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HIGHLANDS RMP CONSISTENCY DETERMINATION REVIEW (REVISED)

PROJECT INFORMATION		
Project Name: Tennessee Gas Northeast Upgrade Project – Loop Within Highlands Region		
Date: December 21, 2011		
Name of Applicant: Tennessee Gas Pipeline Company (Tennessee Gas)		
Areawide WQMP: N/A	WMP: N/A	
Municipality: West Milford and Mahwah Townships and Ringwood Borough	County: Passaic and Bergen	
Exempt project? Subject of this review	Project specific amendment? No	WMP review? No
NJDEP Activity #:	HPAA#: N/A - HAD Exemption #11 application is subject of review.	
Lot and Block, if applicable: Numerous		
Sewer Service Area/WWTP Facility: N/A		
Sewer Service Area/WWTP Facility: New <input type="checkbox"/> Existing <input type="checkbox"/> <i>If existing provide the following:</i>		
Proposed Change in Service Area or Wastewater Flow?: No		
NJPDES #:	Permit Discharge (MGD):	
Type of Discharge: GW <input type="checkbox"/> SW <input type="checkbox"/>	Total Proposed Service Area (acres):	
Total Existing Service Area (acres): N/A		
Description of Project:		
<u>Project History</u>		
<p>This Consistency Determination addresses the application submitted by the Tennessee Gas Pipeline Company on July 8, 2011 for an amendment to an existing Highlands Applicability Determination (HAD) for the 300 Line Project issued by NJDEP for the Preservation Area, and to the exemption determination issued by the Highlands Council for the Planning Area. The submitted Amendment has two related but independent components – Attachment A and Attachment B. Attachment A addresses modifications made to the 300 Line Project within the Highlands Region since the Highlands Council and NJDEP issued a coordinated determination that the project was exempt from the Highlands Act under Exemption #11 as an upgrade of public utility lines, rights of way, or systems, by a public utility and the project was consistent with the goals and purposes of the Highlands Act. Attachment B contains the application for the proposed Northeast Upgrade Project (the subject of this specific Consistency Determination and which is described below.)</p> <p>The original submittal was subject to public comment, with an ultimate close of public comments on October 9, 2009. The Highlands Council approved Resolution #2009-56 on January 11, 2010, incorporating the Staff Consistency Determination Report, finding that the 300 Line Project as then proposed met the Highlands Act requirements of Exemption #11 for the Planning Area, and that the 300 Line Project as then proposed was “consistent with the goals and purposes of the Highlands Act” as required for Exemption #11 in the Preservation Area, in support of NJDEP decision-making regarding the project. In both cases, conditions were imposed upon and agreed to by the applicant. These conditions were specifically related to ensure consistency with the goals and purposes of the Highlands Act as required by Exemption #11 in the Highlands Act and the conditions were separate and apart from any other conditions imposed by any other agency under their separate statutory authority.</p> <p>As noted above, Attachment A of the submitted Amendment addresses modifications made to the 300 Line Project within the Highlands Region since the Highlands Council and NJDEP issued a coordinated determination.</p>		

Attachment B contains the application for the proposed Northeast Upgrade Project, which involves the construction of approximately 7.6 miles of new 30-inch diameter underground natural gas pipeline. (Note: a 1.29-mile long segment of the Northeast Upgrade project was previously addressed by the Highlands Exemption determinations issued for the 300 Line project, but is now proposed to be separated from the 300 Line project and incorporated within Attachment B, the Northeast Upgrade Project.) This Consistency Determination **only** addresses Attachment B. A separate Consistency Determination has been prepared for Appendix A. Please note that the Highlands Council is requesting public notice on each project concurrently but reserves the right to issue findings and decisions on each project as separate proposals.

Overview of Northeast Upgrade Project

The existing Tennessee Gas Pipeline Company's "300 Line" is a 24-inch underground natural gas pipeline system that traverses northern Pennsylvania and northwestern New Jersey. The existing maintained right-of-way (ROW) is 50-feet in width in the New Jersey segment. Tennessee Gas is proposing to upgrade its existing natural gas delivery facilities in the Northeast by constructing the NEUP. A portion of the NEUP to be located in northern New Jersey would consist of approximately 17.60 miles of underground natural gas pipeline. The proposed pipeline loop in New Jersey is known as "the 325 Loop Segment" (the term "loop" refers to a segment of pipeline installed adjacent to an existing pipeline and connecting to it at both ends). Approximately 7.6 of the mileage in New Jersey would be located in the Highlands Preservation Area. The proposed 325 Loop would commence in West Milford Township in Passaic County (mile post [MP] 0.00) and extends through Ringwood Borough in Passaic County, terminating in Mahwah Township (MP 7.58) in Bergen County. Modifications to the existing meter station will be located at MP 7.58 in Mahwah Township. The proposed land disturbance would consist of approximately 109 acres (approximately 16 acres of permanent impacts and 93 acres of temporary impacts). The project has been submitted to the Federal Energy Regulatory Commission (FERC) for review.

This project review is in support of decision making by both the Highlands Council and NJDEP regarding whether this application meets the standard of eligibility for Exemption #11 of the Highlands Act ("the ... upgrade of public utility lines, rights of way, or systems, by a public utility..."), which mandates that a Highlands Act exemption is only to be granted "provided that the activity is consistent with the goals and purposes of" the Highlands Act. The Highlands Council uses the resource policies, objectives and requirements of the Regional Master Plan (RMP) as a general measure of whether a project meets this threshold, applying a weight of evidence approach. Broad and extensive consistency with the substantive requirements as a whole must be found, but complete consistency with each individual requirement of the RMP is not required. This standard of review is based on the Act's reference to the goals and purposes of the Act rather than consistency with the RMP itself. In addition to NJDEP and Highlands Council review regarding Exemption #11, NJDEP is also reviewing the proposed use of and impacts upon State lands as a separate and distinct issue. NJDEP permits will also be required. If Exemption #11 is determined to be applicable, NJDEP will administer such permits in the Preservation Area under the statewide NJDEP programs, rather than as Highlands Preservation Area Approvals.

The application for Exemption #11 of the Highlands Act also includes routine post-construction repair and maintenance on the Tennessee Gas Pipeline Company NEUP Line. These repair and maintenance activities include, but are not limited to, pipeline inspections, correction and repairs of anomalies, hydrostatic tests, excavation for external inspections, replacement of pipeline coating, replacement of pipeline segments, installation and maintenance of cathodic (i.e., metal corrosion) protection, maintenance of mainline valves, maintenance of pig launchers and receivers, and mowing and clearing of the ROW. Such activities are required to adhere to the FERC's maintenance requirements in Section 380.15 of the FERC regulations.

Following is a brief description of the proposed project elements:

- **Pipeline Facilities** – The proposed NEUP Loop 325 would be located at a 25-foot offset from the existing 300 Line pipeline within the existing ROW where feasible. Additional new permanent ROW would be required (see below – Existing and Proposed Permanent ROW) along with temporary workspace to facilitate construction of the pipeline. According to the applicant, the routing for the proposed Loop 325 was selected to parallel the existing 24-inch line, which will in turn avoid new areas of residential development, minimize

the number of newly affected landowners, and minimize environmental impacts.

- **Existing and Proposed Permanent ROW** – The existing 300 Line pipeline is situated within a 50-foot permanent ROW. The applicant proposes to maintain a maximum 25-foot separation between the existing pipeline and the proposed 325 Loop segment where feasible. This would result in a 75-foot wide permanent easement that will include both the existing 24-inch 300 Line pipeline and the new 30-inch Loop 325 pipeline to facilitate operations.
- **Temporary Construction Workspace** – The applicant is proposing a typical construction ROW width of 100 feet, consisting of:
 - 25 feet off the existing permanently maintained ROW (25 feet will not be disturbed or used in most cases to avoid working over the existing 24-inch line that will remain in-service during construction);
 - 25 feet of new permanently maintained ROW; and
 - 50 feet of temporary construction workspace.

According to the applicant, the construction ROW width will be reduced in wetland areas and in some residential areas to reduce impacts and may be extended to 125 feet in agricultural areas to facilitate topsoil segregation. Further, the applicant notes that portions of the construction ROW on State-owned lands may also be reduced. In addition to the typical 100-foot wide construction ROW, additional temporary workspace areas will be required to facilitate construction near wetlands, steep slopes, bedrock outcrops, and road, railroad, and utility crossings. Typical additional temporary workspace width would range between 25 and 100 feet, depending upon existing land use, geological, and topographic conditions.

- **Access Roads** – Access roads would be required during construction for movement of personnel, equipment and material to the pipeline ROW. The applicant is proposing to use existing public roadways and existing private access roads. The applicant states that the majority of the access roads would require minimal modification. A total of 13 private access roads within the Highlands Region have been preliminarily identified for use during construction of the NEUP Loop 325. According to the applicant, all other roadways are public roadways to which no improvements are anticipated.
- **Pipe and Equipment Storage Yard** – The applicant states that it would utilize two areas for pipe storage and contractor staging during construction of NEUP Line 325. These areas are identified as the Tilcon Contractor Yard and Tilcon Pipeyard. Upon completion of construction activities, the applicant states that the selected site would be restored to pre-construction conditions.
- **Meter Station** – The applicant proposes to upgrade its existing meter station located in Mahwah Township. Through installation of two new taps, three ultrasonic meters, and two gas filter separators, the applicant proposes to increase the existing meter capacity.
- **Main Line Valves and Pig Receiver** – The applicant proposes to install tie-in valve assemblies at each end of the pipeline loop segment to integrate the loop sections into the existing system. Further the applicant proposes to construct a “pig receiver” (i.e., a pipeline component used for removing an inline inspection tool or other device from a pressurized pipeline) at the project terminus in Mahwah.

In addition to the construction elements discussed above, the proposed project integrates a **Comprehensive Mitigation Plan (CMP)** (a revised CMP was submitted to the Highlands Council in October 2011). The purpose of the CMP is to set forth a plan of construction and restoration by which project implementation would avoid, minimize and mitigate any impacts to Highlands Resources so that there will be no net loss of such resources, consistent with the Highlands Regional Master Plan (RMP). It provides an approach and process for identifying the specific resource issues, the means to avoid and minimize the specific impact, and ultimately, the ability to define ways that would help mitigate unavoidable environmental impacts. The combined effect of these plans is intended to effectively deal with the proposed project as a whole unit. The CMP will have the same components as, and the specific provisions will be based upon, the 300 Line Project CMP, with modifications as necessary to address specific issues relevant to the NEUP. As a condition of approval, the CMP shall be modified to assess the potential impacts of foreseeable but low-

probability events, such as major weather or other catastrophic events, including but not limited to impacts such as slope failure, failure of sediment and erosion control measures, and silt and mud deposition into lakes and other waterbodies. In addition, the CMP will include a contingency plan to address such foreseeable but low-probability events and their impacts, including pre-planning, event management and restoration. The applicant also indicates that Environmental Inspectors (EIs) would be on-site during construction activities to ensure compliance with the CMP, as well as requirements of all applicable federal, State and local environmental permits and approvals.

The applicant will provide a copy of this modified CMP to the FERC. The FERC is currently reviewing the application for a certificate of public convenience and necessity for the proposed project, pursuant to the applicable provisions of the Natural Gas Act and the FERC's regulations. Construction of the project and the implementation of the CMP are contingent upon issuance by the FERC of the requested certificate of public convenience and necessity for the project. Following FERC issuance of a certificate order authorizing the project, the applicant will file with the FERC an Implementation Plan for the Project, which will include all applicable construction, restoration and monitoring requirements, techniques, and standards, including the requirements of the referenced CMP. Once the Implementation Plan for the project is approved by the FERC, the applicant will be required to comply with all provisions of that Implementation Plan, as well as with all requirements and conditions of the certificate order. Compliance with the Implementation Plan will be monitored by environmental inspectors from the FERC, as well as the applicant's EIs.

To ensure completion of the individual plans of the CMP, the applicant will post a performance bond, with the dollar amount to be determined by the Highlands Council based on information from the consultant. Commitment to development and implementation of the CMP would be a condition of the Highlands Act Exemption #11. This performance bond may be combined with the performance bond previously posted regarding the 300 Line Project.

The applicant has also developed an "Environmental Construction Plan" (ECP) (revised in October 2011) for this project. The ECP describes the basic environmental construction techniques that Tennessee Gas (and its contractors) will implement during and following construction and maintenance to protect the environment and to minimize potential effects of the pipeline construction and maintenance. According to the applicant, it has based the specifications in the ECP on procedures successfully used in constructing, operating and maintaining transmission systems throughout the United States, and on guidelines and recommendations from the U.S. Army Corps of Engineers, the U.S. Department of Agriculture, the Natural Resources Conservation Service ("NRCS"), and the FERC. Further, the applicant notes that the ECP has been modified to include additional requirements that have been imposed by the NJDEP, and the relevant Soil Conservation Districts. The applicant notes that more specifically, the ECP has been modified to include additional requirements of New Jersey's "Standards for Soil Erosion and Sediment Control."

PRESERVATION AND PLANNING AREAS AND LAND USE CAPABILITY ZONES

Project Area located in which Highlands Act Area? (Check all that apply):

Preservation Area **If yes, percentage?** 100 % | **Planning Area** **If yes, percentage?**

Project Area within which Land Use Capability Zone or Sub-Zone? (check all that apply):

Protection Zone Conservation Zone Existing Community Zone
 Conservation – Environmentally Constrained Sub-Zone Existing Community – Environmentally Constrained Sub-Zone
 Lake Community Sub-Zone Wildlife Management Sub-Zone

The review below is organized by Regional Master Plan Goals, Policies and Objectives for each resource and smart growth category; C stands for Consistent, I for Inconsistent, and N/A means the goal, policy, or objective is not applicable. Project specific reviews are based on the application of these Policies and Objectives to the project site, and do not require the adoption of municipal ordinances. Documents reviewed for this analysis include all appropriate documents submitted to the NJDEP, Highlands Council GIS data and technical reports, and documents related to the State Planning Commission Plan Endorsement process where applicable.

