associated construction-phase impacts do not differ from the DEIS. Differences in construction-phase impacts between the DEIS and the SDEIS arise from site constraints associated with the relocated improvements; for example, the Leonia Station parking deck may cause construction-phase impacts to the users of the Bergen Equestrian Center; the Englewood VBF facility may encounter hazardous materials during excavation; and the reconfiguration of the parking at the Englewood Town Center Station would generate temporary traffic and parking issues as it would require the demolition of two properties and construction activities in the downtown area while temporarily displacing existing parking areas.

The DEIS described construction-phase impacts by discipline so that this chapter may be associated with the permanent impact discussion in the respective discipline chapter. The SDEIS follows this same format; therefore, by discipline, construction impacts are as follows:

- **Land Use:** Impacts are related to circulation and access during construction. Pedestrian and vehicular access management plans would mitigate the potential impacts.
- **Community Facilities:** Access issues similar to those discussed for Land Use would result during the construction phase. NJ TRANSIT's contractor would develop a construction management plan to ensure that the flow of vehicular and pedestrian traffic remains relatively unimpeded.
- **Parkland, Open Space, and Recreational Resources:** Special consideration and coordination would be undertaken to minimize impacts to the Bergen Equestrian Center in Overpeck County Park. Construction noise can be mitigated through the use of temporary sound walls, alternative construction methods, timing restrictions, and noise-deadening features on construction equipment. Construction scheduling would take into account events at the Equestrian Center to avoid generating noise that would be adverse to the center's most noise-sensitive operations. Construction activity may temporarily affect traffic circulation in the vicinity of parkland, open space, and recreational resources. NJ TRANSIT's contractor would develop a construction management plan to ensure that the flow of vehicular and pedestrian traffic remains relatively unimpeded.
- **Utilities:** Utility impacts are the same as described in the DEIS. No interruption in utility service is anticipated as a result of construction activity associated with the Preferred Alternative.
- **Traffic and Parking:** Construction activity would affect 18 grade crossings, which is five fewer than the DEIS Preferred Alternative. The construction impacts at these 18 locations were described in the DEIS as a component of the DEIS Preferred Alternative. The reconfiguration of parking at the Englewood Town Center Station would temporarily eliminate off-street parking presently accommodated between Palisade and Demarest Avenues east of the rail line. Temporary parking may be accommodated using the proposed Green Acres mitigation property south of Palisade Avenue to help ease the temporary parking reduction.
- **Transit and Freight:** Bus routes that currently use roadways proposed for temporary closure during the construction period would be rerouted. Notification of route changes would be published by NJ TRANSIT. Construction activity within the rail right-of-way would result in impacts to freight service. Mitigation of freight impacts would require coordination between NJ TRANSIT, NYS&W, and CSX.
- **Air Quality:** Air Quality impacts are the same as described in the DEIS. Emissions from construction vehicles and fugitive dust disturbed during construction constitute construction air

quality impacts. The application of moisture (spraying, use of moisture-retaining agents) can mitigate fugitive dust while operational controls and machinery specifications can control emissions from construction vehicles.

- **Noise and Vibration:** Construction noise and vibration impacts are likely to occur in the vicinity of all proposed station sites as well as the rail right-of-way. Noise impacts would typically be limited to the construction day, which is approximately 7:00 a.m. to 6:00 p.m. Additionally, temporary noise barriers and vibration-reduction construction methods (pre-auguring pavement, use of dampeners on vehicles) can be employed to reduce impacts during the construction period. Special consideration and coordination would be undertaken to minimize impacts to the Bergen Equestrian Center in Overpeck County Park.
- **Water Quality:** Water quality impacts are the same as described in the DEIS. Ground-disturbing construction activity near waterways can result in short-term erosion and sedimentation impacts to water quality. Best Management Practices (BMPs) would be implemented to minimize water quality degradation, such as use of cofferdams or sheet piling, slope stabilization, turbidity barriers, and prohibiting construction during spawning season.
- **Wetlands:** Wetland impacts are the same as described in the DEIS. Temporary disturbances to wetlands would result from construction-induced run-off and sedimentation, as well as placement of construction equipment in wetland areas. Erosion and sediment control measures would be implemented throughout the construction duration and all wetlands impacted by construction staging would be restored to pre-construction conditions.
- **Floodplains:** In addition to the floodplain locations described in the DEIS, two SDEIS improvements would be located within 100-year floodplains, but in both instances the construction activity would affect previously disturbed and developed land. Construction activity would occur within floodplain zones. Mitigation measures would include using structures to cross floodplains instead of filling them, providing adequate flow circulation, reducing grading requirements, and preserving natural drainage when possible.
- **Vegetation and Wildlife:** Minimal disturbance to vegetation and wildlife is anticipated. Cautious staging and construction practices would be implemented in areas where mature vegetation and potential fish and wildlife habitats are present.
- **Hazardous Materials:** Construction activity near areas of known hazardous material contamination could unearth contaminated soils. These concerns are specifically relevant at the Englewood VBF, which is located on a site with a known history of contamination. A complete Phase I Environmental Site Assessment (ESA) would be conducted during Final Design and Engineering to verify that the station sites are not contaminated with previously undocumented hazardous materials. Should hazardous materials be identified on site, remediation efforts would be implemented to remove the hazardous materials.
- **Safety and Security:** Coordination with CSX would minimize impacts to freight operations during construction as well as ensure construction worker and rail operator safety. Municipal safety services would be contacted prior to the initiation of any activities and coordination between NJ TRANSIT and local police, fire, and other emergency services would continue through the duration of the construction phase. NJ TRANSIT would coordinate with contractors and personnel to ensure that these safety guidelines are incorporated into their construction plans and procedures. Fencing and signage would be utilized to physically buffer construction sites from public space and to provide sufficient warning to the public.
- **Historic and Archeological Resources:** Impacts associated with construction noise, vibration, and air quality to historic resources would be mitigated with measures such as establishing staging areas away from the resources and establishing truck routes that do not pass by the resource.

