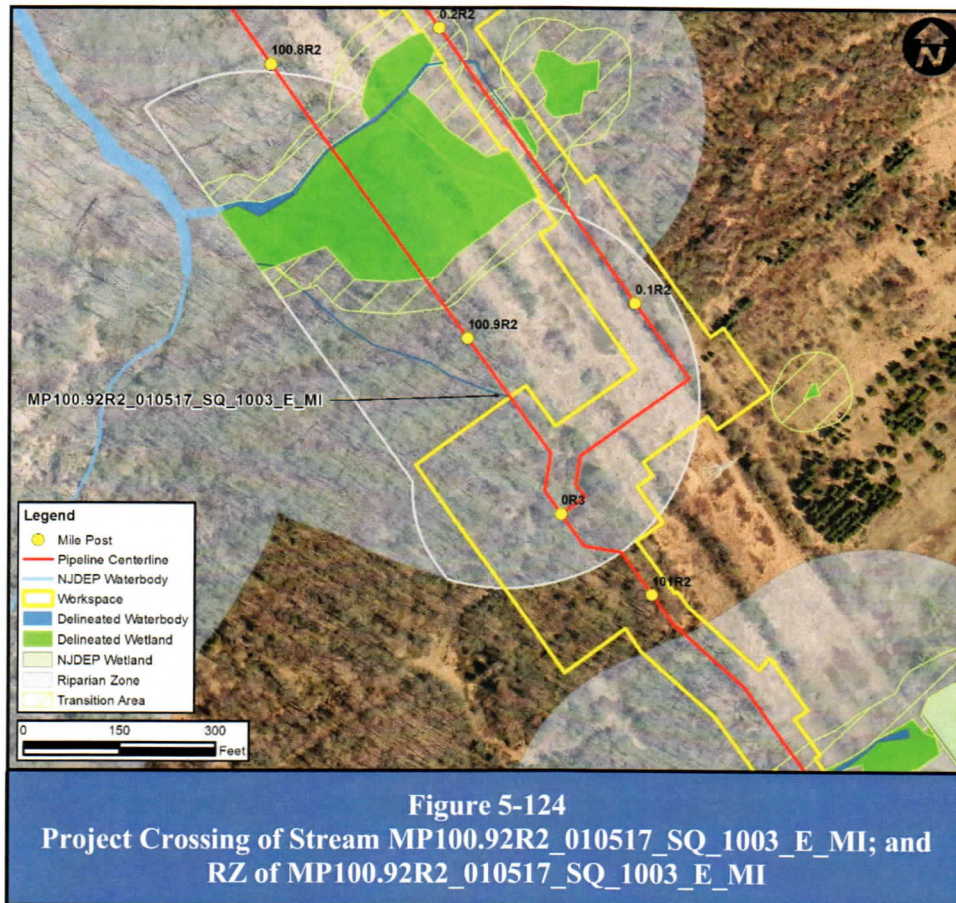


5.146 Regulated Crossing 124



INVENTORY

Wetlands

Not present.

Transition Areas

Not present.

Special Aquatic Sites

Based upon fieldwork and review of publicly available data, special aquatic sites as defined at N.J.A.C. 7:7A-1.4 are not located at this regulated crossing.

Public Lands

None of the regulated resources in this crossing are on public lands.

Critical Habitat and Threatened or Endangered Species and their Habitat

Stream MP100.92R2_010517_SQ_1003_E_MI has not been identified as potentially suitable habitat for any threatened or endangered species.

Species accounts describing the natural history and habitat requirements; habitat assessment and/or targeted species survey results; study corridor documentation; potential habitat impacts; and recommended measures to avoid, minimize, and mitigate potential impacts to New Jersey State-listed species potentially occurring within regulated areas of the study corridor are provided in the HPP.

State Open Waters and Channels

Stream MP100.92R2_010517_SQ_1003_E_MI is a minor, ephemeral stream flowing west through forested habitat, with a bank width of less than two feet. The banks are stable. Silt comprises the streambed and much of the feature is littered with woody debris.

Riparian Zones

RZ of MP100.92R2_010517_SQ_1003_E_MI is the 300-foot riparian area associated with this unnamed tributary of Alexauken Creek.

Fishery Resources

According to the Surface Water Quality Standards N.J.A.C.7:9, this tributary of Alexauken Creek is classified as a trout maintenance freshwater body (FW2-TM(C1)).

ASSESSMENT

Analysis Potential Temporary and Permanent Adverse Environmental Impacts of the Proposed Regulated Activity

HDD is the pipeline construction method proposed at this regulated crossing. Adverse environmental impacts have been eliminated by the use of trenchless technology. As demonstrated in the Alternatives Analysis, Attachment K, to the extent that temporary construction access and workspace for the Project impact regulated resources those impacts are both unavoidable and temporary. In consideration of these observations, it is not anticipated that the proposed HDD at this crossing will result in permanent adverse environmental impacts.

Measures Taken to Reduce Potential Adverse Environmental Impacts

Utilizing HDD technology minimizes direct impacts to environmentally sensitive areas. To mitigate the inherent risks in HDD construction, PennEast prepared a design for the proposed HDD based on information from a site specific geotechnical investigation and developed a HDD IRCP (Attachment R). In an effort to minimize or avoid adverse environmental impacts, PennEast will implement Project specific BMPs as detailed on the Project Soil Erosion and Sedimentation Control Plans (Attachment E-4). Section 3 of this report details the range of proposed BMPs and mitigation measures taken to reduce potential adverse environmental impacts. These BMPs comply with the Standards for Soil Erosion and Sediment Control in New Jersey.

The following key measures will be implemented to avoid, minimize and mitigate potential adverse environmental impacts:

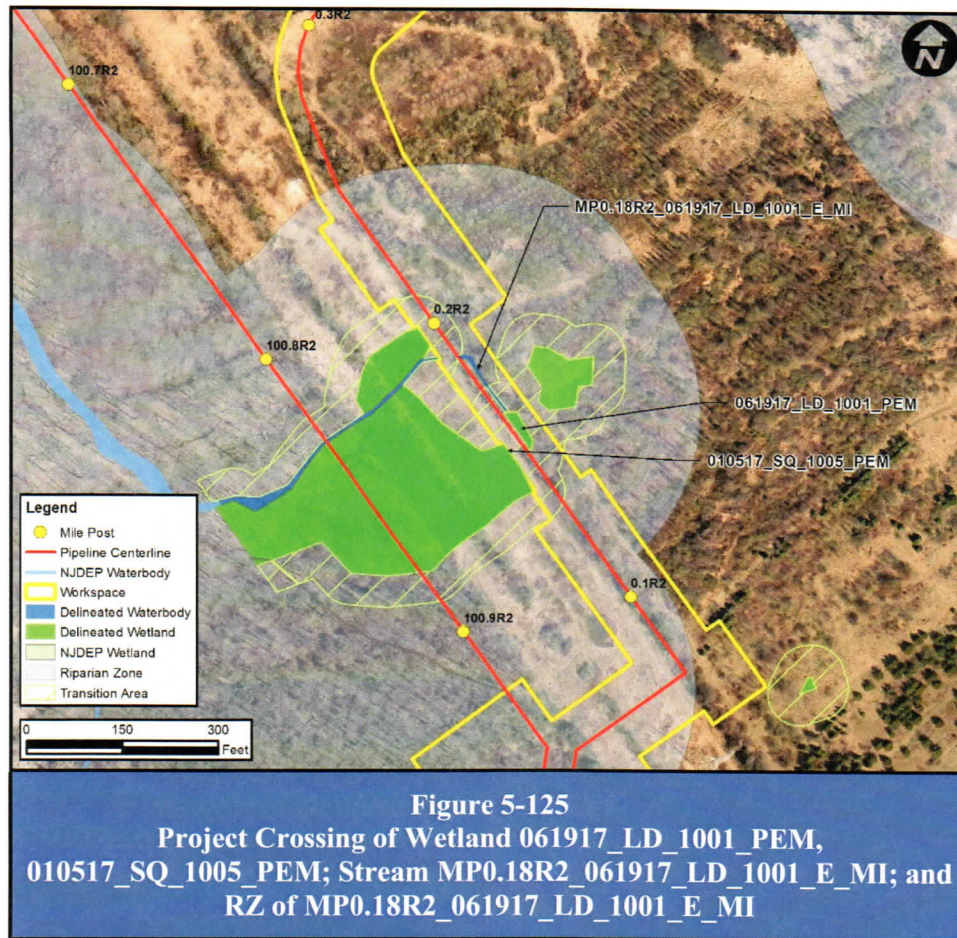
- Delineation of all wetlands in the Project area;
- Avoidance, and minimization of impacts to wetlands to the greatest extent practicable as described in the Alternatives Analysis provided in Attachment K of the Multi-Permit Application;