PART 1 NATURAL RESOURCES			
SUBPART A FOREST RESOURCES			
Project Area within Forest Resource Area? Yes			
If yes to above, is there Encroachment into a Forest within Forest Resource Area? Yes			
Forest Integrity Value (check one): High <input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low <input type="checkbox"/>			
Regional Master Plan Goals, Policies, and Objectives:	C	I	N/A
Policy 1A2: To limit human development in the Forest Resource Area in the Preservation Area in order to protect and enhance forest resources, forest ecosystem integrity, Critical Habitat, and the quantity and quality of water resources.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 1A2c: To prohibit through local development review and Highlands Project Review the deforestation of lands within the Forest Resource Area of the Preservation Area for human development except where authorized as an exemption by the Highlands Act, or is an agricultural or horticultural development as defined at N.J.S.A. 13:20-31 and meets the requirement of that provision of the Highlands Act, or if qualifying as a major Highlands Development, the project must, at a minimum, be in conformance with the NJDEP Preservation Area Rules at N.J.A.C. 7:38-3.9.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Objective 1A2d: To prohibit through Plan Conformance, local development review and Highlands Project Review the expansion or creation of public water supply systems or public wastewater collection and treatment systems or community-based on-site wastewater facilities into forested areas of the Forest Resource Area within the Planning Area except as provided for in Policy 2J4 with Objectives 2J4a through 2J4d, and Policy 2K3 with Objectives 2K3a through 2K3e, and within the Preservation Area except as provided for in Policy 2I1 and Objectives 2I1a and 2I1b.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 1A2e: To require through local development review and Highlands Project Review that projects qualifying as major Highlands Developments, affecting or potentially affecting forests outside the Forest Resource Area in the Preservation Area, comply with the NJDEP Preservation Area Rules at N.J.A.C. 7:38-3.9. All projects in the Preservation Area that are not major Highlands Developments shall comply with Policies 1A1 and 1A2.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Policy 1A5: To prohibit through local development review and Highlands Project Review forest clear-cutting within the Forest Resource Area except in accordance with a Forest Management Plan approved by the State Forester.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 1B2: To limit through local development review and Highlands Project Review human development of forests to low impact residential development in the Protection Zone and the Conservation Zone in the Planning Area.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 1B3: To limit through local development review and Highlands Project Review deforestation in the Forest Resource Area and forested lands within High Integrity Forest Subwatersheds within the Existing Community Zone to maximum extent practicable.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 1B3a: Implementation through Plan Conformance of regulations, which limit the clearing of trees in conjunction with human development to circumstances where the clearing will not diminish the integrity of forest resources.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 1B5: To ensure that forest resources are protected on a site specific basis during local development review and Highlands Project Review.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 1B5a: Applications for local development review and Highlands Project Review require identification of any forest area on and adjacent to a site in accordance with the Highlands Council's Method for Identifying Upland Forest Areas in the Highlands Region.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 1B7: To prohibit clear-cutting of forest lands except pursuant to an approved Forest Management Plan approved by the State Forester.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 1C1: To require that conforming municipalities and counties address the protection of forested portions of Forest Resource Areas and High Integrity Forest Subwatersheds in their master plans and development regulations.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 1C3: To require that conforming municipalities adopt a tree clearing ordinance consistent with an approved community forestry plan under the New Jersey Forest Service Community Forestry Program as part of the municipal master plan and local development regulations.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Comments: The applicant is currently authorized and required to conduct vegetative clearing within the existing ROW, which includes the removal of trees and tall growing saplings and shrubs, to ensure that the ROW is maintained for access, visibility, and safety, pursuant to FERC rules governing natural gas transmission lines. Thus, the applicant notes that the majority of vegetative communities located within the existing ROW are not forested.</p> <p>The expansion of the permanent ROW by 25 feet to 50 feet, the additional 50 feet of temporary expansion for a "typical" 100-foot wide construction ROW, and construction of other temporary workspaces would require removal of forests in a Forest Resource Area in the Preservation Area. The applicant estimates that there would be 15.83 acres of permanent forest impacts and 86.1 acres of temporary forest impacts (for a total of 101.93 acres). The applicant indicates that it is required to obtain permits from NJDEP for impacts to forested wetlands and must comply with FERC Wetland and Waterbody Construction and Mitigation Procedures (FERC Mitigation Procedures) for pipeline construction and operation through forested wetland areas.</p> <p><u>Applicant's Upland Forest Mitigation and Restoration Plan as Presented in CMP (October 2011)</u></p> <p>A key component of the CMP is the proposed Upland Forest Mitigation and Restoration Plan as proposed by the</p>			

applicant (originally submitted in July 2011 and revised in October 2011). The CMP notes that the approach to upland forest mitigation and restoration involves a combination of impact minimization during construction and vegetation re-establishment involving natural, successional processes as a key component. It is stated that that this approach will best minimize the long-term impacts to forested uplands and will facilitate the development of an upland forest with a vegetation community composed of species best suited for the site and successional stage. The applicant states that the reforestation plan shall be limited to those forested upland areas within designated temporary workspace on privately owned lands (state-owned lands will be planted in accordance with the New Jersey No Net Loss Reforestation Act (N.J.S.A. 13:1L-14.1 et seq.). Following is a summary of the key elements of the applicant's proposed reforestation plan:

- Minimize the amount of tree clearing to the maximum extent practicable while still allowing for safe construction of pipeline. Where determined feasible by the Environmental Inspectors within the typical 100-foot construction ROW, selected trees along the edge of the ROW may be preserved to help minimize impacts.
- Re-establishment of forest will be performed using a combination of plantings and natural, successional processes.
- Restoration planting densities of 600 plants-per-acre within upland forests, 400 of which shall consist of tree species. Tree species will consist of four to six foot whip-sized individuals in a variety of native upland species obtained from a reputable plant nursery. No cultivars or other ornamental sub-species will be allowed as substitutes. Alternatively, as dictated by site conditions (i.e., seedlings may be more appropriate in certain locations than plants or trees based on local site conditions), reforestation planting may consist of 800 to 1,000 seedlings per acre. (Highlands Council staff notes these plant densities and the alternate seedling densities are below the levels required by New Jersey No Net Loss Reforestation Act.) **Note:** the densities provided in the latest October version of the CMP are greatly reduced from the densities provided in the July 2011 draft CMP for the proposed Northeast Upgrade project. The July 2011 CMP indicated restoration "planting densities of 1,400 plants per acre, 1,300 of which shall consist of tree species...alternately reforestation planting may consist of 1,600 to 2,000 seedlings per acre." As per the "Highlands Council Staff Review and Assessment below", the Highlands Council staff has determined that the higher densities proposed in July 2011 are appropriate.
- To ensure successful completion of the mitigation plan and increased survivorship of individual plantings, the applicant will conduct the planting in early- to mid-fall 2012 following completion of project construction. If actual construction timeframes do not accommodate a fall 2012 planting schedule, the applicant shall conduct the planting as soon as practicable within the 2013 growing season with the understanding that installation of the plantings will be logistically impractical during inundated conditions that typically occur during early spring, while planting during drought or excessively hot conditions typically occurring in early- to mid-summer will greatly increase the potential for individual mortality due to heat or water stress and where supplemental irrigation of plantings is impractical if not impossible.
- Planting will be conducted by a qualified and reputable landscape contractor contracted by the applicant to provide oversight of the restoration activities. The landscape contractor will be provided a copy of the CMP and will be apprised of applicant's obligations under the plan.
- Spacing of individual plants (typically six to ten feet on center) will be conducted so as to maintain consistent areal canopy coverage and adequate sun exposure as the plantings grow and mature.
- Plantings will be accomplished through the use of plant stocks chosen for their compatibility with the local environment. Commercially available plants and seeds will be utilized to accomplish this goal. The planting plan has been designed to provide a variety of plant species to promote species richness, enhance wildlife habitat, and help to "jump start" restoration of the forest community within the temporary workspace impacted during construction activities.
- The applicant will conduct post-construction monitoring of all forested areas affected by construction for a minimum of three years to assess the condition of vegetation and the success of restoration.
- Restoration shall be considered successful if upon visual survey the density and cover of non-nuisance vegetation are similar in density and cover to adjacent undisturbed land. Yearly monitoring reports shall be

submitted to the Highlands Council at the end of each growing season. These success criteria will identify quantities of native woody species that would be considered necessary to ensure successful forested restoration. If actual field stem counts fall short of the pre-determined threshold values, the applicant will develop and implement supplemental plans in conjunction with the appropriate State and federal agencies.

While the Highlands Council staff recognizes the value of these reforestation measures, it acknowledges that the results will not replace the functions and values of a mature forest in the short-term. It is anticipated that these measures will ensure successful long-term forest restoration, as coordinated with the Council staff, NJDEP and other agencies, and monitored over time until a viable and sustainable community is established. Further, successful reforestation will require that the applicant control non-native species as necessary to ensure regrowth of the native species, both planted and volunteer.

In addition to reforestation, the applicant notes its commitment to the acquisition of land, which shall also mitigate for the loss of forest. The applicant is proposing to purchase 50 acres of land designated as Highlands Forest Resource Area within the Highlands Preservation Area. According to the applicant, this will serve to mitigate new impacts to forest resources on privately owned lands affected by the project.

Highlands Council Staff Review and Assessment

Implementation of the proposed project would result in the *temporary* disturbance of an estimated 86.1 acres of upland forest and the *permanent* disturbance of an estimated 15.8 acres of upland forest. With respect to the temporary disturbance, the Highlands Council staff has determined that restoration plantings of the higher densities proposed in July 2011 (planting densities of 1,400 plants per acre, 1,300 of which shall consist of tree species....alternately reforestation planting may consist of 1,600 to 2,000 seedlings per acre, dependant on local site conditions as described above) are appropriate, as they exceed the requirements of the New Jersey No Net Loss Reforestation Act, rather than the densities proposed in the October 2011 version of the CMP. No Net Loss Tree Replacement Factors (per acre of disturbance) are, at a minimum, as follows: 204 (2" – 2 1/2") caliper trees per acre, or 408 whip/container (4'-6") trees per acre or 1,210 tree seedlings per acre. The size and age of plantings shall be determined dependent upon site conditions such as slope, aspect, soil type, hydrologic regime, and others as appropriate. Further, the amount of upland forest mitigation (in the form of land acquisition) required by the Highlands Council, *beyond reforestation* is 1.25:1 (disturbance: mitigation ratio) for mitigation of temporary disturbance (restoration at site location). Thus, upland forest mitigation (land acquisition) beyond reforestation is calculated to be 107.6 acres. The *Highlands Council Habitat Mitigation Ratio Determinations* document (attached to this Consistency Determination) was used to calculate the mitigation ratio. To summarize, with respect to temporary forest impacts, as a condition of approval, mitigation shall entail reforestation at planting densities of 1,400 plants per acre, 1,300 of which shall consist of tree species (alternately reforestation planting may consist of 1,600 to 2,000 seedlings per acre dependant on site conditions) as well as mitigation in the form of land acquisition at 107.1 acres of upland forest.

With respect to the 15.8 acres of permanent impact to uplands forests, the Highlands Council notes the proposed preservation of the 50 acres of land designated as Highlands Forest Resource Area within the Highlands Preservation Area. This acreage of mitigation is acceptable to the Highlands Council for permanent forest impacts; as it exceeds the mitigation requirement of 2.5:1 for mitigation of permanent impacts to forests of medium quality as outlined in the *Critical Habitat Mitigation Ratio Determinations* (attached to this Consistency Determination). As a condition of approval, the Highlands Council directs the applicant to also consider lands within the Planning Area and to further focus on high Conservation Priority lands if possible, and contiguity with existing preserved lands. The target parcel(s) should be within the northern Highlands Region and preferably within the affected municipalities, though alternative sites will be accepted if local sites are not available. The Highlands Council website information should be used by the applicant to focus on prioritized parcels for acquisition that contain the resources required for mitigation.

The applicant states that once suitable parcel(s) are identified, it will present the properties to the Highlands Council for acceptance as part of the CMP. The applicant indicated that when the Council has approved the parcel(s) for mitigation purposes, the applicant will execute an appropriate mechanism to preserve and protect the property in perpetuity. The applicant states that the chosen protection mechanism would be one of a variety of processes or similar

actions that effectively preserves the property in perpetuity, including a fee purchase of the property and recording of a conservation easement of the property, fee purchase and transfer to an accepting conservation organization, or purchase of development rights and subsequent recording of conservation easement to ensure no development on the property, which the Highlands Council shall have the right to enforce. The applicant indicated in the CMP that if a suitable parcels are not identified, it will provide monetary compensation for mitigation. For the 300 Line project previously approved by the Highlands Council, the agreed upon price per acre was \$7,500, as reflecting land values in that area of the Highlands Region. It is important to note that it is the position of the Highlands Council that if the applicant cannot find suitable lands to purchase, that the Council will attempt to do so before agreeing to accept monetary compensation.

The applicant has stated the goal of avoidance, minimization and mitigation of unavoidable loss of forest. The CMP includes a reforestation plan for temporary forest impacts. The applicant has committed to the acquisition of forested land, the parcel(s) and acreages to be approved by the Highlands Council. With the consideration that implementation of the Upland Forest Mitigation and Restoration Plan will be coordinated with the Highlands Council and other resource agencies, and that the applicant will post a performance bond to ensure no net loss of forest habitat and function, the proposed project, as amended, is found to be made sufficiently consistent with the RMP goals, policies and objectives and NJDEP Preservation Area rules related to forest protection, to be considered consistent with the goals and purposes of the Highlands Act regarding this resource.