A construction impact mitigation plan would be developed prior to the start of any construction. The development of this plan would incorporate input from NJ TRANSIT, the construction contractor, county agencies, local communities, regulatory agencies, and other concerned parties. The plan would

incorporate mitigation measures such as the implementation of public outreach efforts to inform local communities of the proposed construction program, the establishment of community construction coordination activities, and custom tailoring of mitigation plans for community-specific needs. A schedule of construction segments and sequencing with defined staging areas would also be determined upon identification of alternative segments.

In order to minimize overall adverse impacts during construction, the proposed project would be planned, designed, scheduled, and staged to minimize disruption to existing freight operations, roadway traffic, abutting neighborhoods, and the environment. To minimize impacts, it is assumed that construction staging areas for construction of the rail alignment would use the proposed station sites. Although some adverse impacts would be unavoidable, the duration and severity of these effects would be minimized by applying BMPs pertaining to construction operations and implementing effective mitigation measures. Upon completion of the Final Design and Engineering, additional and more specific mitigation measures may be expanded to improve those currently developed.

## 27.2. Methodology

The analysis of construction-related impacts followed the same methodology as described in the DEIS, focusing on specific resource categories such as land use, community facilities, traffic and parking, and air quality. The analysis relies on information gathered for the operational impact analysis. The following sections describe the potential construction impacts and mitigation for each resource category as they apply to the elements of the SDEIS not analyzed previously in the DEIS. As existing conditions have already been described in the previous sections as part of the operational impact analysis, they are not repeated in this section.

Construction activities included in this analysis are as follows:

- 85<sup>th</sup> Street Viaduct, 85<sup>th</sup> Street Extension (railroad underpass and grade crossings), and West Side Avenue alignment – includes track work, excavation with hydraulic impact hammers and drilling, as well as grading and paving for roadway improvements (in-road work on West Side Avenue and the new 85<sup>th</sup> Street Extension).
- Leonia Station parking deck – includes excavation, pile driving, and construction activity associated with a reinforced concrete parking deck, including temporary pedestrian and traffic circulation changes. Proximity to the Bergen Equestrian Center is an additional concern.
- Leonia pedestrian overpass – involves a single-span bridge constructed of either steel or concrete girders between piers supported on foundations. Pile driving would be required as well as coordination with freight service during construction.
- Vehicle base facility (VBF) – includes track work, building facilities, mechanical and electrical systems, stormwater management, grading, paving, and foundations. The general considerations for the VBF are the same as described in the DEIS although a parking deck has been added to the site, to be co-located above the VBF.
- Englewood Town Center Station – reconfiguration of the park and the parking area between Palisade and Demarest Avenues would include demolition, grading and paving, and site improvements in an active downtown location, requiring traffic and pedestrian circulation protection measures, as well as carefully planned construction traffic routing.
- Englewood Hospital and Medical Center Station pedestrian overpass – includes a single-span bridge constructed of either steel or concrete girders between piers supported on foundations. Pile driving would be required as well as temporary closure of North Dean Street at this location.