- Mitigation of unavoidable impacts as described in the Mitigation Proposal provided Attachment N of the Multi-Permit Application;
- Minimization of the operational easement width in wetlands;
- Implementation of trenchless technology construction techniques;
- Follow the site-specific *Inadvertent Returns and Contingency Plan* to avoid and minimize potential impacts from inadvertent return;
- Collocation with existing ROW areas where possible and permitted to minimize forest losses;
- Minimization of forest and vegetation clearing to the greatest extent practicable;
- Allowed post-construction succession of temporarily cleared forest areas and restoration of forested wetlands to a function or value greater than or equal to existing conditions where practicable;
- Restoration of grassland areas to a function or value greater than or equal to existing conditions;
- Mitigation/compensation provided offsite to potentially result in net-neutral or improved regional habitat conditions for potentially affected species populations;
- Adherence to applicable timing restrictions;
- Potential incorporation of NJDEP-reviewed and approved wildlife enhancement design features on mitigation sites and restoration areas;
- Regular (daily) clearing of work areas by agency-approved and qualified environmental monitors. Safe and appropriate wildlife relocation as needed;
- Regular inspection of protective measures such as fences by environmental monitors;
- Post-construction maintenance standards following NJDEP Integrated Vegetation Management guidance set forth in the *Strategies to Minimize Adverse Impacts to Wildlife from Management Activities on Powerline Rights-of-Way in NJ* (NJDEP ENSP 2011) (*Strategies*);
- Incorporate FERC Invasive Species Management Plan;
- Development and utilization of equipment cleaning/sterilization, and other protocols to avoid the spread of invasive species in sensitive terrestrial, wetland and aquatic habitats;
- Project-specific (SESC) standards including temporary erosion control measures such as silt fence, turbidity barriers, sediment filter bags, and erosion mats;
- Commitment not to use herbicides during post-construction maintenance activities;
- Specific seasonal restrictions and buffers will be followed for species and species groups in accordance with *Strategies*;
- Project-specific protocols on appropriate fueling station locations and prohibited areas such as streams and wetlands and transition areas; project-specific cleanup protocols and notification for any unintended spills during construction;
- Vegetation within temporary workspace areas including wetlands and transition areas will be cut flush to the ground and matted where practicable: no grubbing is proposed in these areas;
- Regular inspection of construction equipment to ensure proper functioning with appropriate filters and air quality controls;
- Adherence to agency-approved blasting plan;
- Avoidance of work personnel outside of the workspace in adjacent naturalized areas (sensitive habitat areas will be posted); and
- Post-construction restoration of stream banks and beds and downstream water quality monitoring as required (sensitive habitat areas) before, during and after construction.

FINDINGS

The implementation of appropriate avoidance, minimization, and mitigating measures identified for wetlands, transition areas, species, or species group will avoid and minimize impacts to these environmental resources, State-listed wildlife and plant species. By following the key measures as listed above and in the HPP, it is anticipated that existing populations of State-listed species will not be jeopardized.

5.147 Regulated Crossing 125



INVENTORY

Wetlands

Wetland 010517_SQ_1005_PEM is a field-delineated palustrine emergent wetland occurring within and adjacent to an existing, maintained utility right-of-way. The wetland occurs along an unnamed intermediate perennial tributary of the Alexauken Creek and an unnamed minor ephemeral tributary of same. Additional information on this wetland can be found in the WDR provided in Attachment F of the Multi-Permit Application.

Wetland 061917_LD_1001_PEM is a field-delineated palustrine emergent wetland located within an existing, maintained utility right-of-way. It occurs along two unnamed tributaries of the Alexauken Creek: an intermediate perennial stream, and a minor ephemeral stream. Additional information on this wetland can be found in the WDR provided in Attachment F of the Multi-Permit Application.

Transition Areas

The Transition Area is assumed to be 50 feet due to the lack of exceptional characteristics associated with the wetland feature.

Special Aquatic Sites

Based upon fieldwork and review of publicly available data, special aquatic sites as defined at N.J.A.C. 7:7A-1.4 are not located at this regulated crossing.

Public Lands

None of the regulated resources in this crossing are on public lands.

Critical Habitat and Threatened or Endangered Species and their Habitat

Wetland 010517_SQ_1005_PEM has not been identified as potentially suitable habitat for any threatened or endangered species.

Wetland 061917_LD_1001_PEM has not been identified as potentially suitable habitat for any threatened or endangered species.

Stream MP0.18R2_061917_LD_1001_E_MI has not been identified as potentially suitable habitat for any threatened or endangered species.

Species accounts describing the natural history and habitat requirements; habitat assessment and/or targeted species survey results; study corridor documentation; potential habitat impacts; and recommended measures to avoid, minimize, and mitigate potential impacts to New Jersey State-listed species potentially occurring within regulated areas of the study corridor are provided in the HPP.

State Open Waters and Channels

Stream MP0.18R2_061917_LD_1001_E_MI is a minor, ephemeral stream flowing north through a narrow forested strip and crossing beneath a maintained utility right-of-way via culvert to an adjacent property. The bank width is approximately two to three feet and eroded in some areas. The streambed substrate was approximately 70% clay, with some silt, sand, and gravel, and a very small amount of cobble.

Riparian Zones

RZ of MP0.18R2_061917_LD_1001_E_MI is the 300-foot riparian area associated with this stream. This riparian area is mostly vegetated with the balance actively disturbed.

Fishery Resources

According to the Surface Water Quality Standards N.J.A.C.7:9, Alexauken Creek is classified as a freshwater trout maintenance waterbody (FW2-TM(C1)).

ASSESSMENT

Analysis Potential Temporary and Permanent Adverse Environmental Impacts of the Proposed Regulated Activity

Open-cut through wetland areas and dry crossing of streams is the pipeline construction method proposed at this regulated crossing. This crossing method is proposed at locations where the use of trenchless technology is not feasible. The Alternatives Analysis, Attachment K, documents this finding. Unavoidable temporary impacts include disturbance to vegetation for temporary construction access and workspace for the Project. Temporary disturbance of wetlands and stream

channels during construction is necessary for pipeline installation. Permanent impacts include the removal of trees and shrubs located within 15 feet of the pipeline that could compromise the integrity of the pipeline in compliance with FERC requirements. In-place restoration is proposed to minimize environmental impacts at this crossing; mitigation, as required by NJDEP rules, is proposed to compensate for adverse wetland and riparian zone impacts. As a result of these considerations, proposed construction at this crossing is not anticipated to result in significant permanent adverse environmental impacts.

Measures Taken to Reduce Potential Adverse Environmental Impacts

Where impacts could not be avoided with trenchless technology construction, PennEast sought to minimize the impacts to wetlands, State open waters and riparian zones with workspace modifications. A discussion of workspace modification efforts is provided in the Alternatives Analysis (Attachment K). PennEast will implement Project specific BMPs as detailed on the Project Soil Erosion and Sedimentation Control Plans (Attachment E-4) to further minimize or avoid adverse environmental impacts. Section 3 of this report details the range of proposed BMPs and mitigation measures taken to reduce potential adverse environmental impacts. These BMPs comply with the Standards for Soil Erosion and Sediment Control in New Jersey.