SUBPART B HIGHLANDS OPEN WATERS AND RIPARIAN AREAS

Project Area includes Highlands Open Waters Buffer? Yes

Highlands Open Waters Affected: Streams Lakes & Ponds Wetlands

Highlands Open Waters in Preservation Area: Yes

Watershed Value (Check one): High Medium Low

Area includes Riparian Area? Yes *If No, disregard remainder of Riparian Area checklist.*

Specific Riparian Area Features (Check all that apply.): Flood Prone Areas Lakes & Ponds
 Riparian Soils Wetlands Wildlife Corridor Streams

Riparian Integrity Value (Check one per HUC14): High Medium Low HUC14:
 High Medium Low HUC14:
 High Medium Low HUC14:

Regional Master Plan Goals, Policies, and Objectives:

	C	I	N/A
Policy 1D4: Highlands Open Waters shall include a protection buffer of 300 feet from the edge of the discernable bank of the Highlands Open Waters feature, or from the centerline where no discernable bank exists. With respect to wetlands and other Highlands Open Waters features (e.g., seeps, springs, etc.), the feature shall include a protection buffer of 300 feet from the delineated Letter of Interpretation (LOI) line issued by the NJDEP for wetlands, or from a field-delineated boundary for other features. In areas where existing development or land uses within the protection buffers have reduced or impaired the functional values of the buffers, the Council will seek opportunities to restore the buffer and its functions. Any proposed disturbance shall, through local development review and Highlands Project Review, comply with Highlands Open Waters buffer standards. The protection buffer width for Category 2 streams in the Planning Area may be modified through a Stream Corridor Protection/Restoration Plan, as specified in Objective 1D4i. In approved Redevelopment Areas, the Council may, at its discretion, modify the required buffer, upon a showing of no alternatives, no impact to the functional value of the buffer, and provision of alternative approaches to enhancing or protecting Highlands Open Waters and resources of the buffer area.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Objective 1D4a: Require that all applications for approval through local development review and Highlands Project Review include the identification and mapping of Highlands Open Waters.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 1D4b: Preservation Area buffers for Highlands Open Waters shall comply with the Highlands Preservation Area rules at N.J.A.C. 7:38, which provide that all major Highlands developments are prohibited within Highlands Open Waters and its adjacent 300 foot buffer in the Preservation Area except for linear development, which may be permitted provided that there is no feasible alternative for the linear development outside Highlands Open Waters or its buffer. Structures or other land improvements existing within Highlands Open Waters buffer in the Preservation Area on August 10, 2004 may remain, provided that the area of disturbance is not increased other than through a HPAA. For purposes of this Objective when considering land for conversion to non-agricultural land uses, historic or current agricultural land uses shall not be considered "land improvements," "development," "land disturbances," or "land uses."	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Objective 1D4c: Require that proposed development within all Highlands Open Waters buffers (Preservation and Planning Areas) conforms through local development review and Highlands Project Review with the buffer requirements of N.J.A.C. 7:8 (Stormwater Management Rules), N.J.A.C 7:13 (Flood Hazard Area Rules), and N.J.A.C. 7:7 (Freshwater Wetland Rules), and with any applicable requirements of a Regional Stormwater Plan adopted pursuant to N.J.A.C. 7:8 (Stormwater Management Rules).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

<p>Objective 1D4d: Structures or other land improvements existing within a Highlands Open Waters buffer of the Planning Area on August 10, 2004 may remain, provided that the area of disturbance shall not be increased unless approved through local development review or Highlands Project Review in compliance with RMP policies and objectives. For purposes of this Objective when considering land for conversion to non-agricultural land uses, historic or current agricultural land uses shall not be considered “land improvements,” “development,” “land disturbances,” or “land uses.”</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Objective 1D4e: In the Protection and Conservation Zones of the Planning Area, proposed disturbances of Highlands Open Waters buffers shall only occur in previously disturbed areas, unless a waiver is granted by the Highlands Council under Policy 7G2. For purposes of this Objective when considering land for conversion to non-agricultural land uses, historic or current agricultural land uses shall not be considered “land improvements,” “development,” “land disturbances,” or “land uses.” Such proposed disturbances must demonstrate full utilization of the following performance standards in the listed order, to demonstrate the necessity of an encroachment into Highlands Open Waters buffers: 1) avoid the disturbance of Highlands Open Waters buffers; 2) minimize impacts to Highlands Open Waters buffers; and 3) mitigate all adverse impacts to Highlands Open Waters buffers so that there is no net loss of the functional value of the buffer, in compliance with Objective 1D4h. Minimization and mitigation opportunities shall be considered only upon a clear and convincing demonstration by the applicant that the protection buffer cannot be avoided and in no case shall the remaining buffer be reduced to less than 150 feet from the edge of Highlands Open Waters, unless a waiver is granted by the Highlands Council under Policy 7G2 and the proposed disturbance complies with Objective 1D4c.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Objective 1D4f: In the Existing Community Zone of the Planning Area, proposed disturbances of Highlands Open Waters buffers shall only occur in previously disturbed areas, unless a waiver is granted by the Highlands Council under Policy 7G2 and the proposed disturbance complies with Objective 1D4c. For purposes of this Objective when considering land for conversion to non-agricultural land uses, historic or current agricultural land uses shall not be considered “land improvements,” “development,” “land disturbances,” or “land uses.” Such disturbances shall employ performance standards such that all proposed disturbances of Highlands Open Waters buffers shall employ Low Impact Development Best Management Practices to mitigate all adverse modification to Highlands Open Waters buffers so that there is no net loss of the functional value of the buffer, in compliance with Objective 1D4h.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Objective 1D4i: Develop through Plan Conformance and implement stream corridor or subwatershed-based Stream Corridor Protection/Restoration Plans which shall include Steps 1, 2, and 3, and may include Steps 4 and 5: 1. Identify areas where existing development, land disturbances, or land uses are within Highlands Open Waters buffers have removed or substantially impaired natural vegetation communities, and have significantly reduced or impaired the functional values of Highlands Open Waters buffers. For purposes of this Objective when considering land for conversion to non-agricultural land uses, historic or current agricultural land uses shall not be considered “land improvements,” “development,” “land disturbances,” or “land uses”; 2. Identify and require opportunities for restoration of areas identified in Step 1 as part of mitigation requirements under a Highlands Act waiver or Objectives 1D4e and 1D4f, and public or nongovernmental restoration/stabilization projects; 3. Identify the extent of stream corridor features that are critical to supporting the functions of a healthy Highlands Open Waters buffer and that extend beyond the buffers required by Objectives 1D4b and 1D4c. The 300 foot buffer in these areas may be expanded to be most protective of these features which may include, but are not limited to, Critical Habitat, pollutant source areas identified through scientific techniques, and steep slopes; 4. Where Highlands Open Waters buffers include areas identified in Step 1, regarding Category 2 surface waters in the Planning Area only, the Stream Corridor Protection/Restoration Plan may identify where, based on scientific analysis of site-specific conditions (e.g., topography, vegetation cover type, habitat, soil type, upstream land uses and pollution inputs, width of floodplain, rate and volume of run-off), a buffer of less than the full 300 feet (but including the undisturbed buffer area at a minimum) is sufficient to maintain or improve the protection of Highlands Open Waters and Riparian Areas. The plan must identify alternative buffers that provide functional buffer values at least equivalent to existing conditions and are no less than 150 feet or no less than the extent allowed in State or municipal regulation (including Objectives 1D4b and 1D4c), whichever is greater. Further, the plan shall include a functional value assessment to ensure that there is no net loss in the overall functional value of the subwatershed’s stream buffers. Buffers established through this process shall be determined based on site conditions rather than fixed distances, reflecting findings of the scientific analysis, and shall be used in the site design and development review process regarding determinations of restoration, continued use, or increased use of the disturbed buffer area. Buffer averaging for the purpose of accommodating development proposals is deemed not to meet the requirements of this provision; and 5. Where a proposed Highlands Redevelopment Area would not meet, in full, Objectives 1D4b through 1D4h but affects an undisturbed buffer area determined to not be necessary for the protection of the functional values for Highlands Open Waters buffer (as determined through scientific analysis of site-specific conditions), modification of the undisturbed buffer may be allowed to no less than the extent allowed in State or municipal regulation. However the Council shall first determine that there is no alternative to the proposed reduction of the buffer, and require a showing of no impact to the functional values of the buffer and provision of alternative approaches to enhancing or protecting the Highlands Open Waters and resources of the buffer area. Restoration or enhancement of buffer functional values shall be provided on-site or within the same stream reach to achieve a net improvement of existing buffer functional values.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Objective 1D4j: The Highlands Council may require on a case-by-case basis, through Highlands Project Review, an expansion of the 300 foot buffer to protect the habitat of a water or wetlands-dependant rare, threatened or endangered species, to the minimum expansion necessary to achieve protection of that species.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Policy 1D5: Protect the integrity of the Riparian Areas through the application of RMP standards during local development review and Highlands Project Review.</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Objective 1D5a: Require that all applications for approval through local development review and Highlands Project Review include the identification and mapping of Highlands Riparian Areas, including those identified by the Highlands Council and by site-specific analysis.</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Objective 1D5b: Limit disturbance of existing natural vegetation or increases in impervious area within High and Moderate Integrity Riparian Areas in any Land Use Capability Zone to the minimum alteration feasible in areas beyond Highlands Open Waters buffer requirements; protect the water quality of adjacent Highlands Open Waters; and maintain or restore habitat value of</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

the Riparian Area.			
Objective 1D5c: Prohibit modifications to Riparian Areas in the Protection Zone except where a waiver is approved by the NJDEP or the Highlands Council under Policy 7G1 or 7G2.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Objective 1D5d: Restrict modifications to Riparian Areas in the Existing Community Zone, other than those addressed by Objective 1D5b, that would alter or be detrimental to the water quality and habitat value of a Riparian Area.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 1D5e: Implement Low Impact Development Best Management Practices for any development activity proposed within a Riparian Area, which minimize both alterations of natural vegetation and increases in impervious area, in compliance with Policies 6N3 and 6N4 and provide for mitigation through restoration of impaired Riparian Areas in the same HUC14 subwatershed.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 1D5f: Require that development within Riparian Areas conforms through local development review and Highlands Project Review to any applicable requirements of a Regional Stormwater Plan adopted pursuant to N.J.A.C. 7:8 (Stormwater Management Rules).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 1D5g: Require identification and implementation of opportunities where the restoration and enhancement of previously impaired Riparian Areas are feasible and appropriate as mitigation to any allowable modification to Riparian Area requirements.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Comments: Highlands Open Waters and Riparian Areas are located extensively throughout the existing and proposed ROW. It is noted that this project meets the definition of “linear development” (as determined by NJDEP) and that the Preservation Area rules at N.J.A.C. 7:38-3.6 permit linear development within a Highlands Open Waters buffer provided that there is no feasible alternative for the linear development outside the Highlands Open Water or Highlands Open Water buffer. N.J.A.C. 7:38-6 also requires an applicant to provide mitigation in accordance with N.J.A.C. 7:7A for each NJDEP-approved linear development proposed within a Highlands Open Water that is also a freshwater wetland or State open water, as defined in the Freshwater Wetlands Protection Act rules. N.J.A.C. 7:7 states that mitigation shall, at a minimum, fully compensate for the loss of ecological value caused by a disturbance, by replacing any freshwater wetlands and State open waters values and functions lost or disturbed with equal values and functions.</p> <p>The applicant indicated that it would coordinate with NJDEP regarding open water crossings regulated by NJDEP under the Flood Hazard Area Control Act and implementing regulations. The applicant also indicated that it would coordinate with NJDEP regarding wetlands, critical habitat within wetlands, and NJDEP-regulated wetlands transition areas regulated by NJDEP under the Freshwater Wetlands statute and regulations, Green Acres under the Green Acres Act and regulations, and water crossings under the Flood Hazard Area Control Act, Freshwater Wetlands Protection Act, and implementing regulations. However, in recognition that the Highlands RMP requirements apply to all Highlands Open Waters, the applicant also notes that the CMP calls for the protection of all 300-foot Highlands Open Water buffer areas including those areas that are located outside of NJDEP wetland or flood hazard area jurisdiction.</p> <p>The applicant has identified numerous measures to protect surface waters and wetlands in its Narrative Report attached to the HAD application and in the CMP. The CMP includes an Open Waters and Riparian Areas Plan that provides extensive measures regarding Highlands Open Waters Buffers Restoration and Monitoring.</p> <p>The applicant has stated its goal of avoidance of impacts, and minimization and mitigation of unavoidable impacts of Highlands Open Waters and Riparian Areas. The applicant notes that its approach to Highlands Open Waters Buffer area mitigation and restoration involves a combination of impact minimization during construction, topographic restoration, and vegetation establishment involving, successional processes as a key component. The applicant states that this approach will best minimize the long-term impacts to the buffer areas and facilitate the re-establishment of the functional value with a vegetation community composed of species best suited for the site and successional stage. Functions and values of the Highlands Open Waters Buffers such as provision of wildlife habitat, ground water recharge and flood prevention shall not be permanently affected through construction and operation of the project. The applicant indicates that the following measures will be implemented to ensure the timely restoration of the Highlands Open Waters Buffers:</p> <ul style="list-style-type: none"> • Minimize the amount of tree clearing to the maximum extent practicable while still allowing for safe construction of pipeline. Selected trees along the edge of the various stream corridors may be preserved to help minimize impacts. • Disturbed stream and lake bottom materials shall be restored to the maximum feasible extent to ensure restoration of morphology, flow patterns and stability. • During the restoration phase, the pre-construction ground contours and drainage patterns in the buffer area 			

will be restored to their approximate original condition. Following restoration of the ground surface, the buffer areas shall be seeded and mulched to stabilize the area and provide herbaceous cover.

- Re-establishment of forest and shrub vegetation in Highlands Open Waters Buffers will be performed using a combination of plantings with native species only, and natural, successional processes. No cultivars or other ornamental sub-species will be allowed as substitutes.
- Restoration planting densities of 600 plants-per-acre will occur within Highlands Open Waters Buffers. In forested areas, a minimum of 400 of which shall consist of tree species. Tree species will consist of 2 to 3 foot whip-sized individuals and will be obtained from a reputable plant nursery.
- Plantings will be accomplished through the use of plant stocks chosen for their compatibility with the affected ecosystems as well as the various hydrologic regimes within the Highlands Open Waters Buffers.
- The applicant indicates that it will monitor the Highlands Open Waters Buffers re-vegetation efforts annually for the first three years after construction or until wetland re-vegetation is successful. The applicant indicates that it will file an annual report with the Council identifying the status of the open water buffer re-vegetation efforts.

With the consideration that implementation of the Open Waters and Riparian Areas Plan will be coordinated with the NJDEP and the Highlands Council, that the contingency plan will address the potential impacts of adverse events, and that the applicant will post a performance bond to ensure no net loss of Highlands Open Waters and Riparian Areas functional value, the proposed project is found to be made sufficiently consistent with the relevant RMP goals, policies, and objectives and NJDEP Preservation Area rules to be considered consistent with the goals and purposes of the Highlands Act regarding this resource. With respect to Objective 1D5a, the applicant has noted that due to the linear nature and size of the project, it is not feasible to provide site-specific drawings at this project stage of all of the Riparian Areas and buffer zones to be affected by the project. The Council staff concurs, in consideration of the project stage. The applicant has committed to provide site-specific mapping as it is generated during the progression of the project (and as will be required by NJDEP in its permitting process).

SUBPART C STEEP SLOPES

Project Area includes: Steep Slopes >20% in Any Areas (severely constrained)? Yes

Steep Slopes >15% in Forested Areas (severely constrained)? Yes

Steep Slopes >10% in Riparian Area in Undeveloped Lands (moderately constrained)? Yes

Regional Master Plan Goals, Policies, and Objectives:	C	I	N/A
Policy 1E6: To require through local development review and Highlands Project Review that applications for development include topographic information identifying the location of any Steep Slope Protection Areas located on the parcel proposed for development.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Policy 1E7: To require through local development review and Highlands Project Review that applications for development involving parcels of land with slopes of 10% or greater include identification of forested lands, areas which are highly susceptible to erosion, depth to bedrock and Soil Capability Classes.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Policy 1E8: To prohibit through local development review and Highlands Project Review land disturbance within areas which are Severely Constrained Slopes and Moderately Constrained Slopes, except for linear development in both the Preservation and Planning Areas that meets the requirements of N.J.A.C. 7:38-3.8(c)1-4.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Policy 1E9: To require through local development review and Highlands Project Review the use of Low Impact Best Development Practices for any land disturbance or human development within areas, which are Constrained or Limited Constrained Slopes, or that involves an approved disturbance of a Severely Constrained or Moderately Constrained Slope.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Policy 1E10: To require that conforming municipalities and counties implement the steep slope protection provisions of Policies 1E2 through 1E9 through master plans and development regulations.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments: The proposed project would require disturbance of areas that are Severely Constrained Slopes and Moderately Constrained Slopes. It is noted that this project meets the definition of “linear development” (as determined by NJDEP and the Highlands Council) and that the Preservation Area rules at N.J.A.C. 7:38-3.6 and RMP Policy 1E8 permit linear development within a steep slope provided that there is no feasible alternative for the linear development outside the steep slope.

