



## **5.0 Regulatory Compliance**

### **5.1 Freshwater Wetlands Protection Act Rules (N.J.A.C. 7:7A)**

Due to the size and number of components that pertain to the proposed Compressor Station 203, the Project will require an Individual Permit issued under the NJ FWPA Rules to conduct regulated activities within areas subject to jurisdiction under the NJ FWPA and Rules. The following sections discuss the Project's compliance with the NJ FWPA Rules.

#### **5.1.1 Alternatives (N.J.A.C. 7:7A-7.2(b)1)**

Under the standard requirements for issuance of an individual permit to conduct a regulated activity, the applicant must demonstrate that there is no practicable alternative which would have a less adverse impact on the aquatic ecosystem or would not involve a freshwater wetland or State open water, and would not have other significant adverse environmental consequences (i.e., it shall not merely substitute other significant environmental consequences for those attendant on the original proposal). Transco has included a discussion of alternatives that demonstrates compliance with the requirements at N.J.A.C. 7:7A-7.2(b)1 in Section 7.0 below.

#### **5.1.2 Impact Minimization (N.J.A.C. 7:7A-7.2(b)2)**

The proposed Project facility layout, station piping and electrical conduit alignment and construction methodologies have been specifically analyzed and developed to minimize adverse impacts to sensitive environmental resources to the maximum extent practicable, while still allowing for construction and operation of the Project facilities.

#### **5.1.3 Threatened and Endangered Species (N.J.A.C. 7:7A-7.2(b)3 & 4)**

Habitat assessments, species specific surveys, and agency consultation for the Project has determined it will not result in impacts to habitat for documented occurrences of federal and state threatened and endangered species. Transco has consulted with the applicable agencies that regulate these wildlife resources and has conducted the necessary field surveys, as well as incorporated mitigation measures into the proposed Project construction procedures to prevent adverse impacts to any sensitive species and their specified habitats. Please see Section 4.6 of this narrative for detailed Project discussion relative to threatened and endangered species, and copies of agency correspondence are located within Section 4 of this permit application.

#### **5.1.4 Water Quality (N.J.A.C. 7:7A-7.2(b)5, 8 & 14) and Water Pollution (N.J.A.C. 7:7A-7.2(b)6 & 13)**

The NJDEP administers the Statewide Water Quality Management (WQM) Planning rules, N.J.A.C. 7:15 in conjunction with the Statewide WQM Plan, which together constitute the Continuing Planning Process conducted pursuant to the Water Quality Planning Act (N.J.S.A. 58:11A-1 et seq.), the Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq., and N.J.S.A. 13:1D-1 et seq.), and as required by Sections 303(e) and 208 of the Federal Clean Water Act (CWA) (33 U.S.C. 1251 et seq.). According to these rules, the Commissioner of the NJDEP shall not undertake, or authorize through the issuance of a permit, any project or activity that affects water quality and conflicts with the applicable sections of adopted WQM Plans or the Statewide WQM Planning rules. The existing rules establish a mechanism for the determination of consistency between proposed projects or activities requiring departmentally issued



permits and the WQM Plans (NJDEP 2008). Transco submitted a Highlands Applicability and WQM Plan Consistency Application in March 2009.

During construction, Transco will implement its Spill Prevention, Containment and Countermeasure Plan; (See Appendix 3) to minimize impacts to water quality. Additionally, Transco will implement the Erosion and Sedimentation Control Plan designed for the Project as approved by the local Burlington County Soil Conservation District. Following construction of the station piping and electrical conduit and all temporary ground disturbances associated with the above-ground facilities, restoration will be completed that the areas returned to their preconstruction state. All material permanently installed onsite for construction of Compressor Station 203, Chesterfield M&R, electrical substation, and the associated valve site shall be free of toxic pollutants and operations of the facilities will not violate any applicable toxic effluent standards.

Proposed Compressor Station 203 will require a tie-in into the local potable water supply from the Burlington City Water Department Water Source Area and the proposed water use will be approximately 1,200 gallons per day (gpd). The facility will require an onsite specific for sanitary wastewater discharges as the property is located outside the sewer service area. The proposed wastewater input for the facility will be approximately 350 gpd. The proposed Compressor Station 203 and electrical substation are not defined as industrial facilities by NJDEP and will not generate industrial wastewater, and therefore do not require a New Jersey Pollutant Discharge Elimination System (NJPDES) permit. In addition, the Project will not require an onsite wastewater treatment facility nor will it require groundwater or surface water for operation. Per coordination with NJDEP Office of Water Resources Management Coordination, since the site will not require a NJPDES permit, is located outside the service area, and will not discharge over 2,000 gpd of wastewater a Water Quality Consistency Determination review is not required.

#### **5.1.5 Marine Resources (N.J.A.C. 7:7A-7.2(b)7)**

The proposed Project is not located in or near any marine sanctuaries; therefore, no adverse impacts to marine resources is associated with the proposed Project, which complies with N.J.A.C 7:7A-7.2(b) 7.

#### **5.1.6 Historic and Cultural Resources (N.J.A.C. 7:7A-7.2(b)9)**

Transco has consulted with the New Jersey HPO and conducted extensive field surveys to identify significant historic and/or cultural resources potentially present in the vicinity of the Project. A detailed discussion of these resources has been included in Section 4.7 of this narrative.

#### **5.1.7 Flood Hazard Area Control Act (N.J.A.C. 7:7A-7.2(b)10)**

A section detailing the Project's compliance with the FHACA and Rules has been included in Section 5.2 below.

#### **5.1.8 Lawful Activities (N.J.A.C. 7:7A-7.2(b)11)**

Construction and operation of the Project facilities is a lawful activity and will be conducted in accordance with all applicable federal and state statutory and regulatory frameworks.

#### **5.1.9 Public Convenience & Necessity (N.J.A.C. 7:7A-7.2(b)12)**

The purpose and need for the Project was discussed in Section 1.1 of this narrative and identified the public need that will be fulfilled by the Project, justifying the public interest served by the Project and its overall economic value to the public relative to the environmental impacts associated with the Project.



The Project is currently undergoing review by the FERC for a determination and issuance of a certificate of public convenience and necessity.

#### **5.1.10 Stormwater Management (N.J.A.C 7:7A-7.2(b)15)**

The Garden State Expansion Project constitutes a "Major Development" in that Project activities will result in the disturbance of more than one acre of land and introduce over one quarter acre of impervious cover. In accordance with N.J.A.C. 7:7A-2.11, the proposed activities will comply with the Stormwater Management rules at N.J.A.C. 7:8. Section 7 of the permit application includes a Stormwater Engineering Report and supporting drawings, showing the Project's proposed permanent stormwater devices and demonstrating compliance with the groundwater recharge, stormwater runoff quantity and stormwater runoff quality requirements at N.J.A.C. 7:8. In addition, temporary erosion control methods will be implemented in accordance with Transco's SESCO which will be reviewed and approved by the Burlington County Soil Conservation District.

#### **5.1.11 Additional Requirements for a Non Water-Dependent Activity in a Wetland or Special Aquatic Site (N.J.A.C 7:7A-7.4)**

The proposed Project does not qualify as a water dependent activity as defined under N.J.A.C. 7:7A-1.4. In addition to meeting the requirements of N.J.A.C. 7:7A-7.2, a non water-dependent activity in a freshwater wetland or special aquatic site shall meet the requirements of N.J.A.C 7:7A-7.4(c).

Relative to alternative sites for the Project in the general region that would avoid or reduce the adverse impact on an aquatic ecosystem (N.J.A.C 7:7A-7.4(c)1), the customer for the Project, NJNG, has executed a Precedent Agreement that specifies an overall location for an existing delivery point on the Transco system Line. The Project purpose and need is identified in Section 1.1 of this narrative. Impacts to aquatic ecosystems have been minimized to the maximum extent practicable through selecting properties that site the facility in an area that minimizes impacts to the overall populous as well on properties that have been historically used for farming, therefore minimizing forested impacts, as well as through implementation of Transco's SESCO and other mitigation measures proposed for the Project in Section 6.0 below.