The following key measures will be implemented to avoid, minimize and mitigate potential adverse environmental impacts:

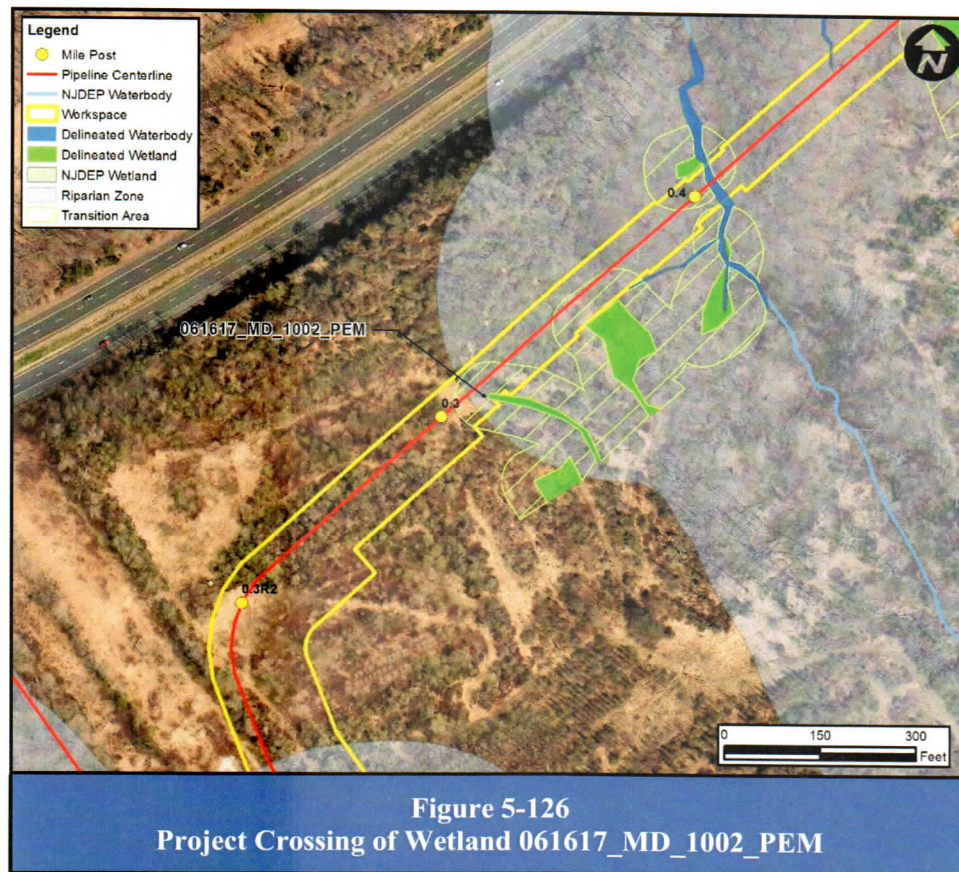
- Delineation of all wetlands in the Project area;
- Avoidance, and minimization of impacts to wetlands to the greatest extent practicable as described in the Alternatives Analysis provided in Attachment K of the Multi-Permit Application;
- Mitigation of unavoidable impacts as described in the Mitigation Proposal provided Attachment N of the Multi-Permit Application;
- Minimization of the operational easement width in wetlands;
- Implementation of trenchless technology construction techniques;
- Follow the site-specific *Inadvertent Returns and Contingency Plan* to avoid and minimize potential impacts from inadvertent return;
- Collocation with existing ROW areas where possible and permitted to minimize forest losses;
- Minimization of forest and vegetation clearing to the greatest extent practicable;
- Allowed post-construction succession of temporarily cleared forest areas and restoration of forested wetlands to a function or value greater than or equal to existing conditions where practicable;
- Restoration of grassland areas to a function or value greater than or equal to existing conditions;
- Mitigation/compensation provided offsite to potentially result in net-neutral or improved regional habitat conditions for potentially affected species populations;
- Adherence to applicable timing restrictions;
- Potential incorporation of NJDEP-reviewed and approved wildlife enhancement design features on mitigation sites and restoration areas;
- Regular (daily) clearing of work areas by agency-approved and qualified environmental monitors. Safe and appropriate wildlife relocation as needed;
- Regular inspection of protective measures such as fences by environmental monitors;
- Post-construction maintenance standards following NJDEP Integrated Vegetation Management guidance set forth in the *Strategies to Minimize Adverse Impacts to Wildlife from Management Activities on Powerline Rights-of-Way in NJ* (NJDEP ENSP 2011) (*Strategies*);

- Incorporate FERC Invasive Species Management Plan;
- Development and utilization of equipment cleaning/sterilization, and other protocols to avoid the spread of invasive species in sensitive terrestrial, wetland and aquatic habitats;
- Project-specific (SESC) standards including temporary erosion control measures such as silt fence, turbidity barriers, sediment filter bags, and erosion mats;
- Commitment not to use herbicides during post-construction maintenance activities;
- Specific seasonal restrictions and buffers will be followed for species and species groups in accordance with *Strategies*;
- Project-specific protocols on appropriate fueling station locations and prohibited areas such as streams and wetlands and transition areas; project-specific cleanup protocols and notification for any unintended spills during construction;
- Vegetation within temporary workspace areas including wetlands and transition areas will be cut flush to the ground and matted where practicable; no grubbing is proposed in these areas;
- Regular inspection of construction equipment to ensure proper functioning with appropriate filters and air quality controls;
- Adherence to agency-approved blasting plan;
- Avoidance of work personnel outside of the workspace in adjacent naturalized areas (sensitive habitat areas will be posted); and
- Post-construction restoration of stream banks and beds and downstream water quality monitoring as required (sensitive habitat areas) before, during and after construction.

FINDINGS

The implementation of appropriate avoidance, minimization, and mitigating measures identified for wetlands, transition areas, species, or species group will avoid and minimize impacts to these environmental resources, State-listed wildlife and plant species. By following the key measures as listed above and in the HPP, it is anticipated that existing populations of State-listed species will not be jeopardized.

5.148 Regulated Crossing 126



INVENTORY

Wetlands

Wetland 061617_MD_1002_PEM is a field-delineated palustrine emergent wetland. Additional information on this wetland can be found in the WDR provided in Attachment F of the Multi-Permit Application.

Transition Areas

The Transition Area is assumed to be 50 feet due to the lack of exceptional characteristics associated with the wetland feature.

Special Aquatic Sites

Based upon fieldwork and review of publicly available data, special aquatic sites as defined at N.J.A.C. 7:7A-1.4 are not located at this regulated crossing.

Public Lands

None of the regulated resources in this crossing are on public lands.

Critical Habitat and Threatened or Endangered Species and their Habitat

Wetland 061617_MD_1002_PEM has not been identified as potentially suitable habitat for any threatened or endangered species.

Species accounts describing the natural history and habitat requirements; habitat assessment and/or targeted species survey results; study corridor documentation; potential habitat impacts; and recommended measures to avoid, minimize, and mitigate potential impacts to New Jersey State-listed species potentially occurring within regulated areas of the study corridor are provided in the HPP.

State Open Waters and Channels

Based upon fieldwork and review of publicly available data, stream channels are not located at this regulated crossing.

Riparian Zones

Based upon fieldwork and review of publicly available data, riparian zones are not located at this regulated crossing.

Fishery Resources

Based upon fieldwork and review of publicly available data, fishery resources are not located at this regulated crossing.

ASSESSMENT

Analysis Potential Temporary and Permanent Adverse Environmental Impacts of the Proposed Regulated Activity

Open-cut through wetland areas and dry crossing of streams is the pipeline construction method proposed at this regulated crossing. This crossing method is proposed at locations where the use of trenchless technology is not feasible. The Alternatives Analysis, Attachment K, documents this finding. Unavoidable temporary impacts include disturbance to vegetation for temporary construction access and workspace for the Project. Temporary disturbance of wetlands and stream channels during construction is necessary for pipeline installation. Permanent impacts include the removal of trees and shrubs located within 15 feet of the pipeline that could compromise the integrity of the pipeline in compliance with FERC requirements. Temporary matting is proposed within regulated areas to reduce impacts to herbaceous vegetation. In-place restoration is proposed to minimize environmental impacts at this crossing; mitigation, as required by NJDEP rules, is proposed to compensate for adverse wetland and riparian zone impacts. As a result of these considerations, proposed construction at this crossing is not anticipated to result in significant permanent adverse environmental impacts.