A key component of the CMP is a Steep Slope Construction Plan, which includes a soil erosion and sediment control plan developed for the project in accordance with N.J.A.C. 2.90-1. The applicant states that this plan will be submitted

to the Passaic and Bergen County Soil Conservation Districts for review and approval. The plan covers all areas of construction, including the ROW, access roads, staging areas, and additional temporary workspace. It also identifies locations for the placement of silt fence, construction staging, gravel tracking pads, and other requirements of the applicable County Soil Conservation District.

The applicant states that the NEUP project has been designed to avoid steep slopes where possible and has minimized workspace areas within steep slope areas to the extent practicable to allow for safe working conditions during construction. It is stated that in areas where steep slopes are unavoidable, specialized construction techniques would include the following:

- Identification by milepost of areas with steep slopes (greater than 20%) prior to commencement of construction.
- During grade restoration, the spoil will be placed back in the cut and compacted. Any springs or seeps found in the cut will be carried down-slope through PVC pipe or gravel French drains installed as part of the cut restoration.
- In the areas of construction where the slope exceeds 20% or more, a special means of manipulating the construction equipment will be utilized. The preferred method will be “winching” the equipment. This process consists of placing and anchoring a tractor at the top of the slope and using a winch to manipulate the equipment up and down the slope.
- Use of advanced techniques in silt fencing and strong materials to avoid undercutting, toppling or splitting of the fence, including during severe weather events.
- When impacts to steep slopes are unavoidable, emphasize disruption of the least sloped areas over the more steeply sloped areas.
- Minimize length of traverse across steep slopes while controlling erosion/disruption potential (i.e., having a short traverse down a severe slope may be more disruptive than a longer traverse that avoids the steep slope).
- Strictly limit vegetation removal on either side of access roads in steep slope areas.
- Diffusion of stormwater flow in sloped areas should be emphasized using measures appropriate to rural areas, such as slope intercepts and off-flow points and swales. Special emphasis will be placed on diffusions of flows to lakes and streams directly upgradient of lakes.
- In areas of rugged topography, ROW restoration will begin within 10 days of final pipeline installation to minimize potential erosion and sedimentation control problems.

The applicant states that post-construction mitigation would include installation of permanent trench or slope breakers, revegetation, and monitoring to ensure stabilization of the site. Slope breakers would be installed to slow down the flow of water and increase stormwater infiltration. Swales lined with grass and shrubs may also be designed so as to trap sediment as it comes down the slope.

With the consideration that implementation of the Steep Slope Construction Plan will be coordinated with the Passaic and Bergen County Soil Conservation Districts, that the project is being designed to avoid, minimize and mitigate impacts to steep slopes, that the contingency plan will address the potential impacts of adverse events, and that the applicant will post a performance bond to ensure that the slope profile will be reestablished and replanted to pre-construction conditions, the proposed project, as amended, is found to be made consistent with the RMP goals, policies and objectives and NJDEP Preservation Area rules related to steep slopes sufficient to be considered consistent with the goals and purposes of the Highlands Act regarding this resource.

SUBPART D CRITICAL HABITAT									
Project Area includes:		Critical Wildlife Habitat? Yes				Significant Natural Area(s)? Yes		Vernal Pool(s) +1,000 ft? Yes	
Species of Concern (Landscape Rank)	Great Blue Heron Forage (2)	Sedge Wren (4)	Wood Turtle (3)	Bobcat (4)	Barred Owl (3)	Red-shouldered Hawk (4)	Cooper's Hawk (3)		
Bog Turtle (5)	Northern Goshawk (4)	Brook Snaketail (2)	Timber Rattlesnake (4)	New England Bluet (2)					
Regional Master Plan Goals, Policies, and Objectives:							C	I	N/A
Policy 1F2: To prohibit through Plan Conformance, local development review and Highlands Project Review the direct impact of new human development or expansion or increased intensity of existing development within Critical Habitat.							<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Policy 1F5: To establish a Habitat Conservation and Management Program, including minimum performance standards and criteria for the protection, enhancement, and restoration of lands within Critical Habitat.							<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Policy 1F6: To require that applications for any local development review and Highlands Project Review for Critical Habitat be subject to minimum standards and criteria outlined in the Habitat Conservation and Management Plan.							<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 1F6a: Prohibit direct impacts from new development or expansion or increased intensity of existing development that will jeopardize the continued existence of, or result in the likelihood of the destruction or adverse modification of Critical Habitat, except as permitted through the issuance of a waiver under Policy 7G1 or 7G2.							<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 1F6b: Prohibit indirect impacts from activity that is off-site, adjacent to, or within Critical Habitat that will jeopardize the continued existence of, or result in the likelihood of the destruction or adverse modification of Critical Habitat, except as permitted through the issuance of a waiver under Policy 7G1 or 7G2.							<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 1F6c: Waiver applications under Policy 7G2 for local development in a municipality with a Council-approved Critical Habitat Conservation and Management Plan shall be subject to the minimum standards and criteria for waiver provisions as set forth in the plan, to the maximum extent practicable.							<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 1F6d: Waiver applications under Policy 7G2 for development in a municipality without a Council-approved Critical Habitat Conservation and Management Plan shall be subject to the Low Impact Development Best Management Practices required in Objective 1F5b.							<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 1F6e: A vernal pools protection buffer may be reduced only if an applicant can demonstrate, to the satisfaction of the Highlands Council in coordination with the NJDEP's Endangered and Nongame Species Program, that the reduction is the minimum feasible and that: <ul style="list-style-type: none"> In an undisturbed wetland, documented and field-determined vernal pool-breeding wildlife require a smaller protective buffer, as documented in scientific literature; or Existing land uses present a significant, insurmountable and permanent barrier to the migration or viability of vernal pool-breeding wildlife that is infeasible to mitigate. Requirements for demonstrating the above criteria shall be included in the Critical Habitat Conservation and Management Plan.							<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 1F6f: A Critical Wildlife Habitat area or Significant Natural Area delineation may be modified if an applicant can demonstrate, to the satisfaction of the Highlands Council in coordination with the NJDEP's Endangered and Nongame Species Program or Natural Heritage Program, that: <ul style="list-style-type: none"> The nature of the site is such that it does not provide habitat for species of concern; The species of concern are not present on the site during any critical part of their life cycle, do not depend upon the site for food, shelter or breeding, and the habitat; on the site is either unsuitable or not critical to species' recovery in the Region; or Existing land uses present a human, natural or development barrier to the use of the site by species of concern. Requirements for demonstrating the above criteria shall be included in the Critical Habitat Conservation and Management Plan.							<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 1F7: To require through local development review and Highlands Project Review that projects qualifying as major Highlands Developments, affecting or potentially affecting Critical Habitat in the Preservation Area, comply with the NJDEP Preservation Area Rules at N.J.A.C. 7:38-3.11 and with the minimum standards and criteria outlined in the Critical Habitat Conservation and Management Plan. All projects in the Preservation Area that are not major Highlands Developments shall comply with Policies 1F1 through 1F6.							<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>Comments: The vast majority of the existing and proposed ROW is mapped as Critical Wildlife Habitat. There is one access road that traverses a Significant Natural Area – the Ursus Major Natural Heritage Program Site in Mahwah Township. The ROW traverses a vernal pool habitat at two locations within the project area. The following discussion pertains to Critical Wildlife Habitat; the Significant Natural Area and vernal pool habitat are discussed later in this section.</p> <p>Implementation of a Critical Habitat Mitigation Plan is a key element of the CMP. As part of the on-going and continued development of that plan, field surveys of the project area were conducted by qualified biologists and</p>									

botanists during the summer and fall of 2010 and the spring and summer of 2011. According to the applicant, survey results and biological assessments will be submitted when all field surveys have been completed. On-going coordination with the Natural Heritage Program (NHP) and the Endangered and Non-Game Program biologists within NJDEP, the Highlands Council, and the US Fish and Wildlife Service (USFWS) will continue through the permitting and construction of the project to avoid, minimize and mitigate for impacts on sensitive species including rare, threatened or endangered species.

The applicant provided general rare species mitigation measures as well as some species-specific measures in the CMP. With respect to the general measures, the applicant provided the following:

- The Environmental Inspector (EI) job responsibilities will include understanding and implementing the components of the federal and state-listed threatened and endangered species mitigation measures. While the draft CMP does not specifically mention rare species, the applicant will be required to revise the CMP to explicitly include rare species.
- Before being allowed to conduct work on the project site, all field personnel including all construction contractors and subcontractors will be required to complete an environmental training session during which they will be advised on the potential presence of applicable species, specified habitats where they are likely to be found, visual or other identifying features, and specific activity protocols to be followed in the event that a species is encountered.
- Signage will be posted at applicable locations in the field along the ROW alerting personnel to the potential presence of rare species, including representative color photographs of the species, and notification protocols and contact information for EI personnel or dedicated rare species monitors.
- The applicant will provide mitigation for each species' habitat that is permanently disturbed through construction activities. Mitigation will be four-part and account for no net loss of habitat value in terms of quality, quantity, type and function, and is not injurious to occurrences of rare plant species or rare ecological communities. With respect to temporary impacts, it is the opinion of the applicant that the post-construction restored ROW and workspace will be substantially equivalent to the existing field conditions given the existing pipeline and maintained easement present. Highlands Council staff notes that restoration of forest to pre-disturbed conditions will not be accomplished in a short period. However, the applicant has committed to acquire and preserve mature upland forest to offset impacts to this habitat.
- A field survey of the project area, which includes an inventory of rare plant species (in cooperation with NJDEP's Natural Heritage Program) shall be conducted. The inventory shall include a description of the survey method, all vegetation communities, and occurrences of rare, threatened and endangered species within the project areas to the extent physically or visually accessible. The inventory shall include a map depicting surveyed species and associated habitat. The applicant notes that if target species are found to be present during field surveys, mitigation would include avoidance and fencing of known populations of these plant species, removal and replanting of the population outside of the construction workspace area or removal and translocation to an approved plant nursery during construction, and replanting during restoration (all of these activities shall be coordinated with NJDEP's NHP).
- While the draft CMP does not specifically address the effects of temporary factors related to construction such as noise, increased air emissions, etc., the applicant will be required to revise the CMP to explicitly address such impacts and measures to address potential impacts to rare, threatened and endangered species.

As previously noted, there is one Significant Natural Area in the project area (the Ursus Major Natural Heritage Program Site in Mahwah Township). The site was designated for the deciduous wetlands habitats along Bear Swamp Lake, which contain the only known occurrence of a state critically imperiled plant species. The applicant indicates that an existing paved access road will be used and that no modifications are planned for the existing road. Further, the applicant states that only light duty trucks will utilize the road given the width and bridge limits associated with existing stream crossings on the road. Therefore, the applicant concludes that no impacts to the Significant Natural Area are anticipated as a result of the project. Highlands Council staff concurs with that assessment.

With respect to the vernal pool habitat mentioned above, the project alignment passes through one NJDEP-certified

vernal pool within the ROW at MP 5.41. Additionally, the project passes through the 1,000-foot buffer to a certified vernal pool at MP 6.63. The proposed project activities are located close to the limits of the dispersal habitat (800 to 1,000 feet from the vernal pool).

It is noted in the CMP that potential project-related impacts would be likely limited to the upland dispersal habitat potentially used by obligate and facultative vernal pool species such as wood frogs (*Rana sylvatica*) and mole salamanders (*Ambystoma* spp.). According to the applicant, due to the linear nature of pipeline routing and construction, avoidance of areas located within the 1,000-foot buffer to vernal pools is not feasible. To avoid impacts to upland dispersal and overwintering habitat within the 1,000-foot vernal pool buffer, Tennessee proposes the following measures to be implemented during construction:

- Construction timing shall avoid disruption of propagation and migration of vernal pool species.
- Installation of silt fence along the southern limit of temporary workspace to prevent dispersal of individuals into the construction area.
- Installation of signage along the ROW to identify the area as vernal pool habitat.
- Daily sweeps of the construction workspace by the EI to identify and remove any individual frogs or salamanders that may be located within the workspace.
- Specialized environmental training for contractor personnel to identify species of concern and protocol for contacting the EI should an individual animal be found within the workspace during active construction.
- Placement of wood debris on the ground within the restored temporary workspace to provide for escape cover and overwintering habitat post-construction per landowner agreements.

With the consideration that implementation of the Critical Habitat Management Plan will be coordinated with the Highlands Council, NJDEP and the USFWS, that the project is being designed to avoid, minimize and mitigate impacts to Critical Habitats, and that the applicant will post a performance bond to ensure no net loss of Critical Habitat value, the proposed project is found to be made consistent with the RMP goals, policies and objectives and NJDEP Preservation Area rules related to Critical Habitat sufficient to be considered consistent with the goals and purposes of the Highlands Act regarding this resource.

SUBPART E LAND PRESERVATION AND STEWARDSHIP

Project Area within Conservation Priority Area? Yes **If yes, percentage?** 15% of project area

Project Area within Special Environmental Zone? No **If yes, identify properties (B/L)**

Project Area includes preserved land? Yes **If yes, identify properties (B/L):** (see comments)

Regional Master Plan Goals, Policies, and Objectives:	C	I	N/A
Policy 1H7: To identify and designate a Special Environmental Zone in the Preservation Area where development shall not occur in order to protect water resources and environmentally sensitive lands and which shall be permanently preserved through use of a variety of tools including, but not limited to, fee simple acquisition, easement acquisition, transfer of development rights programs, and development regulations.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 1H7b: Adopt and enforce development regulations which prohibit the development of those portions of a parcel of land which are located within a Special Environmental Zone.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 1H7c: Require through Plan Conformance, local development review, Highlands Project Review, and NJDEP review under N.J.A.C. 7:38 that development shall not occur within a Special Environmental Zone. In any Special Environmental Zone, any exemption identified through Policy 7F1 or waiver issued under the Highlands Act under Policy 7G1 or 7G2 shall be conditioned upon a determination that the State or local government unit has exhausted all means for the permanent preservation of these lands through use of preservation tools including, but not limited to, fee simple acquisition, easement acquisition, and transfer of development rights.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 1I3: To require conforming municipalities and counties to require conservation or land stewardship easements, enforceable by the Highlands Council and at least one of the following: the appropriate municipality, the County Agriculture Development Board, the SADC, Green Acres, or a non-profit land trust organized pursuant to § 501 (c)(3) of the federal tax code and engaged in the protection of land for the purpose of providing long-term stewardship of important resources as a condition of development approval for lands within parcels proposed for development that are identified for preservation on a proposed site plan or subdivision plat.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments: The existing and proposed ROW do not traverse any Special Environmental Zones. They traverse small amounts of Conservation Priority Areas (High and Moderate). They traverse three State Parks – Long Pond Ironworks State Park (in West Milford and Ringwood), Ramapo State Forest (in Mahwah), and Ringwood State Park (in

Ringwood and Mahwah). The NJDEP has received a request to lease (i.e., “conveyance”) to Tennessee Gas for a period of 25 years the additional ROW that would be needed for this project as it crosses these State-owned properties.