Relative to reductions in the size, scope, configuration, density or design (N.J.A.C 7:7A-7.4(c)2 & 3) of the Project, the proposed size, location and configuration of the Project includes the minimum amount of additional facilities necessary to meet the Precedent Agreement with the customer, while minimizing impacts to the environment and aquatic ecosystems. A reduction in the Project scale would not provide the necessary capacity needed to deliver the specified volume to the customer and would not meet the Project purpose and need. Transco has conducted a study of pipeline looping options, new compression options, modifications to existing compression options, and combinations of compression and pipeline looping options to meet the Project purpose. This alternatives analysis allowed Project designers to select the best configuration of proposed facilities to meet the needs of the market. Alternative sites considered, were determined to increase impacts to residential areas, wetlands and waterbodies, or to transfer impacts to a different area. Impacts to aquatic ecosystems have been minimized through implementation of Transco's SESCO and other mitigation measures proposed for the Project in Section 6.0 below.

Requirements under N.J.A.C 7:7A-7.4(c)4 require that the applicant demonstrate reasonable attempts to remove or accommodate constraints that ultimately lead to the rejection of potential project alternatives. Transco used the following evaluation criteria when selecting reasonable and potentially environmentally preferable system alternatives to the Project: Technical and economic feasibility and practicality; extent of



environmental impacts; and ability to meet the Project objective to satisfy increased demand for natural gas in the time frame requested by the customer, given that alternative energy sources or conservation are not able to satisfy this demand. The location for the proposed Project was chosen for its proximity to Transco's Trenton-Woodbury Lateral, the PSE&G powerline infrastructure, to some degree the location of the proposed NJNG lateral, and its minimal impact to the surrounding environment and neighborhoods. Other alternatives considered were rejected due to increased land, environmental, and/or residential impacts. As discussed below in Section 7.0, installing additional looping and locating a new ROW would significantly increase impacts to previously undisturbed wetlands and waterbodies, as well as increasing impacts to landowners.

Compliance with the requirements at N.J.A.C. 7:7A-7.4(c)5 are detailed in Section 5.1.5 below.

Relative to the Project, the FERC approves the construction and operation of interstate natural gas facilities only after it determines that such construction and operation, based on information presented by a project sponsor in a certificate application, is a public convenience and necessity, pursuant to Section 7(c) of the Natural Gas Act (NGA). The Project as proposed will provide firm transportation for 180,000 dth/day of natural gas to feed NJNG's proposed new lateral that it will build from the new delivery point on Transco's Trenton-Woodbury Lateral. The Project would provide system resiliency, service reliability, and operating flexibility for NJNG's system (see Section 1.1 for a detailed description of the Project Purpose and Need). While other natural gas pipeline projects may be underway in the region, each Project is approved by the FERC based on a public need that is not being met by any other existing infrastructure or approved Project. Impacts to freshwater wetlands have been minimized to the greatest extent possible through a number of specialized construction procedures including dry-crossing techniques, construction timing restrictions relative to coldwater fish species habitat and behavioral requirements, limiting of the ROW width within wetlands, and post-construction restoration of wetlands and waterbodies, as well as implementation of Transco's SESC and other mitigation measures proposed for the Project in Section 6.0 below.

#### **5.1.12 Description of Fill Material (Checklist Item 20)**

Construction of the proposed valve site and electrical substation will require installation of fill material within wetlands in order to construct these Project components. The following details the approximate amounts and materials:

##### Valve Site:

- Gravel = 265 cubic yards
- Dirt/Soil Fill = 2,178 cubic yards

##### Electrical Substation and Access Road:

- Crushed gravel = 1965 cubic yards (this includes limestone surfacing, the aggregate for the interior substation drive paths, and the base material for the gravel road)
- Asphalt = 660 cubic yards
- Imported fill (soil)= 6,625 cy



## **5.2 Flood Hazard Area Control Act Rules (N.J.A.C. 7:13)**

The purpose of the Flood Hazard Area Control Act (FHACA; N.J.S.A. 58:16A et seq.) is to minimize damage to life and property from flooding caused by development within fluvial and tidal flood hazard areas, to preserve quality of surface waters, and to protect the wildlife and vegetation that exist within and depend on such areas for sustenance and habitat.

No person shall engage in a regulated activity in a regulated area without a Flood Hazard Area Permit (FHAP) as required by the FHACA Rules (N.J.A.C. 7:13). Each distinct construction activity in a Project is considered an explicit regulated activity. The sections below detail the applicable Flood Hazard Area Control Act rules relative to the proposed Project and include a discussion regarding the Project's compliance with the applicable rules.

### **5.2.1 Regulated Activities (N.J.A.C. 7:13-2.4)**

The Project consists of installing an electric driven compressor station along with an electrical substation, M&R station, station piping, valve site, and radio tower. The proposed Project would involve temporary disturbance to two intermittent drainages, and clearing and/or removal of riparian vegetation. Therefore, the proposed Project constitutes a regulated activity under N.J.A.C. 7:13-2.4(a)1, 2, 3, 4, and 5. The Project as designed will not impact any flood hazard areas and impacts will only be to areas of riparian zone situated within the limits of the Project footprint.

### **5.2.2 Hardship Exception for an Individual Permit (N.J.A.C. 7:13-9.8)**

Transco is requesting a hardship exception from the NJDEP under N.J.A.C. 7:13-9.8 for the individual permit application for the Project submitted under FHACA Rules. As it relates to N.J.A.C. 7:13-9.8(a), Transco asserts that while the Project cannot comply with certain requirements of N.J.A.C. 7:13-10 and 11, the Project substantially complies with the FHACA Rules and that Transco's proposed mitigation measures, including implementation of their SESC during construction and providing compensation at a ratio of two-to-one for impacts to the riparian zone above specified disturbance limits, will not compromise the reasonable requirements of public health, safety and welfare, or the environment as required under N.J.A.C. 7:13-9.8(a)1.

Additionally, Transco believes the above referenced mitigation measures provide a sufficiently equal protection to the public health, safety and welfare and the environment, as those requirements provided in the FHACA Rules. Transco's proposed mitigation measures developed for the Project have been designed to comply with all applicable federal and state environmental requirements to the maximum extent practicable, while allowing for an economically and logistically viable construction methodology for construction of a compressor station. Following a full review and understanding of the documents included with this individual permit application, Transco trusts that the NJDEP will agree that the measures proposed by Transco provide a sufficiently equal protection to the public health, safety and welfare and the environment as required under N.J.A.C. 7:13-9.8(a)3.

Given the siting requirements and limitations of proposed Compressor Station 203, and the measures taken to avoid encroaching into adjacent forested wetlands, compliance with all requirements under N.J.A.C. 7:13, specifically the maximum allowable disturbance limits to the riparian zone vegetation (N.J.A.C. 7:13-10.2(d) – Table C), is not feasible for the proposed Station (r) of 1,000 square feet, which includes stormwater discharge (j). The FERC encourages co-locating new facilities to the maximum extent practical, thereby creating utility corridors and minimizing impacts to the natural landscape, wildlife and their habitat, as well as affected landowners. Transco has sited proposed Station 203 near existing



linear corridors including the New Jersey Turnpike, Colonial and Sunoco pipelines, and as necessary adjacent to the PSE&G powerline and Transco's existing Trenton-Woodbury pipeline. Transco has designed the facility to avoid impacts to floodways or flood fringe and will only impact associated riparian zone. Transco has strived to work within the confines of open land with a historical farming land use, and avoided siting the Project entirely within undeveloped forested property and near developed areas. In this regard, the Project certainly satisfies the requirements under N.J.A.C. 7:13-9.8(b)1.