Measures Taken to Reduce Potential Adverse Environmental Impacts

Where impacts could not be avoided with trenchless technology construction, PennEast sought to minimize the impacts to wetlands, State open waters and riparian zones with workspace modifications. A discussion of workspace modification efforts is provided in the Alternatives Analysis (Attachment K). PennEast will implement Project specific BMPs as detailed on the Project Soil Erosion and Sedimentation Control Plans (Attachment E-4) to further minimize or avoid adverse environmental impacts. Section 3 of this report details the range of proposed BMPs

and mitigation measures taken to reduce potential adverse environmental impacts. These BMPs comply with the Standards for Soil Erosion and Sediment Control in New Jersey.

The following key measures will be implemented to avoid, minimize and mitigate potential adverse environmental impacts:

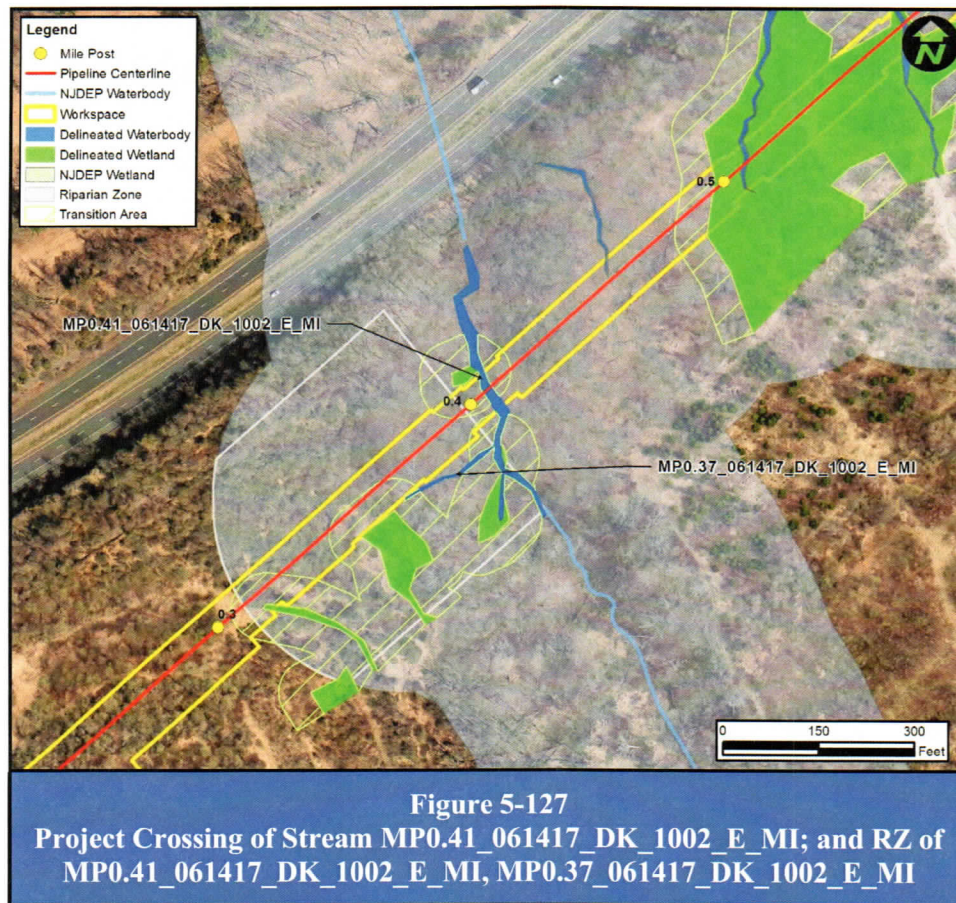
- Delineation of all wetlands in the Project area;
- Avoidance, and minimization of impacts to wetlands to the greatest extent practicable as described in the Alternatives Analysis provided in Attachment K of the Multi-Permit Application;
- Mitigation of unavoidable impacts as described in the Mitigation Proposal provided Attachment N of the Multi-Permit Application;
- Minimization of the operational easement width in wetlands;
- Implementation of trenchless technology construction techniques;
- Follow the site-specific *Inadvertent Returns and Contingency Plan* to avoid and minimize potential impacts from inadvertent return;
- Collocation with existing ROW areas where possible and permitted to minimize forest losses;
- Minimization of forest and vegetation clearing to the greatest extent practicable;
- Allowed post-construction succession of temporarily cleared forest areas and restoration of forested wetlands to a function or value greater than or equal to existing conditions where practicable;
- Restoration of grassland areas to a function or value greater than or equal to existing conditions;
- Mitigation/compensation provided offsite to potentially result in net-neutral or improved regional habitat conditions for potentially affected species populations;
- Adherence to applicable timing restrictions;
- Potential incorporation of NJDEP-reviewed and approved wildlife enhancement design features on mitigation sites and restoration areas;
- Regular (daily) clearing of work areas by agency-approved and qualified environmental monitors. Safe and appropriate wildlife relocation as needed;
- Regular inspection of protective measures such as fences by environmental monitors;
- Post-construction maintenance standards following NJDEP Integrated Vegetation Management guidance set forth in the *Strategies to Minimize Adverse Impacts to Wildlife from Management Activities on Powerline Rights-of-Way in NJ* (NJDEP ENSP 2011) (*Strategies*);
- Incorporate FERC Invasive Species Management Plan;
- Development and utilization of equipment cleaning/sterilization, and other protocols to avoid the spread of invasive species in sensitive terrestrial, wetland and aquatic habitats;
- Project-specific (SESC) standards including temporary erosion control measures such as silt fence, turbidity barriers, sediment filter bags, and erosion mats;
- Commitment not to use herbicides during post-construction maintenance activities;
- Specific seasonal restrictions and buffers will be followed for species and species groups in accordance with *Strategies*;
- Project-specific protocols on appropriate fueling station locations and prohibited areas such as streams and wetlands and transition areas; project-specific cleanup protocols and notification for any unintended spills during construction;
- Vegetation within temporary workspace areas including wetlands and transition areas will be cut flush to the ground and matted where practicable: no grubbing is proposed in these areas;
- Regular inspection of construction equipment to ensure proper functioning with appropriate filters and air quality controls;

- Adherence to agency-approved blasting plan;
- Avoidance of work personnel outside of the workspace in adjacent naturalized areas (sensitive habitat areas will be posted); and
- Post-construction restoration of stream banks and beds and downstream water quality monitoring as required (sensitive habitat areas) before, during and after construction.

FINDINGS

The implementation of appropriate avoidance, minimization, and mitigating measures identified for wetlands, transition areas, species, or species group will avoid and minimize impacts to these environmental resources, State-listed wildlife and plant species. By following the key measures as listed above and in the HPP, it is anticipated that existing populations of State-listed species will not be jeopardized.

5.149 Regulated Crossing 127



INVENTORY

Wetlands

Not present.

Transition Areas

Not present.

Special Aquatic Sites

Based upon fieldwork and review of publicly available data, special aquatic sites as defined at N.J.A.C. 7:7A-1.4 are not located at this regulated crossing.

Public Lands

None of the regulated resources in this crossing are on public lands.

Critical Habitat and Threatened or Endangered Species and their Habitat

Stream MP0.41_061417_DK_1002_E_MI has not been identified as potentially suitable habitat for any threatened or endangered species.

Species accounts describing the natural history and habitat requirements; habitat assessment and/or targeted species survey results; study corridor documentation; potential habitat impacts; and recommended measures to avoid, minimize, and mitigate potential impacts to New Jersey State-listed species potentially occurring within regulated areas of the study corridor are provided in the HPP.

State Open Waters and Channels

Stream MP0.41_061417_DK_1002_E_MI is a field-delineated minor ephemeral tributary of the Alexauken Creek. It flows northwest through forest and drains beneath State Highway 202 via culvert.

Riparian Zones

RZ of MP0.41_061417_DK_1002_E_MI is the 300-foot riparian area associated with this stream. This riparian area is vegetated.