SUBPART F CARBONATE ROCK (KARST) TOPOGRAPHY

Project Area within or contributing to Carbonate Rock Area? Yes

Regional Master Plan Goals, Policies, and Objectives:	C	I	N/A
Policy 1K2: To identify and delineate through local development review and Highlands Project Review land areas that drain surface water into the Carbonate Rock Area, as changes in the quantity, quality and rate of discharge of surface water runoff from upslope lands can impair ground water resources in the Carbonate Rock Area.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Policy 1K4: To ensure through Plan Conformance that municipalities in, or within subwatersheds draining directly to, the Carbonate Rock Area protect public health and safety and the quality of ground waters from inappropriate land uses and pollutant discharges.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 1K4b: Applications for site plan or subdivision approval will include a multi-phased geotechnical site investigation (e.g., test borings, test pits) to locate any potential karst features and potential hazards to public health and safety, structures and ground water quality.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 1K4c: Local development reviews and Highlands Project Reviews and requirements shall ensure that all potential hazards to public health and safety, structures and ground water quality, including but not limited to concentrated surface water flows that dissolve carbonate rock, are fully addressed and mitigated in the construction plans and subsequent approval process, with the maximum emphasis on nonstructural measures, including, but not limited to, avoidance of modifications to the karst features.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 1K4d: Public works projects, including but not limited to water supply, sewerage, stormwater and transportation facilities, shall be constructed and maintained such that the potential for damage from karst features and the contamination of ground water are avoided.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 1K4e: Highlands Project Reviews and requirements and local development reviews (where applicable) shall prohibit new land uses and facilities that constitute unacceptable risks of discharge due to karst topography where karst features have been identified, including but not limited to: Underground storage tanks; Solid waste landfills; Hazardous waste storage and disposal; and Hazardous materials storage and handling.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments: According to the Highlands GIS mapping, the existing and proposed ROW traverse a narrow strip of Carbonate Rock Area in West Milford. In the CMP, the applicant notes that through consultation with the New Jersey Geological Society (NJGS), it was discussed that carbonate rocks are prone to sinkhole development in the project area. Further through consultation with NJGS, it was discussed that while there has been no detailed mapping of sinkholes in Passaic or Bergen Counties, portions of Loop 325 can expect to encounter other solution features where the trench crosses several areas of carbonate bedrock and several geological formations. The applicant notes that due to the specialized nature of pipeline construction and in consideration that only a relatively minor amount of the required construction workspace will be trenched, a full scale geotechnical subsurface exploration program for the project area is not necessary for the planning, design or construction phases of the project. However, it is noted the presence of karst features will be determined during the ditch excavation. During trenching activities, the applicant states that mitigation measures include, but are not limited to, grouting, regrouting and backfilling with supportive fill material. The applicant states that stormwater control measures will be implemented to limit surface water runoff within known karst features. If voids are encountered, then the ditch may be grouted or impermeable plugs may be installed to minimize adverse impacts to karst features from ground water. Additionally, the applicant states that it will not release hydrostatic testing wastewater volumes within those areas identified as karst, as they are susceptible to sinkhole development unless a dewatering structure or energy dissipating device will be used to prevent scouring or erosion. The intent of this program is to achieve the equivalent of RMP requirements for a Phase II investigation.

With the consideration that development of the Carbonate Rock Plan will be coordinated with NJGS, the Highlands Council, and other agencies as appropriate so that the project is designed to avoid, minimize and mitigate impacts to Carbonate Rock Areas, and that the applicant will post a performance bond to ensure that the karst features and ground water are protected, the proposed project is found to be made consistent with the RMP goals, policies and objectives related to Carbonate Rock sufficient to be considered consistent with the goals and purposes of the Highlands Act regarding this resource.

SUBPART G LAKE MANAGEMENT			
Project Area within Lake Management Area? Yes <i>If No, disregard remainder of Lake Management checklist.</i>			
If yes, which Tier: Shoreland Protection Tier Yes		Water Quality Management Tier Yes	
Scenic Resources Tier Yes		Lake Watershed Tier Yes	
Project Area within Lake Community Sub-Zone? No			
If yes, which Tier: Shoreland Protection Tier No		Water Quality Management Tier No	
Scenic Resources Tier No		Lake Watershed Tier No	
Regional Master Plan Goals, Policies, and Objectives:	C	I	N/A
Policy 1L2: To establish tiers of lake management appropriate to management strategies that help protect lake water quality and community value from the impacts of present and future development.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 1L2a: Lake management programs shall use the following management tiers around all Highlands Region lakes of greater than ten acres in size: <ul style="list-style-type: none"> • A Shoreland Protection Tier consisting of an area measured 300 foot or the first property line perpendicular from the shoreline of the lake; • A Water Quality Management Tier consisting of an area measured 1,000 foot perpendicular from the shoreline of the lake, including the shoreland protection tier; • A Scenic Resources Tier consisting of an area measured 300 to 1,000 foot perpendicular from the shoreline of the lake, scaled based upon the view distance from the opposite shoreline, and determined through the size and layout of the lake, with wider portions of lakes having longer view distances; and • A Lake Watershed Tier consisting of the entire land area draining to the lake, through the evaluation of drainage areas using LiDAR topographic analyses or other topographic data where LiDAR data are not available. 	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 1L3: To establish unique standards (as compared to lakes within the Protection and Conservation Zones) for the Lake Community Sub-Zone within the Existing Community Zone within 1,000 feet of lakes, particularly with respect to the Shoreline Protection Tier, to prevent degradation of water quality, harm to lake ecosystems, and promote aesthetic values within the Existing Community Zone.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 1L4: To establish and implement management strategies to help protect lake water quality and ecosystem values from the impacts of present and future development for all lakes.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 1L4a: Implementation of standards through Plan Conformance regarding lake ecosystem and water quality in the Shoreland Protection Tier to address direct and proximate impacts upon the lake, including but not limited to shoreline modification and development (including limits to the hardscaping of shorelines using bulkheads, rip-rap and walls), docks, piers, boathouses, dredging, vegetation removal, and increased impervious cover. Pollutant discharges shall also be addressed, including the potential for contamination from septic systems, cesspools and other wastewater management systems within the tier that are failing or are inadequately designed and constructed. As such systems fail, landowners should be required to provide upgraded treatment (whether on-site or through public or community systems) to minimize pollutant movement to the lake. Standards for the Lake Community Sub-Zone and for the Protection and Conservation Zones may be distinct to the extent necessary to recognize the existence of significant development within the Lake Community Sub-Zone.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 1L4b: Implementation of standards through Plan Conformance regarding land use compatibility and water quality in the Water Quality Management Tier, to prevent or minimize continuous pollutant sources that can contribute pollutants overland or through ground water to the lake from greater distances than the Shoreland Protection Tier.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 1L4c: Implementation of standards through Plan Conformance regarding the protection of visual and scenic resources in the Scenic Resources Tier, including but not limited to requirements for vegetative screening of buildings, building height limitations, and limits on tree and understory removal for reasons other than public health and safety or as the minimum necessary to make reasonable use of the designated building envelope for the parcel proposed for development. Standards for the Lake Community Sub-Zone and for the Protection and Conservation Zones may be distinct to the extent necessary to recognize the existence of significant development within the Lake Community Sub-Zone.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 1L5: To require that conforming municipalities adopt and implement for all lakes the standards applicable to the Shoreland Protection and Water Quality Management Tiers; the standards applicable to the scenic resources tier shall be adopted and implemented for all public lakes (i.e., with shorelines that are not entirely privately-held and managed through a lake association), and for privately-held lakes to the extent feasible under law, recognizing the existence of previously approved lake community development plans.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 1L5a: Shoreland Protection and Water Quality Management Tier requirements shall apply to all new development, regardless of lake ownership.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 1L5b: Scenic Resource Tier requirements shall apply to all lakes with public access and to lakes with no public access that are not entirely managed by a single homeowner or lake community association. For lakes that are privately-held and managed by a single homeowner or lake community association, the scenic resource tier requirements shall be voluntary.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 1L6: To require that conforming municipalities develop and adopt lake restoration plans, with sufficient input from lake community residents and landowners, for each of the municipality's developed lakes that has been identified as water quality impaired, to include watershed delineation, description of point and nonpoint sources of pollution in the watershed, lake monitoring schedules, existing and proposed in-lake management techniques, and recommended watershed best management practices. TMDLs adopted by the NJDEP to address known pollution problems may be used as lake restoration plans. For lakes that are privately-held and managed by a single homeowners or lake community association, the municipality may require that the association share in or assume the costs of developing such plans.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Policy 1M4: To establish and implement performance and development standards through local development review and Highlands Project Review for shoreline uses which achieve compatibility among shoreline activities and nearby neighborhoods.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Comments: To ensure that water quality within Lake Management Areas is protected, the applicant has indicated that it will construct the project facilities in accordance with its ECP as well as all applicable regulatory approvals. The applicant notes that standard construction techniques, such as use of erosion and sedimentation controls, dewatering structures, trench plugs and water bars, will ensure that both stormwater and ground water are managed in a manner that minimizes the potential for adverse impacts on water quality.

Where the pipeline will be below the Monksville Reservoir, the applicant states that horizontal directional drilling (HDD) will be used to avoid trenching and disruption within the reservoir itself. The applicant notes and the Highlands Council concurs that the greatest advantage of the HDD crossing technique is the fact that open cut trenching and other equipment disturbance within sensitive resource areas is not necessary, and, as a result, environmental impact to sensitive resource areas is minimized. Further, by co-locating the proposed loop adjacent to the existing Loop 325, including the use of HDD beneath the Monksville Reservoir, the amount of disturbance associated with the installation of the pipeline is minimized as compared to other alternatives for pipeline installation, such as constructing the line in a new land-based corridor through mature forests typical of the area. This includes limiting the amount of temporary disturbance to land required for temporary work space. Additionally, co-location of the Loop 325 facilities within the existing permanent easement limits long-term impacts associated with pipeline operations and ROW maintenance.

The applicant does note that a greater amount of equipment staging is required for HDD than the open cut crossing method. A minimum workspace footprint of 200 feet wide by 250 feet long is required at the entry and exit points to support the drilling operation. The amount of workspace required can vary significantly from site to site based on site-specific conditions.

With consideration that the ECP will be implemented with the Highlands Council and other regulatory agencies, that the contingency plan will address the potential impacts of adverse events, and that the applicant will post a performance bond to ensure that water resources are protected, the proposed project is found to be made consistent with the RMP goals, policies and objectives related to water quality and shoreline protection for Highlands lakes, and the goals and purposes of the Highlands Act regarding this resource.

PART 2 WATER RESOURCES AND WATER UTILITIES

SUBPART A WATER RESOURCES AVAILABILITY

Source HUC14(s):	Net Availability (MGD):	HUC14 Constraint - Current Deficit Area (Y/N):	HUC14 Constraint - Existing Constrained Area (Y/N):	Conditional Availability (MGD):
1.				

Comments: N/A. The proposed project would not result in the expansion or creation of a public water supply system, public wastewater collection and treatment system or a community on-site treatment facility. In addition, the proposed project would not result in the generation of wastewater nor require a permanent water source. Temporary water sources will be required for hydrostatic testing of the pipeline, and will be withdrawn in compliance with NJDEP water allocation rules and temporary use permits, which must be consistent with the RMP. The applicant will place a priority on withdrawing temporary water supplies from either a reservoir or from high-flow skimming of non-Category 1 streams to minimize or avoid impacts, and will place a priority on replacing flows to the original source. The applicant has stated that it will consult with the Highlands Council regarding the temporary water source. However, temporary water uses do not affect water availability as defined and measured by the RMP.