## **27.3. Environmental Review**

### **27.3.1. Land Use**

*Impacts* – Areas used for construction staging would be the areas proposed for station parking and parking deck development, as well as the rail right-of-way. Should vacant land be identified during construction, those areas may also be used for staging. These additional areas would be selected to avoid the disruption of adjacent land uses. As the project area is continuously being redeveloped, specific locations cannot be identified at this time. Temporary construction easements may be required. Any impacts would be localized and areas used for staging would return to their initial use and condition once construction has completed.

*Mitigation* – Construction mitigation for land use throughout the corridor would include: pedestrian and vehicular access management plans based on coordination with local agencies and municipalities; the construction and movement of debris during approved time intervals; and the utilization of construction equipment that would attenuate the imposition of noise and air quality impacts to neighboring land uses.

### **27.3.2. Community Facilities**

*Impacts* – The analysis of impacts to community facilities is generally the same as described in the DEIS, with the exception of a reduction in area potentially affected as the proposed construction activity would no longer impact Tenafly.

*Mitigation* – The same mitigation measures described for the DEIS apply to the SDEIS.

### **27.3.3. Parkland, Open Space, and Recreational Resources**

*Impacts* – Construction activity may temporarily affect traffic circulation in the vicinity of parkland, open space, and recreational resources, particularly within Overpeck County Park (Leonia South Area) and Depot Square Park in Englewood. Vehicular and pedestrian access to all parkland, open space, and recreational resources would be maintained throughout the construction of the project, but may require temporary detours of traffic that use roadways that would be temporarily closed to accommodate construction activity.

Construction-phase impacts to parkland associated with the development of the Leonia Station parking deck would be described by the Green Acres diversion agreement. All areas not included in the diversion acreage (temporary construction impact areas) would be restored. Potential for impact to the Bergen Equestrian Center would require more extensive consideration during the construction phase. The Equestrian Center is located immediately south of the proposed parking deck location. Access to both the Equestrian Center and the parking deck construction site would be along the same internal park road connecting to Fort Lee Road. Traffic circulation would be required to take into account the movement of horse trailers, particularly if construction activity would temporarily reduce roadway width or turning radii. Additionally, construction activity would produce noise and vibration that may be disturbing to horses.

Construction of the pedestrian overpass in Leonia may require the fencing off of a portion of the lot on which the athletic fields are located; however, the use of the recreational facility is not anticipated to be compromised during the construction phase.

The development of the 85<sup>th</sup> Street Viaduct and the 85<sup>th</sup> Street Extension's railway underpass would develop a portion of the lot containing the North Bergen Municipal Pool; however, the proposed construction activity would occur in the southeast quadrant of the lot while the pool facilities and access

are located in the northeast quadrant. Construction activity would not affect access to the pool or disrupt the use of the resource. The reconfiguration of the park and the parking area at the Englewood Town Center Station would temporarily eliminate on-street and off-street parking presently accommodated within the lots contained on Depot Square Park.

*Mitigation* – NJ TRANSIT’s contractor would develop a construction management plan to ensure that the flow of vehicular and pedestrian traffic remains relatively unimpeded. The construction management circulation plan would be required to consider the movement of horse trailers. The contractor and NJ TRANSIT would coordinate with the management of the Bergen Equestrian Center to determine the optimal periods for the most potentially disruptive elements of construction and follow the Center’s guidance on measures to minimize impacts on center activities. The contractor and NJ TRANSIT would also coordinate the use of the Green Acres mitigation property in Englewood Town Center for temporary parking during construction of the station platforms and reconfigured parking area.

#### **27.3.4. Utilities**

*Impacts* – The proposed SDEIS revisions to the DEIS Preferred Alternative do not change the provision of utility service except to reduce the distance of the Northern Branch alignment that would need electrification. All potential impacts described in the DEIS apply to the SDEIS, with the exception of impacts to Tenafly, as no catenary or other utility work would be undertaken there.

*Mitigation* – Mitigation is the same as for the DEIS.

#### **27.3.5. Traffic and Parking**

*Impacts* – Construction of the SDEIS Preferred Alternative would temporarily affect local traffic and pedestrian movement, as well as on-street parking. SDEIS improvements that may require detours include the West Side Avenue alignment/85<sup>th</sup> Street Viaduct/85<sup>th</sup> Street Extension, development of the Englewood Route 4 VBF and Station, reconfiguration of parking at the Englewood Town Center Station, and development of the Englewood Hospital and Medical Center Station pedestrian overpass. Access to the Leonia Station parking deck site and Bergen Equestrian Center is limited to one roadway in and out of Overpeck County Park. Construction activity would be required to develop methods to share the access road.