RZ of MP0.37_061417_DK_1002_E_MI is the 300-foot riparian area associated with an off-site Alexauken unnamed tributary. This riparian area is vegetated.

Fishery Resources

According to the Surface Water Quality Standards N.J.A.C.7:9, Alexauken Creek is classified as a trout maintenance waterbody (FW2-TM(C1)).

ASSESSMENT

Analysis Potential Temporary and Permanent Adverse Environmental Impacts of the Proposed Regulated Activity

Open-cut through wetland areas and dry crossing of streams is the pipeline construction method proposed at this regulated crossing. This crossing method is proposed at locations where the use of trenchless technology is not feasible. The Alternatives Analysis, Attachment K, documents this finding. Unavoidable temporary impacts include disturbance to vegetation for temporary construction access and workspace for the Project. Temporary disturbance of wetlands and stream channels during construction is necessary for pipeline installation. Permanent impacts include the removal of trees and shrubs located within 15 feet of the pipeline that could compromise the integrity of the pipeline in compliance with FERC requirements. Temporary matting is proposed within regulated areas to reduce impacts to herbaceous vegetation. In-place restoration is proposed to minimize environmental impacts at this crossing; mitigation, as required by NJDEP rules, is proposed to compensate for adverse wetland and riparian zone impacts. As a result of these considerations, proposed construction at this crossing is not anticipated to result in significant permanent adverse environmental impacts.

Measures Taken to Reduce Potential Adverse Environmental Impacts

Where impacts could not be avoided with trenchless technology construction, PennEast sought to minimize the impacts to wetlands, State open waters and riparian zones with workspace modifications. A discussion of workspace modification efforts is provided in the Alternatives Analysis (Attachment K). PennEast will implement Project specific BMPs as detailed on the Project Soil Erosion and Sedimentation Control Plans (Attachment E-4) to further minimize or avoid adverse environmental impacts. Section 3 of this report details the range of proposed BMPs

and mitigation measures taken to reduce potential adverse environmental impacts. These BMPs comply with the Standards for Soil Erosion and Sediment Control in New Jersey.

The following key measures will be implemented to avoid, minimize and mitigate potential adverse environmental impacts:

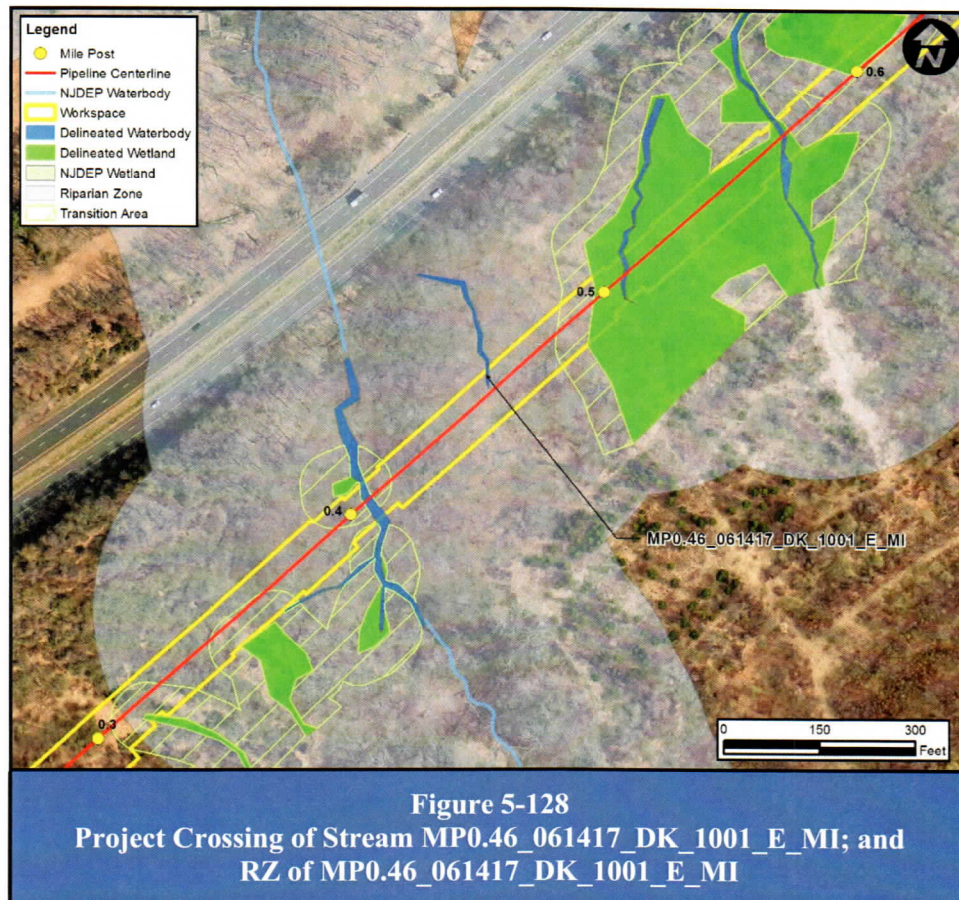
- Delineation of all wetlands in the Project area;
- Avoidance, and minimization of impacts to wetlands to the greatest extent practicable as described in the Alternatives Analysis provided in Attachment K of the Multi-Permit Application;
- Mitigation of unavoidable impacts as described in the Mitigation Proposal provided Attachment N of the Multi-Permit Application;
- Minimization of the operational easement width in wetlands;
- Implementation of trenchless technology construction techniques;
- Follow the site-specific *Inadvertent Returns and Contingency Plan* to avoid and minimize potential impacts from inadvertent return;
- Collocation with existing ROW areas where possible and permitted to minimize forest losses;
- Minimization of forest and vegetation clearing to the greatest extent practicable;
- Allowed post-construction succession of temporarily cleared forest areas and restoration of forested wetlands to a function or value greater than or equal to existing conditions where practicable;
- Restoration of grassland areas to a function or value greater than or equal to existing conditions;
- Mitigation/compensation provided offsite to potentially result in net-neutral or improved regional habitat conditions for potentially affected species populations;
- Adherence to applicable timing restrictions;
- Potential incorporation of NJDEP-reviewed and approved wildlife enhancement design features on mitigation sites and restoration areas;
- Regular (daily) clearing of work areas by agency-approved and qualified environmental monitors. Safe and appropriate wildlife relocation as needed;
- Regular inspection of protective measures such as fences by environmental monitors;
- Post-construction maintenance standards following NJDEP Integrated Vegetation Management guidance set forth in the *Strategies to Minimize Adverse Impacts to Wildlife from Management Activities on Powerline Rights-of-Way in NJ* (NJDEP ENSP 2011) (*Strategies*);
- Incorporate FERC Invasive Species Management Plan;
- Development and utilization of equipment cleaning/sterilization, and other protocols to avoid the spread of invasive species in sensitive terrestrial, wetland and aquatic habitats;
- Project-specific (SESC) standards including temporary erosion control measures such as silt fence, turbidity barriers, sediment filter bags, and erosion mats;
- Commitment not to use herbicides during post-construction maintenance activities;
- Specific seasonal restrictions and buffers will be followed for species and species groups in accordance with *Strategies*;
- Project-specific protocols on appropriate fueling station locations and prohibited areas such as streams and wetlands and transition areas; project-specific cleanup protocols and notification for any unintended spills during construction;
- Vegetation within temporary workspace areas including wetlands and transition areas will be cut flush to the ground and matted where practicable: no grubbing is proposed in these areas;
- Regular inspection of construction equipment to ensure proper functioning with appropriate filters and air quality controls;

- Adherence to agency-approved blasting plan;
- Avoidance of work personnel outside of the workspace in adjacent naturalized areas (sensitive habitat areas will be posted); and
- Post-construction restoration of stream banks and beds and downstream water quality monitoring as required (sensitive habitat areas) before, during and after construction.

FINDINGS

The implementation of appropriate avoidance, minimization, and mitigating measures identified for wetlands, transition areas, species, or species group will avoid and minimize impacts to these environmental resources, State-listed wildlife and plant species. By following the key measures as listed above and in the HPP, it is anticipated that existing populations of State-listed species will not be jeopardized.