SUBPART B PROTECTION OF WATER RESOURCES QUANTITY

Project Area includes Prime Ground Water Recharge Area? Yes

Regional Master Plan Goals, Policies, and Objectives:	C	I	N/A
Policy 2D3: To protect, enhance, and restore the quantity and quality of Prime Ground Water Recharge Areas.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 2D3c: Implement master plans and development review ordinances through Plan Conformance that protect Prime Ground Water Recharge Areas and minimize the potential for disruption of recharge in such areas by development.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Objective 2D3g: Require through Plan Conformance and local health ordinances, that existing land uses that have a significant potential to result in major discharges of pollutants to ground water or to the land surface (including but not limited to non-sanitary wastewater effluent and any major sources of potential discharges such as spills and leaks), such that they may degrade ground water quality within a Prime Ground Water Recharge Area, shall incorporate ongoing management of toxic chemical sources and prohibition of unregulated discharges, so that the potential for ground water contamination is minimized and the opportunity for discharge discovery and control is maximized.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 2D4: To apply standards through Plan Conformance, local development review and Highlands Project Review to protect, restore and enhance the functionality and the water resource value of Prime Ground Water Recharge Areas by restricting development and uses of land within a Prime Ground Water Recharge Area that reduce natural ground water recharge volumes or may directly or indirectly contribute to or result in water quality degradation.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 2D4a: Development shall not occur in Prime Ground Water Recharge Areas unless necessary to avoid Critical Habitat, Highlands Open Waters Buffers and Moderately and Severely Constrained Steep Slopes.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 2D4b: Any development activity approved to occur in a Prime Ground Water Recharge Area shall provide an equivalent of 125% of pre-construction recharge volumes for the affected Prime Ground Water Recharge Area of the site within the following areas, in order of priority: (1) the same development site where feasible; (2) the same HUC14 subwatershed, or (3) an interrelated HUC14 subwatershed as approved by the Highlands Council where no feasible option exists in the same HUC14 subwatershed. This requirement shall apply to all portions of the Prime Ground Water Recharge Area where the recharge is disrupted through impervious surfaces, routing of stormwater runoff and recharge from natural flow paths, and other similar changes.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 2D4c: Require through Plan Conformance, local development review and Highlands Project Review that the disruption of Prime Ground Water Recharge Area shall be minimized through the implementation of Low Impact Development Best Management Practices meeting the requirements of Objective 2D3a.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 2D4d: Require through Plan Conformance, local development review and Highlands Project Review that the disruption of Prime Ground Water Recharge Area, after conformance with Objectives 2D4a, 2D4b and 2D4c is achieved, shall be limited to no greater than 15% of the Prime Ground Water Recharge Area on the site and shall be preferentially be sited on that portion of the Prime Ground Water Recharge Area that has the lowest ground water recharge rates and the lowest potential for aquifer recharge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 2D4e: Prohibit through Plan Conformance, local development review and Highlands Project Review the expansion or creation of public water supply systems or public wastewater collection and treatment systems or community-based on-site wastewater facilities into a Prime Ground Water Recharge Area within the Protection or Conservation Zone within the Planning Area except as provided for in Policy 2J4 with Objectives 2J4a through 2J4d, and Policy 2K3 with Objectives 2K3a through 2K3e, and within the Preservation Area except as provided for in Policy 2I1 and Objectives 2I1a and 2I1b.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 2D4f: Prohibit through Plan Conformance, local development review and Highlands Project Review new land uses, including those identified through Objective 2D3d, that have a significant potential to result in the discharge of persistent organic chemicals sources (including but not limited to existing discharges of industrial or other non-sanitary wastewater effluent) to ground water or to the land surface within a Prime Ground Water Recharge Area, such that they may degrade or contribute to the degradation of ground water quality.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 2D4g: Require conformance with applicable components of regional stormwater management plans, where applicable, as a mandatory requirement for any site plan application.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 2D4h: Achieve a net improvement in ground water recharge volume and maintenance of water quality as required through compliance with and implementation of any related provisions of an adopted regional stormwater plan.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 2D4i: Achieve a net improvement in ground water volume and maintenance of water quality through redevelopment, enhanced infiltration, pretreatment or other means where feasible.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Comments: Much of the existing and proposed ROW is mapped as Prime Ground Water Recharge Area. The applicant states that since there is no new impervious area associated with the proposed project, and all disturbed areas will be revegetated or restored upon completion of construction, there will be no permanent decrease in the ground water recharge area. With respect to potential temporary impacts, the applicant proposes a Water Resources Quantity Protection Plan as part of the CMP. This plan will incorporate measures into the project design to ensure protection of ground water recharge volume, which include:</p> <ul style="list-style-type: none"> • Restoration of the site to maintain pre-construction hydrology. • Use of slope and trench breakers to slow down the flow of water and increase stormwater infiltration. • The topsoil and subsoil shall be tested for compaction by a third-party monitor within each segment of Prime Ground Water Recharge Area crossed by the project. Tests shall be conducted at intervals sufficient to determine the need for decompaction. • If necessary, soil shall be decompacted. The subsoil shall be decompacted prior to final restoration of the pre-construction contours and shall be consistent with adjacent soils at the limits of the ROW. Test results will be provided to the Council. <p>To mitigate for the additional 25% of recharge volume as required by the RMP, the applicant is proposing to acquire and to protect an area of land within a designated Prime Ground Water Recharge Area. By protecting the property against development, the applicant states that it will be preventing potential impacts to ground water recharge.</p>			

Additionally, the applicant notes that should the property acquired contain previous development such as a residence or impervious area, it will remove all structures, driveways, parking areas and lawns and replace them with grassland or forest to provide a significant increase in the recharge volume than the current condition of such property. The applicant will coordinate with the Highlands Council to ensure that the selected parcel provides significant additional ground water recharge volume. The applicant indicated in the CMP that if a suitable parcel is not identified, it will provide monetary compensation for mitigation for the additional 25% of recharge volume. For the 300 Line project previously approved by the Highlands Council, the agreed upon price per acre was \$7,500, as reflecting land values in that area of the Highlands Region. It is important to note that it is the position of the Highlands Council that if the applicant cannot find suitable lands to purchase, that the Council will attempt to do so before agreeing to accept monetary compensation.

In the CMP, the applicant states that is currently in the process of calculating the groundwater recharge volumes in mapped Prime Ground Water Recharge Areas crossed by the project as wells as those associated with potential mitigation properties. The applicant states that upon completion of the calculations, they will be submitted to the Council in a supplement to the CMP that will also include an assessment and justification for the use of preserved lands to mitigate for the additional 25% recharge volume requirement.

With consideration that the Water Resources Quantity Protection Plan will be implemented in coordination with the Highlands Council and other regulatory agencies, and that the applicant will post a performance bond to ensure that ground water quality is protected, the proposed project is found to be made sufficiently consistent with the RMP goals, policies and objectives related to ground water, and the goals and purposes of the Highlands Act regarding this resource.

SUBPART C WATER QUALITY

Project Area within Wellhead Protection Area? Yes

If yes to above, check all that apply: Tier 1 Tier 2 Tier 3

Name of Nearest Waterway(s) (1000 feet of Project Area): Numerous waterways

SWQS Classification:

Description of Impairments, or TMDL:

Regional Master Plan Goals, Policies, and Objectives:	C	I	N/A
Policy 2G2: To reduce or avoid water quality impacts using requirements for water quality protection measures for new land uses through local development review and Highlands Project Review.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Policy 2G3: To adopt and implement water quality protections through Plan Conformance, local development review and Highlands Project Review.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 2G3a: Prohibit land uses that would increase pollutant loadings to waters for which TMDLs have been adopted by the NJDEP unless in compliance with the relevant TMDL.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 2G3b: Ensure that new land uses draining to a stream designated as impaired but lacking a TMDL (i.e., Sublist 5) avoid increased pollutant loadings for the parameter or parameters for which a TMDL is required.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 2G3c: Water Quality Management Plans, Wastewater Management Plans or amendments shall demonstrate that the proposed service area will not directly or indirectly support development that would be in violation of an adopted TMDL.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 2G5: To adopt and implement stormwater management controls through Plan Conformance, local development review and Highlands Project Review.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 2G5a: Require recharge of clean stormwater rather than contaminated stormwater wherever feasible to meet stormwater management requirements, and to pretreat contaminated stormwater wherever its recharge is required.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 2G5b: Require Low Impact Development and other Best Management Practices standards for stormwater management to minimize the discharge of stormwater-entrained pollutants to ground and surface waters.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 2G5c: Implement agricultural best management practices for water conservation, water reuse, nutrient and pesticide application, animal waste management, environmental restoration, pollution assessment and prevention, and irrigation efficiency in farm operations for the protection of ground and surface water quality.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 2G6c: Require conforming municipal and county master plans and development regulations to incorporate relevant TMDLs, additional water quality protection measures and wellhead protection for public water supply wells and nitrate standards as development standards.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 2H2: To develop and implement, through Plan Conformance, local development review and Highlands Project Review, resource protection measures to protect and enhance ground water and water supply resources within Wellhead Protection Areas consistent with the source water assessments for each water supply source.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 2H2a: Prohibit land uses that have a significant potential to result in the discharge of pathogens (including, but not limited to, septic systems and engineered stormwater infiltration from surfaces with significant potential for contact with pathogenic	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

contaminants) to ground water or to the land surface within a designated Tier 1 Wellhead Protection Area, such that they may degrade or contribute to the degradation of ground water quality. Require that the construction of sewer lines within Tier 1 of a Well Head Protection Area prevent seepage of untreated sewage into ground water.			
Objective 2H2b: Prohibit land uses that have a significant potential to result in the discharge of persistent organic or toxic chemicals sources (including but not limited to existing discharges of industrial or other non-sanitary wastewater effluent) to ground water or to the land surface within a designated Tier 2 Wellhead Protection Area, such that they may degrade or contribute to the degradation of ground water quality.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 2H2c: Require that land uses that have a significant potential to result in major discharges of persistent organic or toxic pollutants to ground water or to the land surface (including but not limited to non-sanitary wastewater effluent and any major sources of potential discharges such as spills and leaks), such that they may degrade ground water quality within a designated Tier 3 Wellhead Protection Area, shall incorporate ongoing management of toxic chemical sources and prohibition of unregulated discharges, so that the potential for ground water contamination is minimized and the opportunity for discharge discovery and control is maximized.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 2H4a: Require site specific and municipal stormwater management plans to address wellhead protection requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Policy 2H5: To require that conforming municipalities revise master plans and development regulations to address wellhead protection requirements.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 2H5b: Restrict development activities that pose threats to the water quality of public water supply wells.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 2H5c: Ensure that development activities and existing land use activities implement best management practices to protect the quality of ground water within Wellhead Protection Areas.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 2H5d: Amend Areawide Water Quality Management Plans or Wastewater Management Plans for conforming municipalities and counties to ensure that any activity associated with the proposed service area will not adversely affect a Wellhead Protection Area.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Comments: Portions of the project area are located within areas mapped as Wellhead Protection Areas (Tiers 1, 2 and 3, with 2, 5 and 12 year times of travel to the well, respectively). With respect to wellhead protection, the applicant states that the project is not anticipated to adversely affect ground water quality and supply. The pipeline will convey natural gas, which is not a persistent organic or toxic substance that would discharge to ground water or the land surface. The applicant proposes to implement construction practices designed to reduce and mitigate potential impacts to ground water during construction as detailed within the ECP. Tennessee Gas and its contractors will adhere to these practices related to ground water protection including specifications for trench breakers and dewatering as well as restrictions on refueling and storage of hazardous substances.</p> <p>According to the CMP, during the initial landowner contacts for survey permission, the applicant's land representatives requested information on the location of wells and septic systems from landowners whose residences were in close proximity to the proposed pipeline loops and work spaces. In many locations, this information was used to reduce work areas or re-align the pipeline route to avoid impacts to these structures. The applicant notes that owners of wells identified that are within 150 feet of the construction work area shall be offered pre- and post construction well testing.</p> <p>The applicant states that all equipment used in construction of the pipeline will be refueled and lubricated within the limits of the ROW at a minimum distance of 100 feet from all wetlands and waterbodies. The applicant further notes that auxiliary fuel tanks will be used to reduce the frequency of refueling operations. Also, the applicant states that the proposed impact minimization measures will prevent the discharge of hydraulic fluids or fuels from leaving the ROW or leaching into the ground water.</p> <p>With consideration that avoidance, minimization and mitigation measures relative to water quality are identified in the CMP and will be implemented in coordination with the Highlands Council and other regulatory agencies, that the applicant will comply with permit conditions as issued by NJDEP, that the contingency plan will address the potential impacts of adverse events, and that the applicant will post a performance bond to ensure that water quality is adequately protected, the proposed project is found to be made consistent with the RMP goals, policies and objectives related to water quality, and the goals and purposes of the Highlands Act regarding this resource.</p>			

SUBPART D SUSTAINABLE DEVELOPMENT AND WATER RESOURCES			
WATER UTILITY			
Potable Water Supply? NA		Domestic? NA	
Source Water HUC(s): NA			
Public Community Water System? Yes		If PCWS, Name of Facility:	
PCWS ID No:		Total Projected Water Demand of Project (MGD):	
Comments: N/A. The proposed project would not result in the expansion or creation of a public water supply system, public wastewater collection and treatment system or a community on-site treatment facility. In addition, the proposed project would not result in the generation of wastewater nor require a permanent water source.			
WASTEWATER UTILITY			
NJPDES Permit Number: NA		Projected Flow of Project (GPD): NA	
HDSF Facility? NA		HDSF Available Capacity (MGD): NA	
Subject to Allocation Agreement? NA		Capacity Allocated from HDSF (MGD): NA	
Extent of HDSF Service Area Included in WMP: Full <input type="checkbox"/> Partial <input type="checkbox"/>			
Wastewater Treatment Facility: NA			
<u>Service Area:</u>		<u>Wastewater Discharge Flow (MGD):</u>	
NJPDES-DGW:	Existing <input type="checkbox"/> Proposed <input type="checkbox"/>	Existing:	Increase:
NJPDES-DSW:	Existing <input type="checkbox"/> Proposed <input type="checkbox"/>	Existing:	Increase:
Comments: N/A. The proposed project would not result in the expansion or creation of a public water supply system, public wastewater collection and treatment system or a community on-site treatment facility. In addition, the proposed project would not result in the generation of wastewater nor require a permanent water source.			
SEPTIC SYSTEM YIELD			
Proposed Nitrate Target(s) (mg/l): NA		Annual Recharge Rate Used: Drought <input type="checkbox"/> Average <input type="checkbox"/>	
	<u>Protection Zone</u>	<u>Conservation Zone</u>	<u>Existing Community Zone</u>
Municipal Septic System Density (acre/unit)			
HC Septic System Density (acre/unit)			
Municipal Septic System Yield (units)			
HC Septic System Yield (units)			
Comments: NA. Septic System Yields are not applicable.			
PART 3 AGRICULTURAL RESOURCES			
Area within Agricultural Resource Area? No		Area within Agricultural Priority Area? No	
If yes, percentage? %		If yes, percentage? %	
Project Area includes preserved farmland? No If yes, identify properties (B/L):			
Affects Farm Unit >250 acres? No		Includes Important Farmland Soils? Yes	
Agricultural Uses? No			
Comments: While the existing ROW traverses small pockets of Important Farmland Soils, there are no Agricultural Resource Areas within the project area, and the Agricultural Resources policies and objectives are not applicable to the proposed project.			