Short-term traffic delays would likely be an effect associated with the closure of roadway segments. These delays would cease with the reopening of the roadway segment following the completion of construction in the area. The reconfiguration of parking at the Englewood Town Center Station would temporarily reduce parking capacity in the town center of Englewood. Temporary parking may be accommodated using the proposed Green Acres mitigation property south of Palisade Avenue to help ease the temporary parking reduction. The development of the Englewood Hospital and Medical Center Station pedestrian overpass would temporarily impact traffic on North Dean Street, requiring short-term closure of the roadway at this location. These delays would cease with the reopening of the roadway segment following the completion of construction in the area.

*Mitigation* – A Maintenance and Protection of Traffic (MPT) plan would be developed and implemented by NJ TRANSIT through considerable consultation with NJDOT, the counties, and the municipalities that are to be impacted. The action plan would list measures that would be utilized during the construction stages of the proposed project that are expected to result in temporary roadway lane closures. These measures include, but would not be limited to, construction during off-peak hours, when viable, public notification of future closures and detour routes, the use of well-positioned closure and detour warning signs, and the appropriate scheduling and coordination of all construction activities that would occur within the same area.

### 27.3.6. Transit and Freight Rail

*Impacts* – Impacts to passenger transit would be confined to temporary detours of bus service for those routes that use roadways that would be temporarily closed to accommodate construction activity at the proposed station sites. The construction of the 85<sup>th</sup> Street Extension railroad underpass would result in disruption of freight service.

*Mitigation* – NJ TRANSIT would publish route and schedule changes in paper format and distribute this information for any affected bus routes. Additional notification would be published on NJ TRANSIT's website. A considerable amount of coordination is necessary between NJ TRANSIT, NYS&W, and CSX to minimize the temporary construction-related impacts that would affect rail freight operations. This coordination would entail discussions pertaining to construction scheduling and staging areas. Each of these construction activities would occur during the early stages of project construction to reduce the duration of time that construction would impact freight operations.

### 27.3.7. Air Quality

*Impacts* – Air quality impacts during construction would be limited to short-term, increased fugitive dust and mobile source emissions. These impacts would cease with the conclusion of construction. Air quality construction impacts assessed for the DEIS are the same as for the SDEIS, with the exception of a reduction in area potentially affected as the proposed construction activity would no longer impact Tenafly.

*Mitigation* – As discussed in the DEIS, a number of mitigation measures would be utilized to minimize or eliminate temporary air quality impacts created during the construction phase of the proposed project. The application of various control measures during construction activities would be employed, particularly near historic resources, to minimize the amount of construction dust generated through measures including application of water or other soluble moisture-retaining agents to dirt areas; cleaning construction equipment and adjacent paved areas that may be covered with dirt or dust; covering haul trucks carrying loose materials to and from construction sites; use of clean fuels in construction equipment; deployment of clean diesel construction equipment (new, retrofitted, rebuilt, or repowered); and the implementation of anti-idling practices at construction sites.

### 27.3.8. Noise

*Impacts* – Construction activities required by implementation of the Preferred Alternative would have short-term noise impacts on receptors in the immediate vicinity of the construction sites. In addition to the sites described in the DEIS, noise impacts would likely affect the Bergen Equestrian Center, as described above in Parkland, Open Space, and Recreational Resources.

Noise impacts associated with the 85<sup>th</sup> Street Extension railroad underpass would be the same as those described in the DEIS. Additional impacts are anticipated from the Viaduct over the CSX North Bergen Yard and the 85<sup>th</sup> Street Viaduct. Construction would likely involve excavation with hydraulic impact hammers (hoe rams) or drilling combined with controlled blasting. Drill and blast minimizes noise and ground-borne vibration. However, since the nearest residence is 1,600 feet from the proposed blasting area, noise impacts from blasting would be minimal.

*Mitigation* – The magnitude of construction-generated noise impacts along the Northern Branch Corridor would be reduced or eliminated by utilizing a number of mitigation measures, including:

- Temporary sound walls;
- Alternative construction methods such as vibration or hydraulic insertion instead of traditional

- pile driving;
- Baffled diesel generators or use of electric generators instead of diesel;
- Specifying adequate muffler systems on construction equipment that requires combustion engines and requiring that vehicles and equipment are properly maintained and operators trained;
- Modifying equipment with dampeners to reduce noise as a result of vibration; and,
- Aprons (sound absorptive mats that are hung from equipment).

Specific guidance and contract specifications would be developed prior to project implementation to address construction actions. This is particularly true of activity that could potentially affect the Bergen Equestrian Center or the Englewood Hospital and Medical Center. If necessary, special construction methods would be specified as part of the construction contract documents. A basic set of construction noise abatement measures would be included in the construction specifications. All equipment would have sound control devices and would comply with pertinent equipment noise standards of the US Environmental Protection Agency (EPA) and the Occupational Safety and Health Administration (OSHA).