5.150 Regulated Crossing 128



INVENTORY

Wetlands

Not present.

Transition Areas

Not present.

Special Aquatic Sites

Based upon fieldwork and review of publicly available data, special aquatic sites as defined at N.J.A.C. 7:7A-1.4 are not located at this regulated crossing.

Public Lands

None of the regulated resources in this crossing are on public lands.

Critical Habitat and Threatened or Endangered Species and their Habitat

Stream MP0.46_061417_DK_1001_E_MI has not been identified as potentially suitable habitat for any threatened or endangered species.

Species accounts describing the natural history and habitat requirements; habitat assessment and/or targeted species survey results; study corridor documentation; potential habitat impacts; and recommended measures to avoid, minimize, and mitigate potential impacts to New Jersey State-listed species potentially occurring within regulated areas of the study corridor are provided in the HPP.

State Open Waters and Channels

Stream MP0.46_061417_DK_1001_E_MI is a field-delineated minor, ephemeral stream that contained no water at the time of assessment. The feature appears to flow north through forested habitat and continues off the property via a culvert. The banks are stable, and the bank width is approximately three feet. The streambed substrate is silt and sand, with some clay, gravel, and cobble.

Riparian Zones

RZ of MP0.46_061417_DK_1001_E_MI is the 300-foot riparian area associated with the stream. This riparian area is vegetated.

Fishery Resources

According to the Surface Water Quality Standards N.J.A.C.7:9, Alexauken Creek is classified as a freshwater trout maintenance waterbody (FW2-TM(C1)).

ASSESSMENT

Analysis Potential Temporary and Permanent Adverse Environmental Impacts of the Proposed Regulated Activity

Open-cut through wetland areas and dry crossing of streams is the pipeline construction method proposed at this regulated crossing. This crossing method is proposed at locations where the use of trenchless technology is not feasible. The Alternatives Analysis, Attachment K, documents this finding. Unavoidable temporary impacts include disturbance to vegetation for temporary construction access and workspace for the Project. Temporary disturbance of wetlands and stream channels during construction is necessary for pipeline installation. Permanent impacts include the removal of trees and shrubs located within 15 feet of the pipeline that could compromise the integrity of the pipeline in compliance with FERC requirements. Temporary matting is proposed within regulated areas to reduce impacts to herbaceous vegetation. In-place restoration is proposed to minimize environmental impacts at this crossing; mitigation, as required by NJDEP rules, is proposed to compensate for adverse wetland and riparian zone impacts. As a result of these considerations, proposed construction at this crossing is not anticipated to result in significant permanent adverse environmental impacts.

Measures Taken to Reduce Potential Adverse Environmental Impacts

Where impacts could not be avoided with trenchless technology construction, PennEast sought to minimize the impacts to wetlands, State open waters and riparian zones with workspace modifications. A discussion of workspace modification efforts is provided in the Alternatives Analysis (Attachment K). PennEast will implement Project specific BMPs as detailed on the Project Soil Erosion and Sedimentation Control Plans (Attachment E-4) to further minimize or avoid adverse environmental impacts. Section 3 of this report details the range of proposed BMPs and mitigation measures taken to reduce potential adverse environmental impacts. These BMPs comply with the Standards for Soil Erosion and Sediment Control in New Jersey.

The following key measures will be implemented to avoid, minimize and mitigate potential adverse environmental impacts:

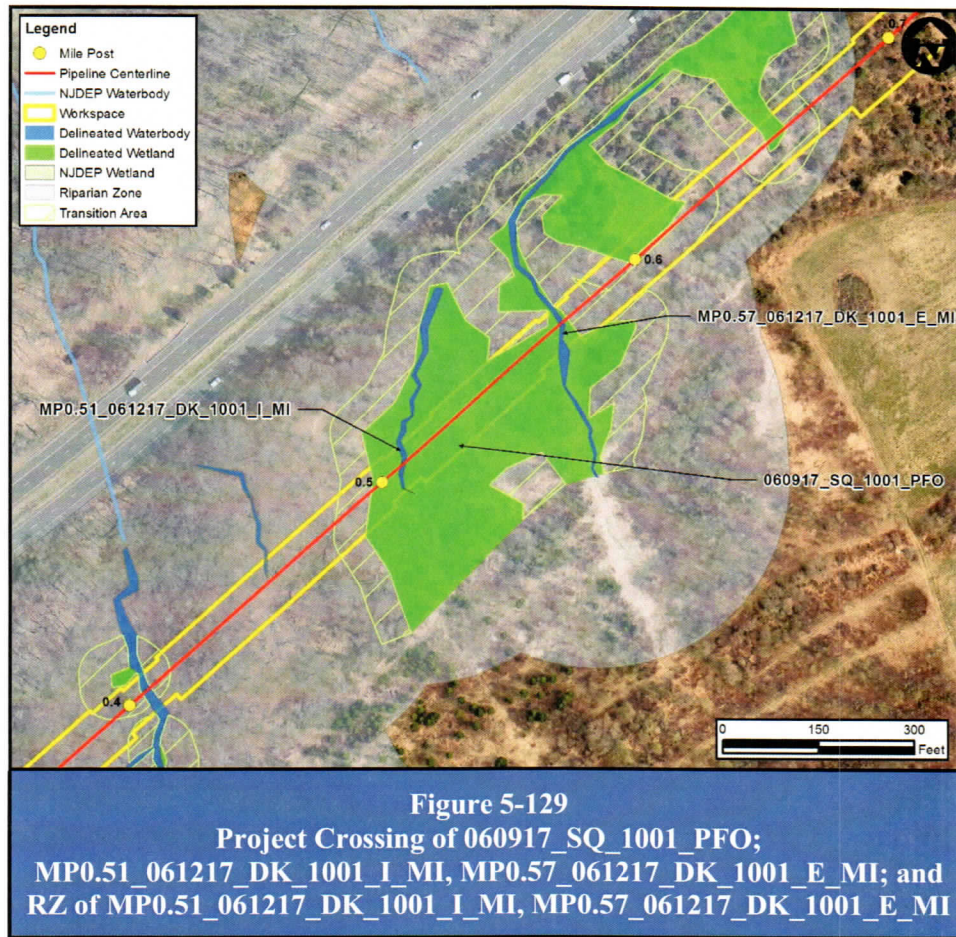
- Delineation of all wetlands in the Project area;
- Avoidance, and minimization of impacts to wetlands to the greatest extent practicable as described in the Alternatives Analysis provided in Attachment K of the Multi-Permit Application;
- Mitigation of unavoidable impacts as described in the Mitigation Proposal provided Attachment N of the Multi-Permit Application;
- Minimization of the operational easement width in wetlands;
- Implementation of trenchless technology construction techniques;
- Follow the site-specific *Inadvertent Returns and Contingency Plan* to avoid and minimize potential impacts from inadvertent return;
- Collocation with existing ROW areas where possible and permitted to minimize forest losses;
- Minimization of forest and vegetation clearing to the greatest extent practicable;
- Allowed post-construction succession of temporarily cleared forest areas and restoration of forested wetlands to a function or value greater than or equal to existing conditions where practicable;
- Restoration of grassland areas to a function or value greater than or equal to existing conditions;
- Mitigation/compensation provided offsite to potentially result in net-neutral or improved regional habitat conditions for potentially affected species populations;
- Adherence to applicable timing restrictions;
- Potential incorporation of NJDEP-reviewed and approved wildlife enhancement design features on mitigation sites and restoration areas;
- Regular (daily) clearing of work areas by agency-approved and qualified environmental monitors. Safe and appropriate wildlife relocation as needed;
- Regular inspection of protective measures such as fences by environmental monitors;
- Post-construction maintenance standards following NJDEP Integrated Vegetation Management guidance set forth in the *Strategies to Minimize Adverse Impacts to Wildlife from Management Activities on Powerline Rights-of-Way in NJ* (NJDEP ENSP 2011) (*Strategies*);
- Incorporate FERC Invasive Species Management Plan;
- Development and utilization of equipment cleaning/sterilization, and other protocols to avoid the spread of invasive species in sensitive terrestrial, wetland and aquatic habitats;
- Project-specific (SESC) standards including temporary erosion control measures such as silt fence, turbidity barriers, sediment filter bags, and erosion mats;
- Commitment not to use herbicides during post-construction maintenance activities;
- Specific seasonal restrictions and buffers will be followed for species and species groups in accordance with *Strategies*;
- Project-specific protocols on appropriate fueling station locations and prohibited areas such as streams and wetlands and transition areas; project-specific cleanup protocols and notification for any unintended spills during construction;
- Vegetation within temporary workspace areas including wetlands and transition areas will be cut flush to the ground and matted where practicable: no grubbing is proposed in these areas;
- Regular inspection of construction equipment to ensure proper functioning with appropriate filters and air quality controls;
- Adherence to agency-approved blasting plan;
- Avoidance of work personnel outside of the workspace in adjacent naturalized areas (sensitive habitat areas will be posted); and

- Post-construction restoration of stream banks and beds and downstream water quality monitoring as required (sensitive habitat areas) before, during and after construction.