Transco is also requesting a Hardship Waiver to N.J.A.C. 7:13-10.2(j)2 regarding the location of one proposed stormwater sand filter outfall associated with the Station 203 facility. The proposed outfall is situated within the 50 foot riparian zone of stream S-BU-003; however this waterway is not designated Category One water or considered a Special Water Resource Protection Area. Again, by virtue of siting Station 203 to avoid and minimize impacts to adjacent forested wetland; the only location available for the proposed permanent stormwater device was within the 50 foot riparian zone.

The Project complies with the requirements under N.J.A.C. 7:13-9.8(b)2 and will not adversely affect the use of contiguous or nearby property. Short-term impacts associated with construction of the facilities may temporarily affect nearby or contiguous properties from a nuisance standpoint relative to increased traffic and noise from construction equipment or temporary visual impacts due to vegetation clearing; however no long-term impacts to those properties will result from regular operation and maintenance of the Project.

The Project does not pose a threat to the environment, or to public health, safety or welfare, and satisfies the requirement under N.J.A.C. 7:13-9.8(b)3. Transco has developed appropriate mitigation measures for implementation during construction, as well as operation and maintenance of the Project facilities to prevent, minimize, and mitigate any potential adverse impacts to the environment. Oversight of Project construction by environmental inspectors employed by the applicant as well as a third party monitor(s) assigned by and responsible to the FERC provide a mechanism for assuring implementation of the mitigation measures specifically developed for the Project, and for monitoring and enforcement and environmental conditions imposed by federal and state regulatory agencies. Additionally, safety standards associated with natural gas pipeline facilities are imposed and regulated by the USDOT to prevent threats to public health, safety and welfare, and are implemented at all levels of facility construction through physical oversight and testing of quality control of the facilities – from initial testing and monitoring of quality control standards, to hydrostatic pressure testing of the station piping to ensure the facilities have properly constructed and are capable of withstanding internal pressures well in excess of the designed maximum allowable operating pressure for the facilities.

The Project is compliant with the requirements of N.J.A.C. 7:13-9.8(b)4. The hardship was not created by the action or inaction of the applicant or its agents. Transco is seeking to fulfill a demonstrated demand for diversified energy resources in the northeast U.S. through installation of appropriate facilities in an efficient and cost effective manner that will allow for delivery of natural gas supplies at a competitive price. The proposed facilities have been designed to satisfy the objectives of the Project and market demand, while complying with all applicable federal and state regulations to the maximum extent practicable given the nature of linear utilities development.



### **5.2.3 Individual Permit Requirements Within Various Regulated Areas (N.J.A.C. 7:13-10)**

This section demonstrates the compliance relative to the Flood Hazard Area Control Act and Rules for specific regulated activities that would be necessary as a result of the proposed Project. These activities include work proposed in riparian zones.

#### **5.2.3.1 Requirements for a Regulated Activity in a Riparian Zone (N.J.A.C 7:13-10.2)**

Proposed temporary and permanent impacts to the riparian zones associated with the one regulated channels situated within proximity the proposed Project footprint are shown on the permit drawings located in Section 9 and quantified in Table 4.2-3. A total of 0.003 acres of upland herbaceous riparian zone will be permanently impacted and filled during construction and operation, and approximately 0.066 acres of permanent forested upland riparian zone vegetation will be impacted due to conversion to maintained grass. Temporary riparian zone impacts will be restored through restoration of pre-construction elevations and contours as well as re-vegetation with native, indigenous species in accordance with N.J.A.C 7:13-10.2(u).

The Project will exceed the maximum allowable temporary impacts to individual riparian zones specified in N.J.A.C. 7:13-10.2(d) Table C, however the Project as it relates to a facility complies with the requirements set forth under N.J.A.C 7:13-10.2(r)2, 3 & 4. Table 4.2-3 identifies temporary and permanent impacts to riparian zones associated with the permanent stormwater infiltration basin associated with Station 203 in the vicinity of stream S-BU-003. Transco is requesting a hardship exception under N.J.A.C. 7:13-9.8, which is discussed in Section 5.2.2. In accordance with the requirements at N.J.A.C. 7:13-10.2(s), Transco shall provide the required ratio of compensation for impacts to the riparian zone in excess of the regulatory limits as mitigation. Additionally, Transco has provided a Draft Mitigation Plan in Section 10 for preliminary review and comment by the NJDEP that details the proposed mitigation replanting plans and specifications.

#### **5.2.3.2 Requirements for a Regulated Activity in a Floodway and Flood Fringe (N.J.A.C. 7:13-10.3 & 10.4)**

Transco completed a Method 6 FHA determination of the two streams located onsite to determine their floodway and flood fringe. The supporting engineering report is located within Section 6 of this permit application. The Method 6 review and calculations determined that stream S-BU-001 does not drain greater than 50 acres and therefore do not have a designated floodway and/or flood fringe and is only regulated under N.J.A.C 7:13-10.2 for riparian zone. Regardless, the proposed Project will not impact S-BU-001 or its associated riparian zone. The floodway and flood fringe for Sucker Run (S-BU-003) was determined and is indicated on the submitted FHA permit drawings in Section 9. The Project has been designed to stay outside the limits of the New Jersey design flood fringe. Therefore, as currently designed, the proposed Project does not impact those regulated areas detailed within N.J.A.C. 7:13-10.3 and 10.4.

#### **5.2.3.3 Requirements for a Regulated Activity In or Along a Water with Fishery Resources (N.J.A.C. 7:13-10.5)**

Table 4.2-1 identifies the two streams associated with proposed Compressor Station 203, and the fishery classification of the identified streams. Fishery classifications were determined through review of the New Jersey Water Quality Standards (N.J.A.C. 7:9B). Both drainages are classified as Non-Trout waters. As detailed above, construction of the Project will only result in any instream impacts.



In accordance with N.J.A.C. 7:13-10.5(d), any construction, grading or excavation within the riparian zone necessary within the restricted time periods will be mitigated through implementation and installation of appropriate soil erosion and sediment control measures to prevent sediment from reaching the channel. Erosion and sedimentation control measures will be in place regardless of the time period during which construction is conducted and will meet the Standards for Soil Erosion and Sediment Control in New Jersey (N.J.A.C. 2:90). Additionally, Transco will submit a Soil Erosion and Sediment Control Plan to the Burlington County Conservation District and will implement measures outlined in the approved plan.

#### **5.2.3.4 Requirements for a Regulated Activity in a Documented Habitat for Threatened or Endangered Species (N.J.A.C. 7:13-10.6)**

Transco has conducted formal consultations with the USFWS and the NJ NHP which is charged with managing state-listed rare, threatened, endangered, or special concern species. As detailed in Section 4.6 USFWS has concurred with the negative bog turtle habitat findings and has provided clearance for northern long-eared bat with agreement to adhere to winter tree clearing. However, Transco completed a summer bat survey and did not capture northern long-eared or Indiana bats and has submitted the findings to USFWS. Since no federally listed bat species were captured, Transco will request that activities can occur outside the proposed timing restriction. Transco will forward any USFWS correspondence once received. Only one state listed species, blue heron, was identified for the site which does not support the necessary foraging or breeding habitat. Biological assessments and summaries of the threatened or endangered species known to occur in the Project have been included in Section 4.6 of this project narrative and all agency correspondence is located in Section 4 of this permit application. The Bog Turtle Statement required under Line Item 23 of the Application Checklist for an Individual Freshwater Wetlands Permit has been included in Section 2 Attachment D.