### **27.3.9. Vibration**

*Impacts* – Activities to construct the parking deck facilities may include pile driving, sheeting, excavation, and compaction. Typical vibration levels for equipment likely to be used for this project are 0.035 inch/second (79 VdB) for a jackhammer, 0.089 inch/second (87 VdB) for a large bulldozer, and 0.170 to 1.518 inches per second (93 to 112 VdB) for a pile driver at a distance of 25 feet from construction. The criterion for construction vibration damage ranges from 0.12 to 0.5 inch/second (90 to 102 VdB) depending upon the type of building construction. At a distance of 350 feet, the highest peak period velocity of an impact pile driver would be below the construction damage criteria. With a sonic pile driver, this distance would be reduced to 160 feet. While areas further than these distances may experience vibration annoyance, there would be no risk of building damage. Vibrations may be sensed by the horses stabled at the Bergen Equestrian Center.

For the construction of the Viaduct over the CSX North Bergen Yard, 85th Street Viaduct, and 85<sup>th</sup> Street Extension railroad underpass, construction would likely involve excavation with hydraulic impact hammers (hoe rams) or drilling combined with controlled blasting. Drill and blast minimizes noise and ground-borne vibration. If drill and blast are used, the contractor would monitor the peak particle velocity during construction to ensure that the rock removal would not cause damage to nearby structures. However, since the nearest residence is 1,600 feet from the proposed blasting area, ground-borne vibration impacts from blasting would be minimal.

*Mitigation* – Compliance with industry practices and Federal Transit Administration (FTA) guidelines for historic structures should provide adequate protection to buildings in the corridor and their occupants from vibration effects. Noise mitigation measures are often vibration mitigation measures, as vibration is both a physical feature that is felt, as well as a source of noise. As a consequence, vibration mitigation can take the form of any of the following, which also apply to noise mitigation:

- Pre-auguring and pre-cutting pavement prior to pile driving;
- Alternate pile driving methods including hydraulic insertion; and
- Use of dampeners on machinery that typically vibrates.

Field vibration monitoring gauges would be installed prior to the initiation of construction activities that are likely to result in vibration impacts, particularly in areas near historic resources. The monitors would be used to verify that actual vibration levels remain below the damage threshold of 2.0 inches/second for

buildings and 0.5 inch/second for historic structures. If construction vibration is found to be in excess of these thresholds, construction activity would cease until modifications to equipment were made to reduce frequency of vibration.

Coordination with the Bergen Equestrian Center management would be required to develop a specific approach for the development of the Leonia Station parking deck that minimizes impact to the center operations.

### **27.3.10. Water Quality**

#### *27.3.10.1. Surface Water*

*Impacts* – Potential construction-induced impacts to water quality would likely be soil erosion and sedimentation resulting from excavation and grading activities necessary for the construction of SDEIS improvements. There are no proposed SDEIS improvements that present a scenario that is unique or more sensitive or susceptible to generating water quality construction impacts than improvements discussed in the DEIS.

*Mitigation* – Mitigation measures described in the DEIS would apply to the SDEIS and would include adherence to BMPs including but not limited to:

- Stabilization of slopes, channels, swales, and embankments after construction activities are completed;
- Excavation activities conducted to minimize the amount of land disturbance;
- Installation of turbidity barriers around the area of construction to confine turbidity to a limited area and not discourage the upstream or downstream passage of migratory or other fish species;
- Phasing construction of project elements located within surface waters so at all times a portion of the watercourse not less than one-third its total size would be left unobstructed; and,
- Prohibiting construction within waterways during anadromous fish spawning/migration activities.

#### *27.3.10.2. Groundwater*

*Impacts* – Construction-related impacts to groundwater in the Northern Branch Corridor associated with the SDEIS improvements would be limited to the development of the VBF and parking decks, which require excavation for foundation development.

*Mitigation* – Several mitigation measures would be implemented to minimize or eliminate impacts to groundwater during the construction phase of the proposed Northern Branch Corridor project. During excavation, any groundwater that is encountered would be pumped from excavated soils, filtered to remove suspended sediments, and discharged to the stormwater discharge system or to on-site infiltration ditches. This process would be temporary and would cease with the completion of excavation. Permits that would be required to undertake this dewatering process would be acquired from N.J. Department of Environmental Protection (NJDEP). Proper maintenance procedures on the construction site would avoid most leaks and mishaps associated with construction equipment. Any spills (oil, gasoline, diesel, brake fluid, transmission fluid, etc.) would be contained immediately and disposed of properly, off site, in accordance with NJDEP procedures.