FINDINGS

The implementation of appropriate avoidance, minimization, and mitigating measures identified for wetlands, transition areas, species, or species group will avoid and minimize impacts to these environmental resources, State-listed wildlife and plant species. By following the key measures as listed above and in the HPP, it is anticipated that existing populations of State-listed species will not be jeopardized.

5.151 Regulated Crossing 129



INVENTORY

Wetlands

Wetland 060917_SQ_1001_PFO is a field-delineated palustrine forested wetland complex occurring along a minor intermittent and minor ephemeral tributary of the Alexauken Creek. Additional information on this wetland can be found in the WDR provided in Attachment F of the Multi-Permit Application.

Transition Areas

The Transition Area is assumed to be 50 feet due to the lack of exceptional characteristics associated with the wetland feature.

Special Aquatic Sites

Based upon fieldwork and review of publicly available data, special aquatic sites as defined at N.J.A.C. 7:7A-1.4 are not located at this regulated crossing.

Public Lands

None of the regulated resources in this crossing are on public lands.

Critical Habitat and Threatened or Endangered Species and their Habitat

Wetland 060917_SQ_1001_PFO has not been identified as potentially suitable habitat for any threatened or endangered species.

Stream MP0.51_061217_DK_1001_E_MI has not been identified as potentially suitable habitat for any threatened or endangered species.

Stream MP0.57_061217_DK_1001_I_MI has not been identified as potentially suitable habitat for any threatened or endangered species.

Species accounts describing the natural history and habitat requirements; habitat assessment and/or targeted species survey results; study corridor documentation; potential habitat impacts; and recommended measures to avoid, minimize, and mitigate potential impacts to New Jersey State-listed species potentially occurring within regulated areas of the study corridor are provided in the HPP.

Channels

Stream MP0.51_061217_DK_1001_E_MI is a minor, ephemeral stream flowing north through forested habitat, approximately one foot wide. The streambed substrate is made up of gravel, sand, and silt, with some clay.

Stream MP0.57_061217_DK_1001_I_MI is a minor, ephemeral/intermittent stream that flows north through forested habitat and continues off the property through a culvert beneath Rt. 202. The feature is approximately three feet wide and the banks are incised. Silt, sand, and gravel comprise the streambed substrate.

Riparian Zones

RZ of MP0.51_061217_DK_1001_I_MI, MP0.57_061217_DK_1001_E_MI is the 300-foot riparian area associated with these streams. This riparian area is vegetated.

Fishery Resources

According to the Surface Water Quality Standards N.J.A.C.7:9, Alexauken Creek is classified as a freshwater trout maintenance waterbody (FW2-TM(C1)).

ASSESSMENT

Analysis Potential Temporary and Permanent Adverse Environmental Impacts of the Proposed Regulated Activity

Open-cut through wetland areas and dry crossing of streams is the pipeline construction method proposed at this regulated crossing. This crossing method is proposed at locations where the use of trenchless technology is not feasible. The Alternatives Analysis, Attachment K, documents this finding. Unavoidable temporary impacts include disturbance to vegetation for temporary construction access and workspace for the Project. Temporary disturbance of wetlands and stream channels during construction is necessary for pipeline installation. Permanent impacts include the removal of trees and shrubs located within 15 feet of the pipeline that could compromise the integrity of the pipeline in compliance with FERC requirements. Temporary matting is proposed within regulated areas to reduce impacts to herbaceous vegetation. In-place restoration is proposed to minimize environmental impacts at this crossing; mitigation, as required by NJDEP rules, is proposed to compensate for adverse wetland and riparian zone impacts. As a result of these

considerations, proposed construction at this crossing is not anticipated to result in significant permanent adverse environmental impacts.

Measures Taken to Reduce Potential Adverse Environmental Impacts

Where impacts could not be avoided with trenchless technology construction, PennEast sought to minimize the impacts to wetlands, State open waters and riparian zones with workspace modifications. A discussion of workspace modification efforts is provided in the Alternatives Analysis (Attachment K). PennEast will implement Project specific BMPs as detailed on the Project Soil Erosion and Sedimentation Control Plans (Attachment E-4) to further minimize or avoid adverse environmental impacts. Section 3 of this report details the range of proposed BMPs and mitigation measures taken to reduce potential adverse environmental impacts. These BMPs comply with the Standards for Soil Erosion and Sediment Control in New Jersey.

The following key measures will be implemented to avoid, minimize and mitigate potential adverse environmental impacts:

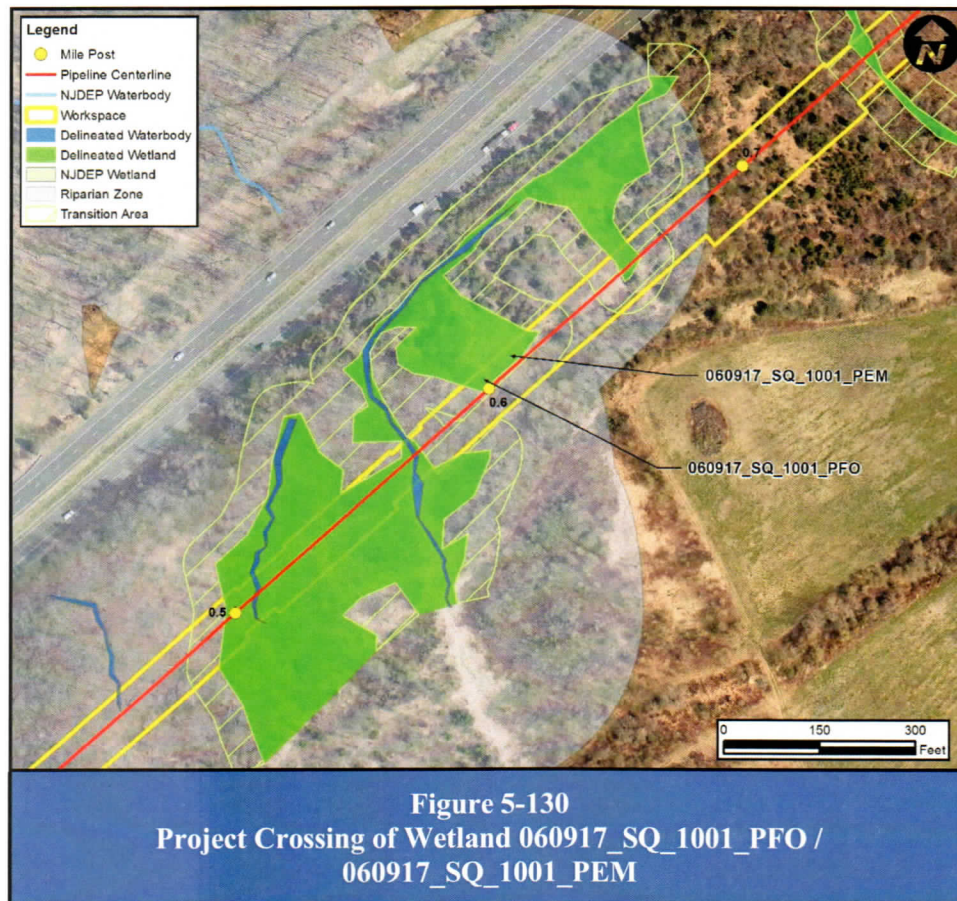
- Delineation of all wetlands in the Project area;
- Avoidance, and minimization of impacts to wetlands to the greatest extent practicable as described in the Alternatives Analysis provided in Attachment K of the Multi-Permit Application;
- Mitigation of unavoidable impacts as described in the Mitigation Proposal provided Attachment N of the Multi-Permit Application;
- Minimization of the operational easement width in wetlands;
- Implementation of trenchless technology construction techniques;
- Follow the site-specific *Inadvertent Returns and Contingency Plan* to avoid and minimize potential impacts from inadvertent return;
- Collocation with existing ROW areas where possible and permitted to minimize forest losses;
- Minimization of forest and vegetation clearing to the greatest extent practicable;
- Allowed post-construction succession of temporarily cleared forest areas and restoration of forested wetlands to a function or value greater than or equal to existing conditions where practicable;
- Restoration of grassland areas to a function or value greater than or equal to existing conditions;
- Mitigation/compensation provided offsite to potentially result in net-neutral or improved regional habitat conditions for potentially affected species populations;
- Adherence to applicable timing restrictions;
- Potential incorporation of NJDEP-reviewed and approved wildlife enhancement design features on mitigation sites and restoration areas;
- Regular (daily) clearing of work areas by agency-approved and qualified environmental monitors. Safe and appropriate wildlife relocation as needed;
- Regular inspection of protective measures such as fences by environmental monitors;
- Post-construction maintenance standards following NJDEP Integrated Vegetation Management guidance set forth in the *Strategies to Minimize Adverse Impacts to Wildlife from Management Activities on Powerline Rights-of-Way in NJ* (NJDEP ENSP 2011) (*Strategies*);
- Incorporate FERC Invasive Species Management Plan;
- Development and utilization of equipment cleaning/sterilization, and other protocols to avoid the spread of invasive species in sensitive terrestrial, wetland and aquatic habitats;
- Project-specific (SESC) standards including temporary erosion control measures such as silt fence, turbidity barriers, sediment filter bags, and erosion mats;