#### **5.2.3.5 Requirements for a Regulated Activity in an Area with Acid Producing Soils (N.J.A.C. 7:13-10.7)**

The geologic units in the New Jersey Coastal Plain which are capable of producing acid conditions in the soil included the Raritan, Magothy, Merchantville, Woodbury, Englishtown, Marshalltown, Navesink, Red Bank and Kirkwood Formations. Station 205 is not located on acid producing soils. The Project area for Station 203 and the Chesterfield M&R station are located on the Woodbury formation, an acid producing soil (NJGS 2009). To date Transco has completed soil testing onsite per the requirements of the 2008 Technical Manual and determined the potential for acid producing soils at a shallow depth in the area of the proposed electrical substation and at much deeper depths (7 feet and 9-10 feet) in the area of the Compressor Station and Chesterfield M&R. Refer to Appendix 4 for a figure detailing the location of the soil samples collected for acid producing soil testing and the supporting lab results.

To date under the NJDEP LOI review it has been determined that regulated channels are not present on the electrical substation property, rather vegetated wetland swales, and therefore no riparian zones are present in this portion of the Project area. Regarding proposed Compressor Station 203 and Chesterfield Meter Station, adjacent to stream S-BU-003, Transco reviewed the proposed construction activities that would occur within the limits of an assumed 150 foot riparian zone to determine the likelihood of completing work at a depth that would have the potential to uncover acid producing soils. This review determined, that only road paving, fence installation and installation of the stormwater basin would occur within this area and none will result in activities below 2.5 feet, whereas testing in this area determined acid producing soils are present at a depth of 7 feet and deeper. All earth work associated with construction of the Chesterfield Meter Station will occur outside the limits of a 150 foot riparian zone. Therefore, due to the nature of the construction activities and the minimal grading that will occur within the limits of a proposed 50 foot riparian zone, Transco is requesting this appropriate width since activities





will not interfere with acid producing soils at the depths where they are present. While soil samples were not completed within the limits of the proposed stormwater basin, as vegetation clearing would have been necessary to complete testing within the wooded riparian zone thus triggering a FHA Permit, Transco expects that the depth of potential acid producing soils would be the same in this locale since the basin is within the same soil series as the completed soil samples and in this area excavation will be no greater than 2.5 feet.

Transco will coordinate with the Burlington County Soil Conservation District to review and approve the necessary steps needed when working outside riparian zones but within areas with the potential for acid producing soils.

### **Individual Permit Requirements for Various Regulated Activities (N.J.A.C. 7:13-11)**

The following details Transco's compliance with N.J.A.C. 7:13-11 for the construction and operation of the Garden State Expansion Project. The Project as designed will not impact any flood hazard areas and impacts will only be to areas of riparian zone situated within the limits of the Project footprint.

#### **5.2.3.6 Requirements that Apply to All Regulated Activities (N.J.A.C. 7:13-11.1)**

In accordance with N.J.A.C. 7:13-11.1(c), (d) and (e), Transco shall obtain all necessary approvals and permits for regulated activities associated with the Project under the jurisdiction of the local Soil Conservation District, including the NJ Pollution Discharge Elimination System (NJPDES) General Permit for Stormwater Discharge Associated with Construction Activity (Permit No. NJG0088323). Additionally, Transco's SESC developed for the Project substantially complies with the soil erosion and sediment control standards, as specified in the Standards for Soil Erosion and Sediment Control in New Jersey at N.J.A.C. 2:90.

Aside from two properties traversed by the station piping and electrical conduits, one owned by PSE&G and one by Bordentown Township, the proposed Project will occur on properties that are owned in fee by Transco. In compliance with requirements at N.J.A.C. 7:13-9.2(f), Transco, as the applicant, will be obtaining appropriate temporary and permanent easements on the two properties it does not own such that the easements will encompass the entire area that will be impacted by the proposed Project.

#### **5.2.3.7 Requirements for Stormwater Management (N.J.A.C. 7:13-11.2)**

The Garden State Expansion Project constitutes a "Major Development" in that Project activities will result in the disturbance of more than one acre of land and introduce over one quarter acre of impervious cover. In accordance with N.J.A.C. 7:7A-2.11, the proposed activities will comply with the Stormwater Management rules at N.J.A.C. 7:8. Section 7 of the permit application includes a Stormwater Engineering Report and supporting drawings, showing the Project's proposed permanent stormwater devices and demonstrating compliance with the groundwater recharge, stormwater runoff quantity and stormwater runoff quality requirements at N.J.A.C. 7:8. In addition, temporary erosion control methods will be implemented in accordance with Transco's SESC which will be reviewed and approved by the Burlington County Soil Conservation District. The proposed Project does not consist of any permanent stormwater management devices, such as a stormwater basin, within the limits of a flood hazard area.

#### **5.2.3.8 Requirements for Excavation, Fill and Grading Activities (N.J.A.C. 7:13-11.3)**

Construction activities associated with the proposed permanent stormwater device will require excavation, fill and grading activities within the limits of a riparian zone. The proposed actions will not adversely impact the overland flow of stormwater and the facilities are situated outside the limits of any



mapped flood fringe or floodway. The site has been designed in accordance with the Stormwater Management Rules N.J.A.C. 7:8 as demonstrated in Section 7 of this permit application.

**5.2.3.9 Requirements for a Structure (N.J.A.C. 7:13-11.4)**

No structures associated with the Garden State Expansion Project will be installed within the limits of a riparian zone or a flood hazard area; therefore, they will not be susceptible to the flood hazard area design flood requirements.



## 6.0 Mitigation

Transco has developed procedural measures for implementation during and after Project construction to avoid, minimize, and mitigate adverse impacts potentially resulting from Project construction. These measures include development of Transco's SESCP for implementation during construction, as well as development of a Draft Mitigation Plan for temporary impacts to freshwater wetlands and riparian zones. The draft Mitigation Plan has been included for review in Section 10 of this permit application. This section summarizes mitigation techniques Transco will implement for environmental resources including wetlands, migratory birds, and soils.

### 6.1 Riparian Zones

A total of 0.003 acres of permanent upland herbaceous riparian zone fill and 0.066 acres of permanent upland forested riparian zone conversion will result from the proposed construction activities. The portion of forested permanent conversion will be restored to upland herbaceous and maintained as such for the life of the Project. This area will be reseeded with a riparian zone seed mix and post-construction, the disturbed area will be monitored to ensure long-term stabilization of the site.

### 6.2 Wetlands

A total of 6.239 acres of wetland disturbance will result from the proposed construction activities. Of the wetland disturbance, approximately 0.516 acres of PFO wetland will be permanently maintained in an herbaceous or scrub-shrub vegetation cover type, a total of 2.753 acres of PEM wetland will be permanently filled for construction of the proposed electrical substation and valve site, and approximately 2.969 acres of PEM wetland will be temporarily impacted within the limits of the station piping and electrical conduit and portion of the electrical substation.

To minimize impacts to wetlands, Transco will implement the wetland construction procedures detailed within Section 3.1.12.1. In forested wetlands, Transco will minimize tree clearing to the maximum extent practicable while maintaining safe construction conditions.

Access within the ROW across wetlands will only be permitted where soils are non-saturated and able to support construction equipment at the time of crossing, during frozen soil conditions (for winter tree clearing) or with the use of timber mats to avoid rutting of the wetland soil. If mats are not used, the EI will record the pre- and post-construction soil density using a penetrometer to determine if the soil has been inadvertently compacted during construction or access. If the soils have been found to be compacted, de-compaction of the soil will be conducted using a harrow, paraplow, paratill or other equipment. Deep subsoil shattering shall be performed with a subsoiler tool having angled legs. Impacts to wetlands will be minimized by segregating the top 12 inches of soil from the area disturbed by trenching activities, except in super saturated areas or when soils are frozen. The topsoil will be restored to its original location immediately after backfilling is complete, to preserve the wetlands existing seedbank and promote revegetation of the disturbed area. Seed mixes spread on the restored topsoil for temporary stabilization will include annual rye-grass at a rate of 40 pounds per acre (unless standing water is present) or appropriate mixes as recommended and approved by the county conservation districts. The use of fertilizer in wetlands is not to be permitted. Mulch will only be used within wetlands as required by state agencies or the Burlington Soil Conservation District. Utilizing recommended seed mixes containing native plants will control the import of invasive and/or exotic plant species to the site. Erosion controls including silt fence and/or staked hay bales will also be put in place to protect wetlands from sediment disturbed in adjacent uplands during construction. Post-construction, the disturbed area



will be monitored to ensure long-term stabilization of the site as well as monitoring for potential colonization by invasive vegetation species.