PART 4 HISTORIC, CULTURAL, ARCHAEOLOGICAL, AND SCENIC RESOURCES				
Presence of Resources: Yes		Highlands Historic District Polygons Absence		
Highlands Historic Properties Polygons Absence		Highlands Historic Property Points Presence		
Archaeological Grids Presence		Highlands Scenic Resource Inventory Presence		
Description of Resources: According to the Highlands Council GIS mapping, the existing and proposed ROW traverse an archaeological grids (in West Milford) and one Historic Property Point in Ringwood. It also traverses several parcels that are listed in the Highlands Scenic Resource Inventory.				
Regional Master Plan Goals, Policies, and Objectives:		C	I	N/A
Policy 4A3: To ensure through local development review, where a municipality has adopted an historic preservation ordinance under Policy 4C2, that human development does not adversely affect the character or value of resources which are listed on the Highlands Historic and Cultural Resource Inventory to the maximum extent practicable.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 4A3a: All development and redevelopment applications shall include submission of a report identifying potential historic, cultural and/or archaeological resources on the subject property or immediately adjacent properties.		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Policy 4A4: To require that the impact of proposed human development on the historic and cultural resources of the Highlands Region be addressed during local development review and Highlands Project Review and approval.		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 4A4a: All applications for site plan or subdivision approval shall include identification of any cultural, historic or archaeological resources in the Highlands Region, which are listed on the Highlands Historic and Cultural Resource Inventory and may be affected by the proposed development.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 4A4b: Where a municipality has adopted an historic preservation ordinance under Policy 4C2, all development which affects identified cultural, historic sites/districts, or archaeological resources shall comply with minimum standards for the preservation of the affected resources.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 4B3: To ensure that human development does not adversely affect the character or value of resources which are listed on the Highlands Scenic Resources Inventory.		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Policy 4B5: To require that the impact of proposed human development on the scenic resources of the Highlands Region be addressed during local development review and Highlands Project Review and approval.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 4B5a: All development applications shall include identification of any scenic resources in the Highlands Region that are listed on the Highlands Scenic Resources Inventory and may be affected by the proposed development.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 4B5b: All development which affects identified scenic resources shall comply with minimum standards for the preservation of the affected resources.		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 4B5c: Any proposed action that requires federal permits, involves federal grants, or involves other federal actions that may impact the resource values of the Musconetcong National Scenic and Recreational River and the Lower Delaware National Scenic and Recreational River, pursuant to section 10(a) of the National Wild and Scenic Rivers Act, shall require review by the National Park Service, National Wild and Scenic Rivers Program.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Comments: According to the Highlands Council GIS mapping, the existing and proposed ROW traverse an archaeological grid (in West Milford) and one Historic Property Point in Ringwood. It also traverses several parcels that are listed in the Highlands Scenic Resource Inventory.				
<p>The applicant notes that in addition to Section 106 requirements, cultural resources investigations were conducted for the project in accordance with the FERC's Office of Energy Project's Guidelines for Reporting on Cultural Resources Investigations, and the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation. The applicant states that it has conducted consultations with all applicable federal, state and tribal agencies relative to the potential presence of sensitive cultural or archaeological resources and that it has conducted field investigations of the Loop 325 Segment survey corridor.</p> <p>During Phase 1 surveys, the applicant has identified 11 archaeological sites and three architectural resources. The applicant states that (as of the time of application) the Phase 1 surveys on Loop 325 are partially complete, with 7.2 miles having been surveyed of the total length of 7.7 miles. According to the applicant, the remaining portions of the ROW that remain to be surveyed are "No Access" properties; additional ancillary facilities also remain to be surveyed. The applicant is recommending no additional survey work regarding four of the 11 archaeological sites, for reasons that are not specified. The applicant noted that it would attempt to avoid affecting the remaining seven archaeological sites, but noted that if project-related circumstances arise that prevent avoidance, additional State Historic Preservation Office (SHPO) consultation and concurrence would be required, as well as Phase II cultural resource investigations to fully determine the extent and significance of the sites. The applicant noted that the three architectural resources are located on proposed access roads. It is stated that one of these resources is a structure that will be evaluated before and after construction vehicles use the access road to ensure no vibrational damages have occurred. For the remaining two architectural resources, the applicant intends that only pick-up trucks and SUVs would be permitted to use the</p>				

associated access roads to avoid potential damage due to collision or vibration. The applicant notes in the CMP that the privileged and confidential nature of the potentially significant cultural resources prevents any additional detailed discussion as it relates to the CMP; however the applicant notes that the results of the field investigations have been conferred to the SHPO for concurrence.

The applicant acknowledges that cultural resource deposits could be discovered during project construction or maintenance activities, particularly during excavation. Thus, the applicant has prepared and submitted to SHPO for approval and concurrence a document titled "Procedures Guiding the Discovery of Unanticipated Cultural Resources and Human Remains." This document details specific procedures that must be followed in the case of an unanticipated discovery to maintain compliance with all applicable federal and state laws governing cultural resources. These procedures include the immediate suspension of all activities at the discovery site, agency notification requirements including applicable contact information, and additional assessments of the discovered materials by a qualified cultural resources expert. That document has been incorporated into the applicant's construction conditions and procedures proposed for the project and will be implemented during project construction upon final review and approval by the applicable federal and state regulatory agencies. The applicant notes that all additional correspondence between Tennessee and SHPO shall be provided to the Highlands Council for review and comment.

With respect to scenic resources, the applicant notes that permanent visual impacts associated with installation of the pipeline loop will not occur within non-forested areas; however, tree clearing for construction and maintenance of the permanent ROW in forested areas may result in temporary visual impacts. To minimize this potential, the applicant has sited the proposed loop segment adjacent to the existing 300 Line corridor to the greatest extent possible to limit the amount of tree clearing. This also concentrates utilities in existing areas and reduces the degree of disturbance within previously undisturbed areas. The applicant states that temporary impacts of limited duration will be mitigated through restoration practices to revegetate the ROW in a timely manner in accordance with the measures identified within the CMP.

In consideration of the work done to date in coordination with SHPO, the implementation of the described mitigation measures, and the commitment to coordinate with the Highlands Council, the proposed project, as amended, is sufficient to be found consistent with the goals and purposes of the Highlands Act regarding historic, cultural, archaeological and scenic resources.

PART 5 TRANSPORTATION

Project supports local transportation/transit infrastructure? NA

Comments: NA. Transportation issues are not applicable.

PART 6 FUTURE LAND USE

SUBPART A LAND USE CAPABILITY ZONES

Project Area within which Land Use Capability Zone or Sub-Zone? (check all that apply):

Protection Zone Conservation Zone Existing Community Zone
 Conservation – Environmentally Constrained Sub-Zone Existing Community – Environmentally Constrained Sub-Zone
 Lake Community Sub-Zone Wildlife Management Sub-Zone

Regional Master Plan Goals, Policies, and Objectives:

	<u>C</u>	<u>I</u>	<u>N/A</u>
Policy 6C1: To limit new human development in the Protection Zone to redevelopment, exempt activities, and environmentally-compatible low density new land uses, in accordance with RMP resource protection needs and water quality and quantity capacity constraints and to ensure that the impacts of development using exemptions under the Highlands Act (see Policy 7F1) are considered in regional protection measures.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 6C1a: Centers in the Protection Zone, potentially including clustered development, shall be at densities appropriate to the Zone, the community character, the State Development and Redevelopment Plan, and the use of septic systems or community wastewater systems.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Policy 6C2: To ensure through Plan Conformance, local development review and Highlands Project Review that any future development or redevelopment which does occur in a Protection Zone is subject to standards and criteria which protect the land and water resources of the Protection Zone from any potential adverse impact to the maximum extent possible.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 6D3: To limit through Plan Conformance, local development review and Highlands Project Review the use and development of lands within the Conservation Zone to agriculture use and development, including ancillary and support uses, redevelopment of existing developed areas, and environmentally-compatible low density land uses that are to the maximum extent possible achieved in compact development patterns, to be designed and developed in a manner which is compatible with the long	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

term use of adjacent land for agricultural purposes.			
Objective 6D3b: Centers in the Conservation Zone, potentially including clustered development, shall be at densities appropriate to the Zone, the community character, the State Development and Redevelopment Plan, and the use of septic systems or community wastewater systems.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 6F3: To ensure that development activities within the Existing Community Zone are subject to standards and criteria which ensure that development and redevelopment incorporate smart growth principles and do not adversely affect natural resources.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Policy 6F4: To ensure that development and redevelopment within the Existing Community Zone are served by adequate public facilities including water supply, wastewater treatment, transportation, educational and community facilities.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 6F5: To ensure that development and redevelopment in the Existing Community Zone are compatible with existing community character.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 6F6a: Center based development initiatives shall be planned within the Existing Community Zone at densities appropriate to the Zone, the community character, the State Development and Redevelopment Plan. Densities of five dwelling units and above are encouraged, and are required in areas designated as voluntary TDR Receiving Zones where TDR benefits are sought under the Highlands Act.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments: The existing and proposed ROW traverse the Protection Zone in the Preservation Area. Policy 6C1 states “to limit new human development in the Protection Zone to redevelopment, *exempt activities* [emphasis added], and environmentally-compatible low density new land uses...” The purpose of this review is to determine if the proposed project is consistent with the goals of the Act in order to be eligible for Exemption #11. The second part of Policy 6C1 states “...to ensure that the impacts of development using exemptions under the Highlands Act (see Policy 7F1) are considered in regional protection measures.”

The proposed project integrates a CMP. The draft CMP has been prepared and will be implemented consistent with the Highlands Regional Master Plan (RMP) using the approach of avoid, minimize and mitigate and providing a mechanism, in the form of a plan, for identifying the specific resource issues, the means to avoid and minimize the specific impact, and ultimately the ability to define ways that would help mitigate unavoidable environmental impacts. The development and implementation of the CMP, in coordination with the various regulatory agencies, renders the proposed project consistent with the RMP goals, policies and objectives related to Land Use Capability Zones, and the with the goals and purposes of the Act.

SUBPART C REGIONAL GUIDANCE FOR DEVELOPMENT AND REDEVELOPMENT

Regional Master Plan Goals, Policies, and Objectives: (it is important to note the policy regarding discretionary growth - Policy 6H7 Provisions and standards relating to regional growth activities which increase the intensity of development shall be discretionary for conforming municipalities and counties):	C	I	N/A
Policy 6H1: To protect, restore, or enhance sensitive environmental resources of the Highlands Region, including but not limited to Forests, Critical Habitat, Highlands Open Waters and their buffers, Riparian Areas, Steep Slopes, Prime Ground Water Recharge Areas, Wellhead Protection Areas, and Agricultural Resource Areas.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 6H1b: Prevent the extension or creation of water and wastewater utility services in the Protection Zone, Conservation Zone and Environmentally Constrained Sub-Zones of the Planning Area, unless they meet the requirements of Policy 2J4 with Objectives 2J4a through 2J4d, and Policy 2K3 with Objectives 2K3a through 2K3e, and will maximize the protection of agricultural and environmentally sensitive resources.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 6H1d: Cluster and conservation design development plans and regulations shall consider existing community character, incorporate smart growth design principles, and require Low Impact Development including but not limited to: locating development adjacent to existing infrastructure such as water, wastewater, transportation, and public facilities to limit the degree of new impervious surface, and permitting smaller residential lots in order to incorporate community open space and existing natural resources into the design.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 6H3: To require conforming municipalities to include site development programs, such as clustering and lot averaging, to protect natural and agriculture resources.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 6H6: To integrate public parks and green spaces into development and redevelopment projects and ensure restoration of impaired natural resources to the extent required by law, at a minimum, and where feasible to a greater extent to maximize long term value of the project.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 6H7: Provisions and standards relating to regional growth activities which increase the intensity of development shall be discretionary for conforming municipalities and counties.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 6H8: Regional growth, where accepted through local planning and regulations, should identify opportunities to maximize land use intensity while protecting natural features and community character.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 6H8a: Development and redevelopment initiatives shall encourage the use of Highlands Development Credits as a means to enhance the existing or adjacent community while protecting local and regional natural resources.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 6H8b: Preparation and implementation of standards ensuring that development protects environmentally sensitive resources in all Land Use Capability Zones and Sub-Zones.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Policy 6H9: To incorporate smart growth principles and green building design and technology in development and redevelopment initiatives.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Comments: The proposed project is being designed such that its implementation will be protective of Forests, Critical Habitat, Highlands Open Waters and their buffers, Riparian Areas, Steep Slopes, Prime Ground Water Recharge Areas, and Wellhead Protection Areas to the greatest extent feasible for a linear project.			
SUBPART D REDEVELOPMENT			
Locally Designated Redevelopment Area? No If yes, name of site(s):			
Highlands Designated Redevelopment Area? No If yes, name of site(s):			
Highlands Contaminated Site Inventory Tier 1 or Tier 2 Site(s)? No If yes, name of site(s):			
Comments: N/A. Redevelopment issues are not applicable.			
SUBPART E SMART GROWTH			
Is the municipality involved in the State Planning Commission Plan Endorsement (PE) process? No			
If yes, status of PE process:			
Does the project area include a State Planning Commission designated or expired center? No			
If yes, center expiration date: 00/00/0000			
Regional Master Plan Goals, Policies, and Objectives:	C	I	N/A
Policy 6N2: To require municipalities and counties to adopt stormwater management Low Impact Development standards to preserve or mimic the natural hydrologic features and characteristics of the land.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 6N2a: Implementation of on-site stormwater management features that maintain, restore and enhance the pre-existing natural drainage patterns of the site.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 6N2b: Limitations on the amount of impervious cover allowed on a site as a means to protect and increase stormwater infiltration and reduce stormwater runoff.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 6N2c: Minimum requirements for site-specific hydrologic studies during local development review and Highlands Project Review which identify the velocity, volume and pattern of water flow into, through, and off of the parcel proposed for development.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 6N2d: Minimum requirements that stormwater management systems employ a "design with nature" approach.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 6N2e: Minimum requirements for use of grass channels, dry swales, wet swales, infiltration basins, bio-swales and water gardens, green roofs, and other low impact approaches to attenuate and control stormwater and provide multiple environmental benefits.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Policy 6N3: To require through Plan Conformance that municipalities and counties adopt Low Impact Development practices to minimize land disturbance during construction activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 6N4: To require through Plan Conformance that municipalities and counties adopt LID best management practices where disturbance of Highlands resources is proposed, including but not limited to Steep Slopes, forest resources, Critical Habitat, Highlands Open Waters and Riparian Areas, and Prime Ground Water Recharge Areas.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 6N5: To require through Plan Conformance that municipalities and counties incorporate programs for community and neighborhood design that support a variety of housing options, mixed uses, redevelopment, adaptive re-use of historic sites and structures, and infill development in their master plans and development regulations.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
General Comments: The applicant indicates that that it has developed a project-specific ECP that is based on industry standards pertaining to erosion control, stormwater management, and post-construction best management practices. The applicant notes that there would be no new impervious surfaces associated with the project; therefore there would be no structural stormwater management facilities. The applicant states that pipeline construction incorporates a "design with nature" approach by implementing temporary stormwater control measures that ensure the control of both stormwater runoff rate and volume. Standard industry practices such as water diversion berms, temporary and permanent trench plugs, and permanent water bars would be used to manage stormwater during construction. The ECP provides narrative description of the stormwater management practices that would be implemented during construction and also provides typical details of the facilities that may be used. With consideration that: 1) the applicant has developed and will implement a project-specific ECP that is based on industry standards pertaining to erosion control, stormwater management, and post-construction best management practices; 2) the ROW management plan will improve the ecological benefits of the ROW in keeping with a "design with nature" approach; 3) a contingency plan will address the potential impacts of adverse events; and 4) the applicant will post a performance bond to ensure that stormwater quality will be adequately treated, the proposed project is found to be made consistent with the RMP goals, policies and objectives related to smart growth, and the goals and purposes of the Highlands Act regarding this issue.			