### **27.3.11. Wetlands**

*Impacts* – The development of portions of the alignment as well as 91<sup>st</sup> Street Station, Ridgefield Station, and the Englewood Route 4 Station and VBF would result in both temporary and permanent impacts to wetlands. Permanent impacts are addressed in Chapter 15. Temporary impacts are those that last less

than six months, after which time the wetland is restored to its previous condition. Temporary impacts are not quantified but are expected whenever permanent impacts occur.

*Mitigation* – Temporary signs and fences, such as orange snow fencing, may be used to limit unnecessary, direct construction impacts to wetlands. Erosion and sediment control measures consisting of silt fences, hay bales, mats, or temporary drainage systems would be used to ensure that indirect construction activity encroachment on wetlands is avoided. Implementation of spill prevention plans designed first to avoid spills and second to provide direction for the efficient and successful removal of spills would minimize or alleviate adverse impacts. Construction staging areas would be selected to avoid wetlands and their associated adjacent areas. Restricting washing activities to areas distant from wetlands and other sensitive resources would minimize or alleviate adverse impacts to these resources.

Temporary impacts to wetland resources resulting from unavoidable interference with the wetland resource would be mitigated such that the wetland is returned to pre-construction conditions at the end of the construction period, or six months, whichever is sooner. As a result, wetlands would not incur long-term impacts from temporary construction activities conducted in accordance with applicable regulations.

### **27.3.12. Floodplains**

*Impacts* – The majority of the West Side Avenue alignment and portions of 91<sup>st</sup> Street Station, Palisades Park Station, Leonia Station, and Englewood Route 4 Station and VBF would be constructed within the 100-year floodplain. Development of the West Side Avenue alignment would occur within an existing improved area (paved right-of-way of West Side Avenue). Development of the stations and parking areas would disturb primarily developed land. Construction impacts to floodplains—disturbances beyond that which was described in Chapter 16: Floodplains—is anticipated to be inconsequential.

*Mitigation* – During construction, all disturbed soil would be treated in accordance with the “Standards for Soil Erosion and Sediment Control in New Jersey” to prevent siltation of existing floodplains or stormwater management infrastructure. Excess runoff associated with the project would be mitigated through the use of wet ponds, stormwater infiltration, or detention facilities and bio-retention. In addition, a Flood Hazard Area (FHA) Permit would be obtained from NJDEP if needed.

### **27.3.13. Vegetation and Wildlife/Threatened and Endangered Species**

*Impacts* – SDEIS improvements occur on land that is either presently developed or has been determined not to support resident sensitive species. Tree clearing may be required in association with some improvements, such as the development of the Viaduct over the CSX North Bergen Yard, the 85<sup>th</sup> Street Viaduct, the 85<sup>th</sup> Street Extension railroad underpass, and the Leonia Station parking deck. This activity has the potential to affect migratory species, such as the Indiana bat.

*Mitigation* – As described in the DEIS, mitigation measures to minimize potential construction-related effects on vegetation and wildlife would include cautious staging and construction practices in areas where mature vegetation are present. In addition, the US Fish and Wildlife Service (USFWS) recommends seasonal restrictions on tree clearing between April 1 and September 30 for potential Indiana bat summer roosting areas. Seasonal restrictions on tree clearing would be implemented in connection with any tree removal associated with the project.

### **27.3.14. Hazardous Materials**

*Impacts* – The study area corridor, as a result of its industrial history, contains several known contaminated sites with ongoing remediation (Refer to Chapter 19: Hazardous Materials), including Englewood Route 4 Station parking and VBF, which is proposed to be built on a location with a history

of contamination events. Contamination, if present, could be encountered during demolition and construction activities. Construction activities associated with the proposed project would not result in new contamination of the soils, surface waters, groundwater, or air along the corridor, at the station sites, or in the surrounding areas.

*Mitigation* – A complete Phase I Environmental Site Assessment (ESA) would be conducted during Final Design and Engineering to verify that the proposed improvements are not located on sites with known or undocumented contamination. Phase II testing is anticipated to be necessary at the Leonia Station parking deck location as well as the Englewood Route 4 Station parking and VBF site, as the development of both improvements necessitates excavation that could expose contaminated soils and groundwater.

BMPs would also be implemented and typically include preventative measures to ensure that hazardous materials do not migrate from a construction site and may include spraying down excavated soil to prevent fugitive dust; use of tarps or silt screens to prevent the erosion of known or suspected hazardous materials from the site; use of grates to remove soil from the tires of construction vehicles leaving the site; and use of appropriate protective gear for on-site personnel. BMPs may be implemented in those instances where hazardous materials are not identified on site as precautionary measures.