Transco will protect and minimize potential adverse impacts to wetlands by restoring wetlands to their original configurations and contours, by segregating topsoil during excavation, by permanently stabilizing upland areas near wetlands as soon as possible after backfilling, by inspecting the ROW periodically during and after construction, and by repairing any erosion control or restoration features until permanent revegetation is successful. Transco will comply with the applicable permit conditions issued by federal, state, and local permitting agencies.

#### **6.2.1.1 Migratory Birds**

Migratory birds would be expected to occur at least as transients in the proposed Project area throughout most of the year. Transco does not anticipate adverse impacts to migratory bird populations as a result of Project construction and operation. Construction activities may impose a temporary disturbance to foraging, migratory, and nesting activities. However, no long-term impacts are anticipated as result of Project installation and operation. Vegetation clearing may cause a temporary impact to individuals as a result of habitat loss and general disturbance from construction activities. These individuals will vacate a selected breeding/wintering location and expend energy finding an alternate location. However disruption of habitat will be temporary in nature, and the individuals will be able to utilize the area in subsequent seasons post-construction.

Any migratory bird species that solely rely on large, un-fragmented tracts of forested habitat most likely do not utilize the habitat in the vicinity of the Project. Subsequently, no additional impacts to migratory bird populations or behaviors are anticipated as a result of the proposed Project. Transco proposes to complete winter tree clearing, but if not completed during the October 1<sup>st</sup> to March 31<sup>st</sup>, since federally listed bat species were not identified during bat surveys, Transco is requesting from USFWS the ability to clear outside the bat winter clearing window. If clearing occurs after March 31<sup>st</sup>, Transco will complete nest surveys and if not nest are identified will fell trees by non-mechanized means.

### **6.3 Soil**

Temporary soil impacts will be limited to the Project's limits of disturbance during the period of construction and mitigated through implementation of Transco's SESCO. This plan emphasize the use of standard erosion control techniques to reduce the potential of erosion and the use of temporary control measures such as interceptor dikes, rip-rap, or sediment barriers, followed by re-establishment of stabilizing vegetation to minimize erosive impacts. Standard erosion control techniques designed to reduce potential short-term and long-term impacts on soil and water resources include installing, temporary sediment barriers, and topsoil segregation in wetlands.

Additionally, Transco prescribes the use of erosion control devices and construction practices that will minimize erosion during and after construction. During construction, erosion control structures, temporary seeding and revegetation, and erosion control fabrics will be used. After construction is complete, Transco will minimize further erosion by re-grading and reseeding the disturbed areas. Following restoration and clean up, Transco will monitor the disturbed areas to maintain erosion control structures and to repair any developing erosion.

The following are brief descriptions of some of the methods Transco will utilize during construction to minimize impact upon soils:



- minimize the quantity and duration of soil exposure;
- protect critical areas by reducing the velocity of and redirecting runoff;
- install and maintain erosion and sediment control measures;
- reestablish vegetation as soon as possible following final grading; and,
- inspect the disturbed areas and maintain erosion and sediment controls as necessary until final stabilization is achieved.

### **6.3.1 Erosion Control**

Construction will temporarily alter surface drainage and temporarily increase the potential for compaction, erosion, sedimentation, mixing of soil horizons and rutting. The Project will be constructed in a manner that will minimize environmental impacts and conditions specific to the construction area. Transco's objective is to minimize the potential for erosion and sedimentation during construction and to effectively restore disturbed areas. Transco will meet this objective by employing the erosion and sedimentation control measures contained in Transco's SESCO.

The EI is responsible for ensuring that contractors implement and maintain erosion and sediment control measures during construction.

### **6.3.2 Proposed Topsoil Segregation Methods within Wetlands**

Topsoil segregation methods will be used in all temporarily impacted wetlands. Transco will employ the following topsoil segregation techniques:

- Prevent the mixing of topsoil with subsoil by stripping topsoil from either the full work area or from the trench line and subsoil storage area (ditch plus spoil side method);
- Segregate at least 12 inches of topsoil in deep soils with more than 12 inches of topsoil. In soils with less than 12 inches of topsoil, make every effort to segregate the entire topsoil layer;
- Where topsoil segregation is required, maintain separation of salvaged topsoil and subsoil throughout all construction activities;
- For wetlands, segregate the top 12 inches of topsoil within the ditchline, except in areas where standing water is present or soils are saturated or frozen; and
- Never use topsoil for padding, backfill or trench plugs.

### **6.3.3 Revegetation**

In wetlands, the area will be seeded with the seed mix prescribed in Transco's SESCO at 40 lbs/acre (unless standing water is present) to stabilize the area until indigenous wetland species are re-established. Amendments such as fertilizer and lime will not be permitted in wetlands unless otherwise stated. If there are adverse weather conditions, the area will be mulched in accordance with the Burlington County Soil Conservation District's recommendation until reseeded can resume. The



disturbed areas will be seeded within 20 working days of final grading in accordance with recommended seeding dates, weather and soil conditions permitting.

Stabilization of the soil will be necessary until vegetation is established using temporary measures such as mulching, matting, or netting. If construction is completed more than 20 before the seeding season for perennial vegetation, areas adjacent to waterbodies will be mulched with three tons/acre of straw at a minimum of 100 feet on either side.

#### **6.4 Best Management Practices**

NJDEP defines BMPs as "methods, measures, designs, performance standards, maintenance procedures, and other management practices which prevent or reduce adverse impacts upon or pollution of freshwater wetlands, State open waters, and adjacent aquatic habitats. Line Item 14 of the Individual Freshwater Wetlands Permit Application Checklist requires a description of BMPs that the applicant proposes to prevent or reduce the adverse environmental effects of the proposed activity on freshwater wetlands, transition areas, State open waters and adjacent habitats. Included in Section 9 is Transco's proposed BMPs and details to be used during construction of the Project. Transco's SESC will be submitted to the Burlington County Soil Conservation District in compliance with the Soil Erosion and Sediment Control Act Rules (N.J.A.C. 2:90-1) and Transco will adhere to the SESC as approved by the County Soil Conservation District.



## 7.0 Alternatives

This section documents compliance with the NJDEP FWPA Rules, specifically, compliance with N.J.A.C. 7:7A-7.2(b)1 (standard requirements for all individual permits) and 7:7A-7.4 (additional requirements for a non water-dependent activity in a wetland or special aquatic site) of the Freshwater Wetlands Protection Act Rules (N.J.A.C. 7:7A et seq.). These regulations can be summarized by the general statement that the NJDEP will only issue a freshwater wetland permit if the applicant has demonstrated that there is "...no practicable alternative that would have less adverse impact on the aquatic ecosystem or would not involve a freshwater wetland or State open water...". Furthermore, an alternative should be deemed practicable if it is "available and capable of being carried out after taking into consideration cost, existing technology and logistics in light of overall project purposes."

### 7.1 No Action Alternative

Under the no-action alternative, Transco would not construct the proposed Project and would not meet the needs of the Project customer, NJNG. When considering the no-action alternative, it is useful to consider the purpose and need of the Project, as detailed in Section 1.1. The GSE consists of the addition of compression to provide 180,000 dth/day of firm natural gas transportation service to a local gas distribution company, NJNG, to feed its proposed Southern Reliability Link Project. The Southern Reliability Link Project will add a high-pressure natural gas pipeline from the new delivery point on Transco's Trenton-Woodbury-Lateral to NJNG's existing distribution system to support reliability, diversify the supplier base, and support growth in Ocean and Monmouth Counties, New Jersey, in an area that was affected by Hurricane Sandy.