SUBPART F HOUSING AND COMMUNITY FACILITIES			
Does the project area include an affordable housing site? No 3rd Round Status: NA			
Comments: The proposed project is exempt from the provisions of New Jersey's affordable housing laws, as it is public utility. The applicant shall provide a Non-Residential Development Fee Certification/Exemption form to verify the exempt status of the project.			
PART 7 LANDOWNER EQUITY			
Is the project exempt from the Highlands Act? Subject of this review			
Does the project support the use of Highlands Development Credits? NA			
Regional Master Plan Goals, Policies, and Objectives:	C	I	N/A
Objective 7F1c: Preservation Area exemptions issued by the NJDEP in accordance with N.J.A.C. 7:38, shall be required, where appropriate, prior to consideration of a local development review or a Highlands Project Review. Guidance shall specify the exceptions where a review may proceed absent an exemption determination from the NJDEP.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 7F1d: Planning Area exemptions, issued by the Highlands Council, shall be required, where appropriate, prior to consideration of a local development review or a Highlands Project Review. Guidance shall specify the exceptions where a review may proceed absent such an exemption determination. Applications for exemptions submitted to the Highlands Council shall be based upon the application requirements exemptions codified in N.J.A.C. 7:38.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objective 7F1f: Activities authorized under exemptions #9 and #11, which require a finding that the activity is consistent with the goals and purposes of the Highlands Act, shall be based upon a finding that the proposed activities are consistent with Highlands Act, the RMP, any rules or regulations adopted by the NJDEP pursuant to the Highlands Act, or any amendments to a master plan, development regulations, or other regulations adopted by a local government unit specifically to conform them with the RMP.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Policy 7G1: For the Preservation Area, coordinate with NJDEP during Highlands permit review for any major Highlands development including the review of waivers on a case-by-case basis: 1) if determined to be necessary in order to protect public health and safety; 2) for redevelopment in certain previously developed areas as identified by the Highlands Council, or 3) in order to avoid the taking of property without just compensation.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 7G2: For both the Preservation Area and the Planning Area, a waiver may be issued by the Highlands Council on a case-by-case basis from the requirements of the RMP or any amendments to a master plan, development regulations, or other regulations adopted by a local government unit specifically to conform them with the RMP: 1) if determined to be necessary in order to protect public health and safety; 2) for redevelopment in certain previously developed areas as identified by the Highlands Council, or 3) in order to avoid the taking of property without just compensation. Any waiver issued shall be conditioned upon a determination that the proposed development meets the requirements prescribed for a finding as listed in Section 36.a of the Highlands Act to the maximum extent possible.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 7G3: For both the Preservation Area and the Planning Area during local development review, any variance or exception issued shall be conditioned upon a written determination, specifically included in an approving resolution, that the proposed development meets the requirements prescribed for a finding as listed in Section 36.a of the Highlands Act to the maximum extent possible.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Comments: Objective 7F1c is under consideration by NJDEP, with consultation by the Highlands, which is the subject of this review.			
PART 8 SUSTAINABLE ECONOMIC DEVELOPMENT			
Regional Master Plan Goals, Policies, and Objectives:	C	I	N/A
Policy 8A1: To maintain and expand the existing job and economic base by promoting appropriate, sustainable, and environmentally compatible economic development throughout the Highlands Region.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Policy 8A2: To preserve the high quality of life in the Highlands Region through economic planning of the RMP.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 8A3: To identify and pursue state and federal programs that offer financial and/or technical assistance for sustainable economic development in the Highlands Region.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 8A5: To advocate for appropriate public investment in the Highlands Region through the strategic location of public facilities and institutions that will spur sustainable and appropriate economic activity.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Objective 8A6a: Coordinate with municipalities and counties as local and regional strategies are developed to improve the tax base and to create jobs and economic opportunities consistent with the policies and objectives of the RMP.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 8C1: To promote recreation and tourism based economic initiatives, which derive economic benefit from sustainable use of the natural resources of the Highlands Region.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Comments: The applicant estimates that during the 24-week construction period, non-local workers temporarily relocating to the project vicinity would spend in excess of \$7.5 million on local goods and services. The applicant states that subsequent to construction, an increase of approximately \$2.07 million dollars in property tax revenue will be generated by the project for the affected municipalities that will continue after implementation of the CMP and restoration of the functions and values of the various resource areas. The applicant would pay taxes on the installed pipeline in New Jersey. The applicant states that municipalities located along the proposed NEUP Loop 325 are estimated to receive combined annual property tax revenue increases of \$900,000, and increasing approximately \$112,500 per year beginning in 2014. The applicant suggests that the operation of the project facilities within the same			

area/corridor as the existing Tennessee Gas 300 Line pipeline, which has been in operation for over 50 years, will not adversely affect the potential tourism opportunities within the project area.

PART 9 AIR QUALITY

Regional Master Plan Goals, Policies, and Objectives:	C	I	N/A
Policy 9A1: To encourage capital facility development and redevelopment that leads to attainment of the National Ambient Air Quality Standards (NAAQS).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Policy 9A2: To support continued, consistent and thorough air quality monitoring and assessment programs as a means of evaluating and managing major air toxic point sources that affect the Region.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 9A3: To encourage land use development and redevelopment practices that promote center-based growth and mixed-use development and offer alternative modes of transportation as a means to reduce automobile dependency, vehicle miles traveled, vehicle trip length, and duration, for the reduction of local and regional air pollutants and of carbon dioxide emissions linked to global warming.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 9A4: To encourage and support state and federal air quality monitoring for the Highlands Region and regulatory action to reduce levels of air pollutants including but not limited to: ozone, carbon dioxide, sulfur compounds, volatile organic compounds, methane, and fine particulate matter pollutants in the Highlands Region.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Policy 9A5: To encourage energy efficient design and green building practices in support of regional resource protection and smart growth planning policies.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Policy 9A6: To support State and federal initiatives that will reduce air pollution emanating from power plants, incinerators and landfills within and affecting the Highlands Region and particularly in Warren County due to out-of-State power plant air pollution.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments: The applicant states that air quality impacts associated with construction and installation of the NEUP Loop 325 in the Highlands Region will include emissions from fossil-fueled construction equipment and fugitive dust. Such air quality impacts, however, will generally be temporary, localized and insignificant. Large earth-moving equipment and other mobile sources may be powered by diesel or gasoline engines and are sources of combustion-related emissions. However, the applicant notes that air pollutants from construction equipment will be limited to the immediate vicinity of the construction area and will be temporary. The applicant states that the majority of air emissions produced during construction activities will be particulate matter (PM10 and PM2.5) in the form of fugitive dust. Fugitive dust will result from land clearing, grading, excavation, concrete work, and vehicle traffic on paved and unpaved roads. The applicant states that the amount of dust generated will be a function of construction activities, soil type, moisture content, wind speed, frequency of precipitation, vehicle traffic, vehicle types, and roadway characteristics. The applicant notes that it will comply fully with state regulations that address fugitive dust impacts from construction activities.

The applicant calculated the total emissions from construction activities and determined that all site locations where construction will take place are in attainment for CO, SO2, PM10, and PM2.5; therefore, demonstration of compliance to the General Conformity thresholds for these “attainment” pollutants is not required.

The applicant notes that the natural gas provided through this project will be used primarily in the northeast region, providing lower emissions than other fossil fuel sources that might be used for the same purposes.

CONCLUSION

In the evaluation of Exemption #11 under the Highlands Act, the activity must be “consistent with the goals and purposes of the act.” The Highlands Council assesses the latter requirement generally against provisions of the Highlands Act, the RMP, and NJDEP’s Preservation Area rules at N.J.A.C. 7:38 to determine whether the nature of any inconsistencies are sufficient to find that the project is not consistent with the goals and purposes of the Highlands Act and therefore should not be exempt. Non-exempt projects, to the extent that they are inconsistent with the Highlands Act, the RMP or the Preservation Area rules, must either address those inconsistencies or apply to the NJDEP for waivers that address the inconsistencies.

In evaluating the proposed Tennessee Gas Pipeline Company NEUP Project, the Highlands Council staff analyzed, as a whole project, the required construction elements as well as the integrated Comprehensive Mitigation Plan. As described by the applicant, the Comprehensive Mitigation Plan has been prepared consistent with the Highlands Regional Master Plan to use the approach of *avoid, minimize and mitigate*. It provides an approach and process for identifying the specific resource issues, the means to avoid and minimize the specific impact, and ultimately, the ability to define ways that would help to mitigate unavoidable environmental impacts.

For the reasons set forth throughout this Draft Consistency Determination, the project, as proposed, is consistent with many of the RMP goals, policies and objectives but remains inconsistent in various areas. However, the Comprehensive Mitigation Plan addresses those inconsistencies in nearly all cases. The linear nature of the project, and

the necessity of using the existing ROW for the proposed pipeline loop, results in unavoidable inconsistencies, but the Comprehensive Mitigation Plan would mitigate those inconsistencies sufficiently that the proposed project, viewed as a whole (with minimization of environmental impacts and the development of the Comprehensive Mitigation Plan), is found to be made consistent with the goals and purposes of the Act. This finding is based upon the Comprehensive Mitigation Plan as submitted, with the following conditions:

1. That the Comprehensive Mitigation Plan be revised to address all issues stated above in this determination.
2. That the applicant incorporate its findings and commitments regarding Prime Ground Water Recharge Areas;
3. That the applicant address short-term impacts of construction activities on rare, threatened and endangered species as well as vernal pool habitat;
4. That the applicant provide to the Highlands Council the qualifications of all Environmental Inspectors that would work on the project site prior to commencement of any on-site activity.
5. That the applicant coordinate with the Highlands Council to identify lands in the vicinity of the project that would provide appropriate mitigation for temporary and permanent impacts to forests and preserve the forested parcel(s) through any number of conservation mechanisms.
6. That the applicant shall assess the potential impacts of foreseeable but low-probability events, such as major weather or other catastrophic events, including but not limited to impacts such as slope failure, failure of sediment and erosion control measures, and silt and mud deposition into lakes and other waterbodies. In addition, the CMP will include a contingency plan to address such foreseeable but low-probability events and their impacts, including pre-planning, event management and restoration.
7. That the applicant will post a performance bond (or modify the existing performance bond posted for the 300 Line Project), with the dollar amount to be determined by the Highlands Council, to ensure completion of the individual plans of the CMP. Commitment to development and implementation of the CMP would be a condition of the Highlands Act Exemption #11.

The project includes application of Exemption #11 of the Act to include routine post-construction repair and maintenance of the Tennessee Gas Pipeline NEUP Line. As a condition of this Consistency Determination, the applicant is required to submit a report to the Highlands Council and the NJDEP each time a proposed post construction repair or maintenance activity is planned, prior to the implementation of the activity.

ATTACHMENT

Critical Habitat Mitigation Ratio Determinations

Introduction

As part of the Highlands 2008 Regional Master Plan (RMP), the Highlands Water Protection and Planning Council (Highlands Council) established a goal of no net loss of Critical Habitat values within the Highlands Region (see Goal 1F, and especially Policy 1F5). Critical Habitat areas are defined as lands recognized as Critical Wildlife Habitats, Significant Natural Areas, or Vernal Pool Buffers. The Critical Habitat Conservation and Management Program has been designed to promote consistent standards for the protection, enhancement and restoration of lands within Critical Habitat. The goal of no net loss of habitat value can be effectuated through the avoidance of disturbances in or of Critical Habitats, followed by minimization of such impacts where avoidance is not entirely feasible. Mitigation is used to address losses of Critical Habitat values where avoidance and minimization are not sufficient to achieve no net loss. Guidance for development of mitigation strategies for a Critical Habitat Conservation and Management Plan was developed for this project by the Highlands Council.

Effective mitigation strategies are necessary for achieving restoration of the ecological functions and processes of impaired or disturbed Critical Habitat and for ensuring for no net loss of existing Critical Habitat and habitat values within the Highlands Region. Overall, it is understood that the most cost effective mitigation strategy is to avoid direct and indirect negative effects. A mitigation strategy is needed to address unavoidable and necessary effects. The Highlands Council will be publishing full guidance in 2012, including instructions on determining habitat quality, calculating mitigation ratios, selecting references sites, and also for developing, implementing and monitoring mitigation plans. However, for the purposes of this project, the following guidance is provided regarding mitigation ratios at this time. Please note that this constitutes guidance rather than formal procedures or regulations of the Highlands Council, which remain based on the RMP. Site-specific considerations may result in adjustment of the mitigation ratios provided herein.

Establishment of Mitigation Ratios

Mitigation ratios must be calculated, commensurate with expected impacts, type of habitat, sensitivity of habitat and proposed mitigation techniques to achieve no net loss of Critical Habitat value through mitigation. The ratio is defined as the amount of area to be replaced or created (the first number) relative to the amount of area being disturbed (the second number). Mitigation ratios are based on habitat quality, as mitigation ratios need to account for potential partial mitigation failure, habitat uniqueness and scarcity, and temporal loss of function. In addition, mitigation ratios

also account for the fact that different habitat types exhibit different rates of recovery. Therefore, increased ratios are needed to account for the discrepancy between current habitat value and potential future habitat value. Minimum expected mitigation ratios are presented below, determined by habitat quality:

Type	Ratio
High Quality Habitat*	3:1 Mitigation to disturbance
Medium Quality Habitat	2.5:1 Mitigation to disturbance
Low Quality Habitat	1.5:1 Mitigation to disturbance
Temporary Disturbance (restoration at site location)	1.25:1 Restoration to disturbance
*In the case of very rare habitat, or habitat that would be difficult to restore due to unique or exceptionally rare site attributes, total avoidance of impacts is the only feasible approach to achieve no net loss of critical habitat value.	

Project Specific Mitigation Required

The 15.83 acres of forest habitat expected to be permanently removed during the Tennessee Gas Northeast Upgrade Project triggers the use of the Medium quality habitat mitigation ratio of 2.5:1 or 39.58 acres of mitigation required. Tennessee Gas has proposed to preserve 50 acres of forested habitat (off-site) which sufficiently addresses the mitigation requirement for permanent impacts. The habitat is assumed to be of Medium quality as it is largely adjacent to the current ROW and access roads.

The 86.1 acres of forest habitat expected to be temporarily removed during the Tennessee Gas Northeast Upgrade Project triggers the use of the temporary disturbance mitigation ratio of 1.25:1 or 107.63 acres of mitigation required. Tennessee Gas has proposed reforestation on site and while it is likely to eventually yield forested habitat (under proper monitoring and adaptive management) the high probability of failure and reduction in density of surviving plantations combined with the expectation that the site disturbance will be so great as to not allow for a fully functioning forest to re-grow. Therefore, the Highlands Council requires that in addition to reforestation of the 86.1 acres, the full 107.63 acres of mitigation (through off-site preservation) be provided.