#### **27.3.15. Safety and Security**

*Impacts* – Construction-phase safety and security concerns for the SDEIS improvements are the same as described for the DEIS. Safety concerns associated with the development of the Leonia parking deck as they relate to the Bergen Equestrian Center are discussed above in “Community Facilities”, “Traffic and Parking”, “Noise”, and “Vibration”.

*Mitigation* – Mitigation would be the same as described in the DEIS and would include fencing and signage to physically buffer construction sites from public space as well as to provide sufficient warning to the public. In addition, the vulnerability of construction sites would be minimized through the use of fencing that would act as a deterrent to vandalism and trespassing.

#### **27.3.16. Historic and Archaeological Resources**

*Impacts* – Construction-related impacts would potentially affect historic resources within the Northern Branch Corridor. The major impacts considered would be short-term, intermittent, construction-generated noise, vibration, and fugitive dust.

The parking area that would be reconfigured between Palisade and Demarest Avenues is coincident with the location of the sites of 19<sup>th</sup> century structures. These are considered potentially significant and construction activity at the parking area should be accompanied by a program of archaeological monitoring to confirm the presence or absence of these potential historic resources. Evaluation and treatment of identified resources should then take place in accordance with Stipulation II.7 of the Draft Programmatic Agreement. The northern edge of the Englewood Hospital and Medical Center property is adjacent to the Brookdale Cemetery; thus the area in the vicinity of the existing parking deck is an area of archaeological sensitivity. Construction in the area may possibly impact unmarked human burials. It is recommended that this issue be addressed through the provisions of the Draft Programmatic Agreement for the discovery of human skeletal remains (II.6) and unanticipated discovery (II.7), including clear annotations and directions on construction plans.

Further investigation of archeologically sensitive areas would be performed once Final Design and Engineering is completed for the project. At that time, limits of construction disturbance would be established in order to minimize or avoid potential impacts to intact archeological resources, if any are determined to exist.

*Mitigation* – The possible adverse effects from noise, vibration, and air quality during construction would be mitigated through the use of specific equipment, including concrete cutters rather than pavement breakers; proper maintenance of construction equipment mufflers; installation of temporary noise barriers; and rerouting of heavy equipment and truck movements, where practical and necessary. Additional vibration mitigation could include the use of pre-auguring and pre-cutting pavement prior to pile driving; alternate pile driving methods including hydraulic insertion; use of dampeners on machinery that typically vibrates; and field monitoring of vibration levels during construction near vibration-sensitive buildings.

In the event the previously non-recorded archaeological resources are encountered during construction, all such activities would halt in the subject area pending investigation and review by the accredited project archaeologist. Upon the archaeologist's consultation with SHPO construction activities may resume as modified by the results of such consultation.

#### 27.4. Summary of Potential Environmental Impacts

Construction activities would result in short term impacts that would cease with the completion of the activity and differ from the impacts described in the DEIS in terms of the number of parking deck facilities requiring excavation and potential construction-phase impacts to the Bergen Equestrian Center and Englewood Hospital and Medical Center. Existing regulations, procedures, and best management practices would mitigate the potential for adverse effects arising during the construction of the more intensive development initiatives (parking decks and similar), while coordination with the management of the Bergen Equestrian Center would mitigate construction phase impacts on the center's operations. Table 27-1 summarizes the construction impacts.

**Table 27-1: Summary of Construction Impacts**

<b>Construction Impact</b>	<b>Mitigation</b>
<b>Land Use:</b> areas used for construction staging would be the areas proposed for station parking, as well as the rail right-of-way.	Pedestrian and vehicular access management plans, construction and movement of debris during approved time intervals, and utilization of construction equipment that would attenuate the imposition of noise and air quality impacts to neighboring land uses.
<b>Community Facilities:</b> temporary road closures and resulting impacts on the circulation of traffic and user access to existing facilities.	Construction management plan to ensure that the flow of vehicular and pedestrian traffic remains relatively unimpeded, pedestrian and vehicular access management plans for existing facilities, coordination with local school districts to develop safe alternate routes to schools, and advance notice and access given to emergency providers.
<b>Parkland, Open Space, and Recreational Resources:</b> temporary detours of vehicular and pedestrian traffic that uses roadways that would be temporarily closed to accommodate construction activity, relocation of a transmission line within Overpeck County Park.	Construction management plan to ensure that the flow of vehicular and pedestrian traffic remains relatively unimpeded. PSE&G would secure permits and develop construction and mitigation plans should the relocation of the power line disturb parkland, open space, and recreational resources. Special consideration and coordination will be undertaken to minimize impacts to the Bergen Equestrian Center.