The no-action alternative for the Project would avoid the temporary and permanent environmental impacts associated with construction and operation of the proposed Project. However, the result of the no-action alternative is that the objectives of the Project would not be met. By not constructing the proposed Project, Transco would not have the ability to provide the natural gas transportation service requested by NJNG, which has executed a binding precedent agreement for the Project's capacity. If the no-action alternative is chosen, NJNG's gas distribution system's reliability, resiliency and operating flexibility in the state of New Jersey would not be improved.

The no-action alternative is not a viable alternative since this Project will provide gas supply as needed by NJNG. It is purely speculative to predict the resulting actions that could be taken by another company, including NJNG, and any resulting direct or indirect environmental impacts that would result from those actions taken by other companies, including NJNG, in the event that the no-action alternative were to be chosen. If the purpose and need of the Project are to be met, other projects and activities would be needed. These projects would result in their own, potentially greater, environmental impacts. Lacking access to an additional affordable supply of natural gas, NJNG may seek other options, including the use of other sources of fuel. To date, no other natural gas pipeline projects have been proposed or are known to be in development to meet the purpose and need of the proposed Project by the targeted in-service date of November 1, 2016 for Phase 1 and August 1, 2017 for Phase 2.

### 7.2 System Alternatives

System alternatives are alternatives to the proposed action that would make use of other existing, modified, or proposed natural gas pipeline systems or existing compression to meet the stated purpose and need for a proposed project. System alternatives involve the transportation of the equivalent amount of incremental natural gas volumes by the expansion of existing pipeline systems or by the construction



and operation of other new pipeline systems. A viable system alternative would make it unnecessary to construct all or part of the proposed Project, and would involve the transportation of all or a portion of the additional natural gas volumes by expansion of another existing pipeline system or construction of a new pipeline system. Such modifications or additions would result in environmental impacts; however, the impacts would in all likelihood be similar to, and potentially greater than that associated with construction of the proposed Project.

In order to be a viable system alternative to the proposed Project, potential system alternatives must meet two criteria:

- The resulting pipeline system must be hydraulically capable of transporting up to 20,000 dth/day for Phase 1 and up to 180,000 dth/day of natural gas from the requisite receipt point to Transco's Project customers' requisite delivery point;
- The resulting pipeline system alternative must be capable of transporting the required volumes and constructed within the same schedule as the proposed Project; and
- Use of an alternative system must be able to meet the criteria above and at the same time result in some reduced environmental impacts when compared to the proposed Project.

In order to deliver the 20,000 dth/day of natural gas load toward the Chesterfield M&R for Phase 1, a system alternative that was considered in lieu of the proposed Project required looping Transco's Mainline from approximately milepost (M.P.) 1775 to M.P. 1777 in Mercer County, New Jersey with 2 miles of 42-inch piping. Unfortunately, the Transco Mainline looping alternative would increase the environmental impacts; affect a much larger number of landowners, and increase the Project cost and duration when compared to the proposed Project. Because of these reasons, Transco rejected installing 2 miles of 42-inch Mainline looping as a viable system alternative.

For Phase 2 the delivery capacity increases by 160,000 dth/day for a total of 180,000 dth/day of natural gas load toward the Chesterfield M&R. A system alternative that was considered in lieu of the proposed Project required looping Transco's Mainline from approximately M.P. 1771 to M.P. 1775 in Mercer County, New Jersey with 4 miles of 42-inch piping. This alternative would replace the scope items identified for Phase 2 at Station 205, but would not eliminate the need for Compressor Station 203. The addition of Compressor Station 203 is necessary to sustain commitments with existing customers and to accommodate the incremental customer's requirements. Unfortunately, Transco's Mainline looping alternative would increase the environmental impacts, affect a much large number of landowners, and increase the Project cost and duration when compared to the proposed Project. Because of these reasons, Transco rejected looping Transco's Mainline from approximately M.P. 1771 to M.P. 1775 in Mercer County, New Jersey with 4 miles of 42-inch piping as a viable system alternative.

Transco is not aware of any other existing, modified, or proposed pipeline systems that have the available capacity to meet the requisite receipt / delivery stated objectives of the proposed Project, especially to provide the required capacity to New Jersey Natural. In order to do so a greenfield pipeline with compression would need to be constructed from the Station 210 pooling point to a new interconnection with NJNG. This alternative would result in significantly more environmental impacts, affected landowners, project cost and duration when compared to the proposed solution.





## 7.3 Alternative Sites

### 7.3.1 Chesterfield M&R and Station 203 Alternate Sites

To meet the needs of NJNG, Transco conducted an assessment of potential sites on which to co-locate a new compressor station (Station 203) and associated meter station (Chesterfield M&R) and supporting electrical substation that would meet the needs of the Project and work within the geographical constraints of Transco's system and NJNG's proposed pipeline route. The review of potential locations was restricted to a general area that would be in proximity to the NJNG facilities and Transco's Trenton-Woodbury Lateral, but would still allow Transco to identify the preferred location for these Project facilities. These site alternatives were reviewed to avoid or minimize impacts on environmental resources, or, in some cases, to address engineering, landowner, or construction constraints. In addition, it should be noted that the availability of appropriate sites is also a factor, as they must first be available for purchase, before any further steps can be taken to determine if they have other limiting factors, such as wetlands/streams or rare, threatened or endangered species habitat.

Transco worked within the realm of these limitations to complete their due diligence and identified several alternate site locations that met the Project's siting needs. When those sites were further reviewed from a feasibility stand point, it was determined they had further constraints tied to either sensitive adjacent land uses, wetlands and/or streams and engineering limitations that eliminated them when compared to the preferred site. The following sections provide additional information about the alternate sites that were evaluated.

Five locations were considered by Transco for Station 203 and the Chesterfield M&R, each situated off Transco's Trenton-Woodbury Lateral in the vicinity of milepost (MP) 15 in Bordentown, Burlington County, New Jersey. The locations of these five sites are identified in Transco's Station 203 Preliminary Civil Site Evaluation Report and a feasibility study was completed to determine the viability of these locations. The five sites are displayed on Figure 7-1 and were identified as follows:

- **MP 14.5 SW** – MP 14.5, southwest corner of Ward Avenue and Shanahan Lane
- **MP 13.8 NE** – MP 13.8, northeast corner of the New Jersey Turnpike and Ward Avenue
- **MP 13.8 NW** – MP 13.8, northwest corner of New Jersey Turnpike and Ward Avenue
- **MP 15.2 SE** – MP 15.2, southeast corner of the New Jersey Turnpike and Bordentown Chesterfield Road (County Route 528)
- **MP 15.3 SW** – MP 15.3, southwest corner of New Jersey Turnpike and Bordentown Chesterfield Road (County Road 528)

A desktop environmental fatal flaw and feasibility analysis (Analysis) of the five sites was conducted. The purpose of the Analysis was to identify potential fatal flaws associated with the five potential site locations for Station 203 and the Chesterfield M&R, as well as other significant environmental constraints and issues that could pose cost and overall scheduling impacts on the siting, permitting, and construction of the Project. The Project evaluated differentiating factors such as existing land use, potential for wetlands and streams, rare, threatened and endangered species, engineering constraints for tying into PSE&G,



proximity to Transco's system and NJN's proposed lateral, the potential need for horizontal direction drills, archeological resources, and sensitive adjacent land uses. The following issues were assessed:

- Wetland and waterbody impacts, including sensitive waterbodies;
- Impacts to fish, wildlife and vegetation, including state and federally protected species;
- Cultural and historical sites;
- Geology and soil types and within the Project area;
- Land use and populated areas;
- Potential for contamination (EDR report);
- Federal, state, and other public lands; and
- Federal, state, and local permitting required for the Project.

Since the sites are geographically proximate, some of the potential environmental constraints were the same at all five sites. These similarities include: potential to contain acid producing soils, potential presence of the federally threatened bog turtle (*Clemmys [Glyptemys] muhlenbergii*), and potential occurrence of rare and protected plant species. Foraging habitat for a species of special concern, the great blue heron (*Ardea herodias*), occurs within 0.25 miles of all of the five sites that were examined. The area within 0.25 miles of the site located at MP 15.3 SW also contains nesting habitat for a species of special concern, the Coopers Hawk (*Accipiter cooperii*). Foraging habitat for a state endangered species, the Bald Eagle (*Haliaeetus leucocephalus*), occurs within 0.25 miles of the sites located at MP 13.8 NE and MP 13.8 NW. The majority of present land use at each site is also the same, which is either fallow or active farmland, except for the land at the site located at MP 13.8 NE, which consists of undeveloped land. Each of the sites examined except for the preferred site is in close proximity to areas of sensitive land use consisting of residential developments, community sports fields, and a State Youth Correctional Facility.

A summary of differentiating factors is provided in Table 7.3-1. Based on a review of the differentiating site factors set forth in Table 7.3-1 and discussed herein, none of the potential sites had a fatal flaw that would prohibit development, but Transco determined that the preferred site was the best site for the Station 203/Chesterfield M&R facilities because: (i) of the preferred site's proximity to Transco's existing pipeline, NJNG's proposed lateral, and an electrical source for the substation; (ii) the preferred site enables Transco to site Project facilities in proximity to other corridors (transportation and utility); and (iii) of the preferred site's distance from residential developments. Some sites were avoided due to the identification of potential environmental concerns as well as proximity to residential developments and recreational sports fields.

### 7.3.2 Electrical Substation

Based on the Project location and design at Station 203/Chesterfield M&R, an electrical substation is also part of the Project. The substation will be used to power Station 203 on a permanent basis. Due to electrical engineering constraints and for optimal performance, and per PSE&G siting requirements, the



substation must be located immediately adjacent to an electrical powerline and within proximity to Station 203. Transco considered two locations for this substation: one on the same parcel as Station 203/Chesterfield M&R or the second, preferred location on a neighboring parcel. The preferred electrical substation location on the neighboring parcel was selected due to overall size limitations at the Station 203/Chesterfield M&R site and design limitations relating to the ability to tie-in to the PSE&G powerline. If the electrical substation were to be placed on the same parcel as the Station 203 parcel, impacts to the adjacent PFO wetland could not be avoided. The preferred site for the electrical substation is a former agricultural field with sufficient flat space to site the substation and provide practical tie-in to the high voltage powerline. This location is close enough to the Station 203 parcel, allows suitable tie-in to the PSE&G powerline, and, although this location will permanently impact wetlands, these are modified-agricultural wetlands, which are of lower quality than those on the Station 203 parcel and which have been historically farmed and recently impacted by New Jersey Turnpike expansion activities. In addition, the location adjacent to the New Jersey Turnpike and on generally open land has minimized impacts to sensitive receptors such as residences.

After the preferred parcels were identified, detailed siting of specific Project components took into consideration environmental constraints on the properties. Both the Station 203 structures and Chesterfield M&R structures have been sited within the parcel to minimize impacts on wetlands and streams and their related buffers, within the confines of the former agricultural field. Likewise, the electrical substation permanent impacts have been minimized to the extent practical. Those resulting permanent impacts cannot be further refined due to design parameters, for example PSE&G requires a minimum setback for some electrical equipment and a requirement that stone be installed 25 feet in any direction surrounding these components. The detailed siting of the stormwater management also took into account avoidance and minimization of wetland and stream impacts.



Table 7.3-1  
Comparison of Major Site Alternatives (Differentiating Factors)

Factor	Preferred (MP 15.2 SE)	MP 14.5 SW	MP 13.8 NE	MP 13.8 NW	MP 15.3 SW
<b>Existing Land Use</b>	Open/fallow land and active farm field	Active farm field	Undeveloped land	Active farm field	Active farm field
<b>Engineering Constraints</b>	High voltage power is onsite. Access to existing "B" line and good road access. Limited to tying into "B" (36-inch) without a horizontal directional drill (HDD) for "A" (16-inch) line.	Access to existing Transco "A" and "B" lines and good road access. High-voltage power would have to cross the turnpike.	High-voltage power is onsite. An HDD would be required under the turnpike to access the tie-in to the main gas lines.	Access to existing Transco "A" and "B" lines and good road access. High-voltage power would have to cross the turnpike.	Access to existing Transco "A" and "B" lines and good road access. High-voltage power would have to cross the turnpike.
<b>Waterbody on or near site</b>	Stream located on site	Stream proximate to site	Stream proximate to site	Stream proximate to site	None identified based on desktop study
<b>Wetland on or near site</b>	Modified agricultural wetland onsite (for the electrical substation parcel)	Wetland in close proximity to site	Wetland in close proximity to site	None identified based on desktop study	None identified based on desktop study
<b>Bald Eagle habitat</b>	Not documented	Not documented	Documented habitat in vicinity of site	Documented habitat in vicinity of site	Not documented
<b>Vernal habitat</b>	None identified based on desktop study and field visit	None identified based on desktop study	Potential vernal habitat in close proximity	None identified based on desktop study	None identified based on desktop study
<b>Shallow bedrock</b>	No	Potential to encounter shallow bedrock	Potential to encounter shallow bedrock	Potential to encounter shallow bedrock	No



Factor	Preferred (MP 15.2 SE)	MP 14.5 SW	MP 13.8 NE	MP 13.8 NW	MP 15.3 SW
Sensitive adjacent land uses	None	Adjacent to community soccer field; State Youth Correctional Facility across Ward Avenue	Inactive mining operation adjacent to the site; active contaminated site in vicinity of site. Adjacent to sizable tributary to Crosswicks Creek.	Adjacent to State Youth Correctional Facility	Adjacent residential development, adjacent church
Recorded archeological sites present onsite	No	Yes	No	No	No
Recorded archeological sites within 0.50 mile	3	4	10	9	3
Recorded architectural resources within 0.50 mile	Camden and Amboy Railroad Mainline Historic District, Singleton-Latham-Large House	None	Crosswicks Historic District, North Crosswicks Historic District, Lengyen Farm Complex	North Crosswicks Historic District	Camden and Amboy Railroad Mainline Historic District, Singleton-Latham-Large House



## **7.4 Construction and Installation Alternatives**

### **7.4.1 Station Piping**

Station piping is required to connect the valve site with Compressor Station 203. The specific station piping route is displayed on the Permit Drawings located in Section 9 of this permit application. As shown and detailed within this report, the station piping will traverse several areas of wetlands within the limits of the ROW containing the PSE&G powerlines and two existing pipelines. The station piping route was selected within the realms of the site design and engineering constraints as well as taking effort to minimize impacts to wetlands. However, these features cannot be totally avoided since they run parallel to the valve site and Compressor Station 203, and therefore must be traversed at some junction.

Transco considered alternative construction methods including horizontal directional drilling (HDD) and the bore method for the station piping installation, in order to avoid wetland impacts. However, these options are limited, due to the existing Sunoco and Colonial pipelines located in vicinity to the proposed station piping alignment and additional HDD constraints, as detailed further.

The length of pipe that must be installed across the PSE&G ROW is approximately 900 feet while an HDD would require at minimum a 1,200 foot crossing due to the permissible bend radius required for a 36-inch pipe. Due to the confines of the site, there is limited room for laying out the necessary HDD staging workspace. In addition, the Project area cannot accommodate the minimum crossing length required when employing the HDD methodology. Therefore, in order to achieve the proposed station piping alignment, this method is not feasible due to the limited space and crossing length limitations.