**Table 27-1: Summary of Construction Impacts (continued)**

<b>Construction Impact</b>	<b>Mitigation</b>
<b>Utilities:</b> relocation of an existing high voltage underground transmission line owned by PSE&G, resulting in some road construction and some potential disruption to parkland in Overpeck Park.	PSE&G is responsible for securing permits and developing construction and mitigation plans should the relocation disrupt community facilities or circulation. Following the completion of construction, disturbed park areas will be restored to their pre-construction condition.
<b>Traffic and Parking:</b> temporary detours and loss of parking due to grade crossing closures and staging areas.	Coordination between NJ TRANSIT and CSX, NYS&W, NJDOT, and local governments to plan, schedule, and stage proposed construction activities, and the development and implementation of a Maintenance and Protection of Traffic (MPT) plan.
<b>Transit and Freight:</b> temporary detours of bus service for routes that use roadways temporarily closed for construction activity and temporary adjustment of freight operations.	Coordination between NJ TRANSIT, bus services, NYS&W, and CSX to minimize disruptions. Publishing and distribution of schedule/route changes in paper and on NJ TRANSIT website.
<b>Air Quality:</b> short-term, increased fugitive dust and mobile source emissions.	Application of water or other soluble moisture-retaining agents to dirt areas, cleaning construction equipment and adjacent paved areas, covering haul trucks carrying loose materials, use of clean fuels and deployment of clean diesel construction equipment, and implementation of anti-idling practices at construction sites.
<b>Noise and Vibration:</b> temporary noise and vibration impacts.	Contract specifications would be developed prior to project implementation to address construction actions. Specifications could include the use of temporary sound walls, alternative construction methods or equipment, pre-auguring /pre-cutting pavement, alternative pile driving methods, and/or the use of dampeners. Special consideration and coordination will be undertaken to minimize impacts to the Bergen Equestrian Center.
<b>Water Quality:</b> soil erosion, sedimentation, and potential contamination of groundwater.	Issuance of Construction Activities General Stormwater Permits and Stormwater Pollution Prevention Plan, implementation of BMPs, temporary dewatering, and maintenance of construction equipment to avoid leakages or spills of contaminating materials.
<b>Wetlands:</b> temporary disturbance resulting from regulated activities within the wetlands that must be permanently discontinued within six months of initiation and are reversible.	Temporary signs and fences, erosion and sediment control measures, spill prevention plans, cautious construction staging, and restricting washing activities to areas distant from wetlands.
<b>Floodplains:</b> temporary disturbance of floodplain areas is possible during replacement or rehabilitation activities of rail crossings over streams along the corridor.	Using structures to cross floodplains instead of filling them, providing adequate flow circulation, reducing grading requirements and preserving natural drainage where possible.
<b>Vegetation and Wildlife:</b> Possible disturbance or destruction of minimal areas of vegetation, including wetlands, and temporary increase of both noise and dust.	Cautious staging and construction practices in areas where mature vegetation and potential fish and wildlife habitats are present and seasonal restrictions on tree clearing.

**Table 27-1: Summary of Construction Impacts (continued)**

<b>Construction Impact</b>	<b>Mitigation</b>
<b>Hazardous Materials:</b> potential disturbance of contaminated materials on contaminated sites.	Complete Phase I Environmental Site Assessment (ESA) during Final Design and Engineering, potentially followed up by Phase II testing, where necessary, to confirm the presence or absence of hazardous materials. Remediation efforts should hazardous materials be identified on-site. BMPs to ensure hazardous materials do not migrate from a construction site.
<b>Safety and Security:</b> impacts to freight operations during construction and construction worker and rail operator safety.	Fencing and signage, safety training for contractors, safety guidelines incorporated into their construction plans and procedures, and coordination with local freight and municipal life safety services prior to the initiation of any activities.
<b>Historic and Archaeological Resources:</b> short-term, intermittent, construction-generated noise, vibration, and fugitive dust.	Use and maintenance of specific equipment and noise/vibration dampeners, installation of temporary noise barriers, alternative construction methods, field monitoring of vibration levels, applying water or other soluble moisture-retaining agents to dirt areas, cleaning construction equipment and adjacent paved areas, covering haul trucks carrying loose materials, and treating materials likely to become airborne and contribute to air pollution if left untreated. Establishing staging areas away from the resources and establishing truck routes that do not pass by the resource. In the event that previously non-recorded archaeological resources are encountered during construction, activities would halt in the subject area pending investigation and review by the accredited project archaeologist and consultation with SHPO.

Source: Jacobs, 2015.