Transco also evaluated the bore method for installation of the station piping within the PSE&G ROW. The maximum safe distance for completing a bore is 300 feet with pipe of this size, which the crossing is approximately 900 feet which poses issues. As a result two bores would be required in order to include the fiber optic line located west of the PSE&G ROW and then an additional bore would have to originate under the 500kV PSE&G line in order to complete the bore throughout the remainder of the ROW and over to Compressor Station 203. This method would require large bore pits in the PSE&G ROW, which negates any reduction in wetland impacts. Furthermore, the two Colonial and Sunoco pipelines would have to be exposed/daylighted, as required when working in a certain proximity of active lines. There is also considerable concern from a safety standpoint when working for a prolonged period under high voltage transmission lines, and PSE&G most likely would not agree to having a bore setup underneath their electric lines. As a result of these factors and fact that the bore method does not ultimately decrease earth disturbance within wetlands this method was not selected.

### **7.4.2 Electrical Interconnect**

The electrical substation will be connected to Station 203 with electrical lines. The new lines from the substation that will provide power to the compressor station will be located underground in a conduit based on the requirements from PSE&G that foreign utility crossing under their existing high-voltage powerlines be buried underground. As shown on the Permit Drawings (Section 9) this new conduit is co-located with the new station piping to the extent possible and will utilize the same overall working area within the limits of the PSE&G ROW. The electrical conduit will generally travel east-west, directly from the substation towards Station 203. The conduit will be installed via the open-cut method as was described above for the Station piping.



## 7.5 Alternatives Summary

If the proposed Project is not constructed to help meet demand (i.e., the No-Action Alternative), the market served by the customer who has executed a binding precedent agreement for all of the Project capacity may experience energy shortages and reliability issues in the state of New Jersey in times of peak demand or users may revert to the consumption of alternative fuels including oil and coal. Use of alternative fuels to supply the energy needs of natural gas customers is not the best practicable alternative as compared to the use of cleaner-burning natural gas. In addition, although energy conservation is a valuable measure as part of an overall energy plan, energy conservation alone is not considered a viable "complete" solution to the current energy demand for the market served by this Project.

Accordingly, Transco believes that the preferred facility location meets the Project's purpose and need while minimizing adverse impacts to the surrounding communities, landowners, terrestrial habitats and other sensitive environmental resources. Transco worked within the realm of the siting limitations detailed above, to complete their due diligence and identified several alternate site locations that met the Project's siting needs. When those sites were further reviewed from a feasibility stand point, it was determined they had further constraints tied to either sensitive adjacent land uses, wetlands and/or streams and engineering limitations that eliminated them when compared to the preferred site. Furthermore, additional consideration was taken within the selected site to determine the feasibility of alternative construction methods such as HDD and more, which were determined to be unviable due to site constraints.



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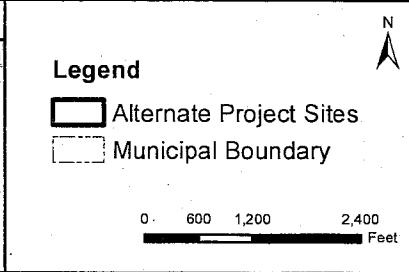
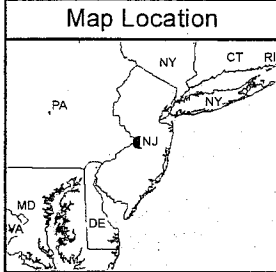
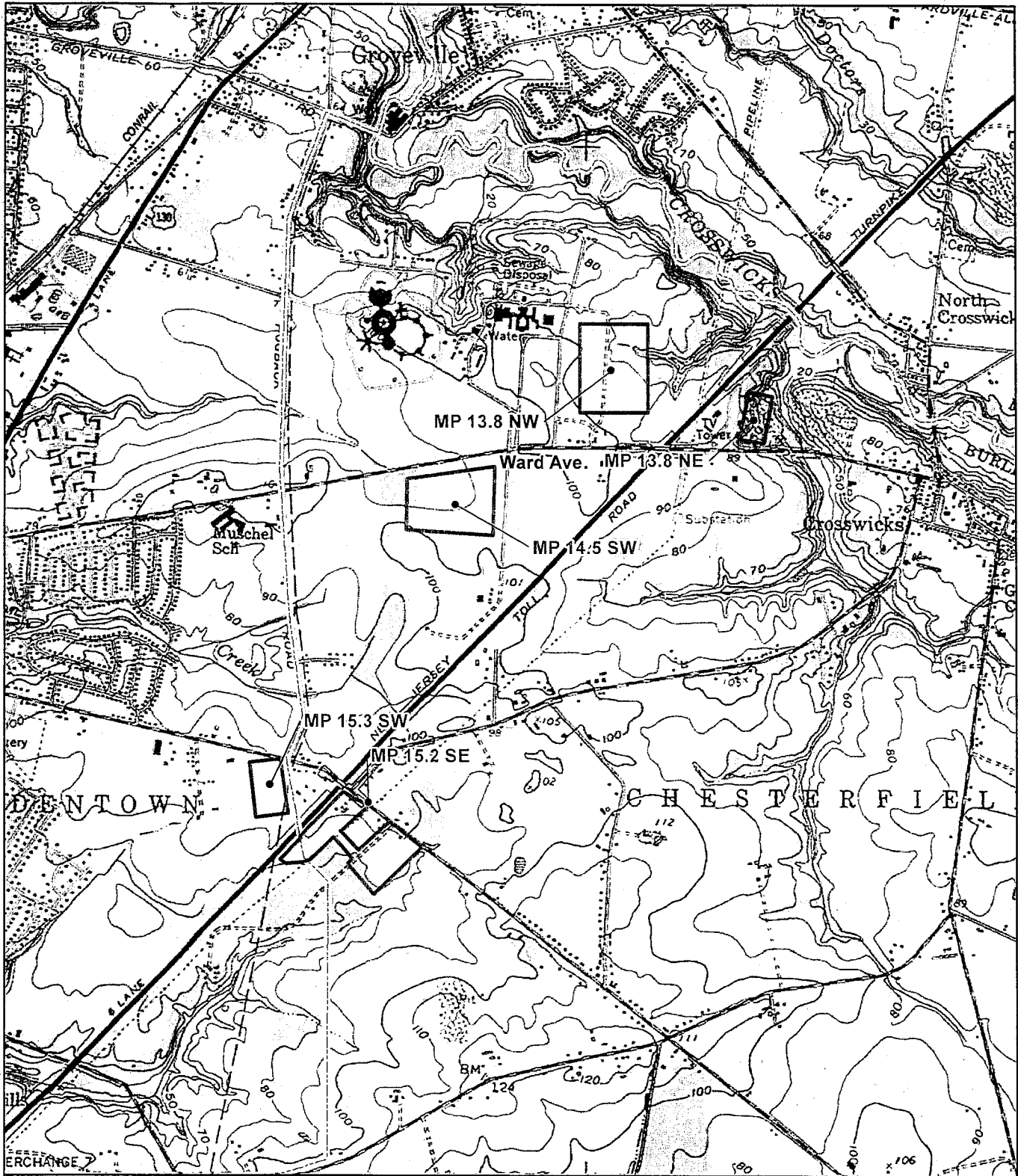




Application for Individual Freshwater Wetlands  
and Flood Hazard Area Permits  
Garden State Expansion Project  
Burlington County, New Jersey

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## FIGURES



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Transcontinental Gas  
Pipe Line Company

Garden State Expansion

Locations of Alternate Project Sites  
Considered for New Greenfield  
Compressor Station  
and M&R Station

**AECOM**

125 Rock Road  
Horsham, PA 19044  
Phone: 215.315.4150

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Figure 7-1

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January 2015

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Project #: 60328910



Application for Individual Freshwater Wetlands  
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## APPENDICES



Application for Individual Freshwater Wetlands  
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## APPENDIX 1 – FERC PLAN AND PROCEDURES