- Commitment not to use herbicides during post-construction maintenance activities;
- Specific seasonal restrictions and buffers will be followed for species and species groups in accordance with *Strategies*;
- Project-specific protocols on appropriate fueling station locations and prohibited areas such as streams and wetlands and transition areas; project-specific cleanup protocols and notification for any unintended spills during construction;
- Vegetation within temporary workspace areas including wetlands and transition areas will be cut flush to the ground and matted where practicable: no grubbing is proposed in these areas;
- Regular inspection of construction equipment to ensure proper functioning with appropriate filters and air quality controls;
- Adherence to agency-approved blasting plan;
- Avoidance of work personnel outside of the workspace in adjacent naturalized areas (sensitive habitat areas will be posted); and
- Post-construction restoration of stream banks and beds and downstream water quality monitoring as required (sensitive habitat areas) before, during and after construction.

FINDINGS

The implementation of appropriate avoidance, minimization, and mitigating measures identified for wetlands, transition areas, species, or species group will avoid and minimize impacts to these environmental resources, State-listed wildlife and plant species. By following the key measures as listed above and in the HPP, it is anticipated that existing populations of State-listed species will not be jeopardized.

5.152 Regulated Crossing 130



INVENTORY

Wetlands

Wetland 060917_SQ_1001_PFO / 060917_SQ_1001_PEM is a field-delineated palustrine forested/emergent wetland complex occurring along a minor intermittent and minor ephemeral tributary of the Alexauken Creek. Additional information on this wetland can be found in the WDR provided in Attachment F of the Multi-Permit Application.

Transition Areas

The Transition Area is assumed to be 50 feet due to the lack of exceptional characteristics associated with the wetland feature.

Special Aquatic Sites

Based upon fieldwork and review of publicly available data, special aquatic sites as defined at N.J.A.C. 7:7A-1.4 are not located at this regulated crossing.

Public Lands

None of the regulated resources in this crossing are on public lands.

Critical Habitat and Threatened or Endangered Species and their Habitat

Wetland 060917_SQ_1001_PFO / 060917_SQ_1001_77 has not been identified as potentially suitable habitat for any threatened or endangered species.

Species accounts describing the natural history and habitat requirements; habitat assessment and/or targeted species survey results; study corridor documentation; potential habitat impacts; and recommended measures to avoid, minimize, and mitigate potential impacts to New Jersey State-listed species potentially occurring within regulated areas of the study corridor are provided in the HPP.

State Open Waters and Channels

Based upon fieldwork and review of publicly available data, stream channels are not located at this regulated crossing.

Riparian Zones

Based upon fieldwork and review of publicly available data, riparian zones are not located at this regulated crossing.

Fishery Resources

Based upon fieldwork and review of publicly available data, fishery resources are not located at this regulated crossing.

ASSESSMENT

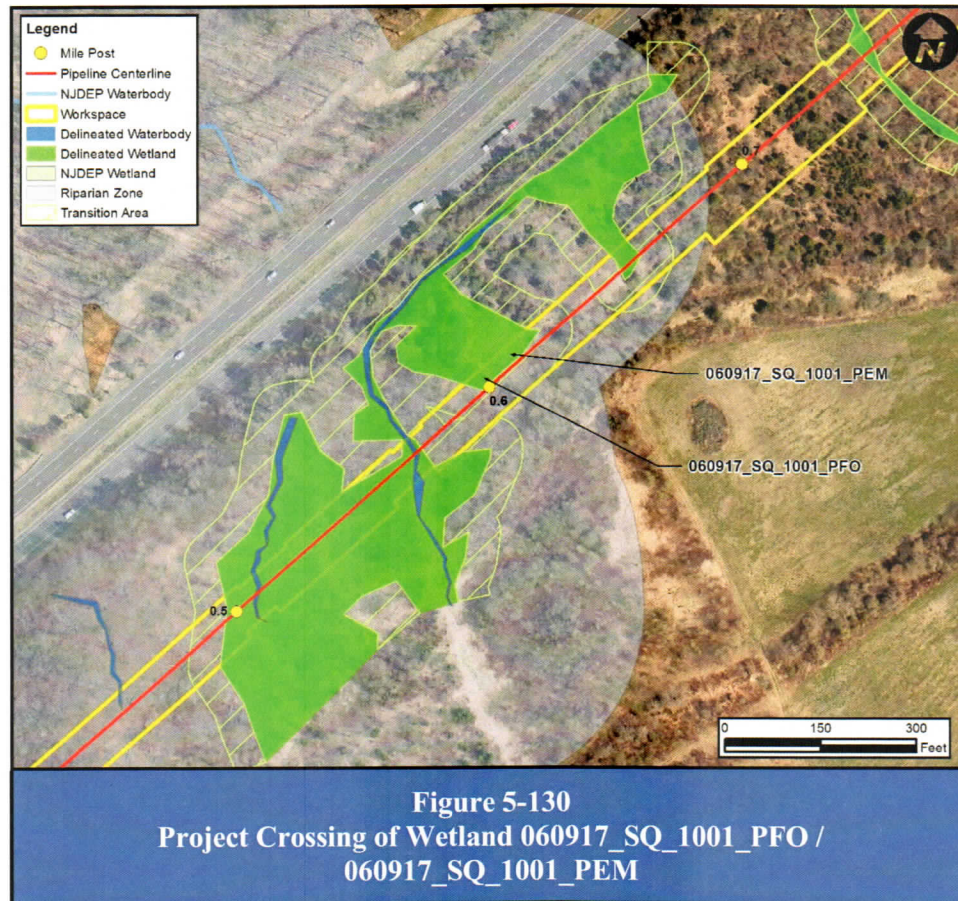
Analysis Potential Temporary and Permanent Adverse Environmental Impacts of the Proposed Regulated Activity

Open-cut through wetland areas is the pipeline construction method proposed at this regulated crossing. This crossing method is proposed at locations where the use of trenchless technology is not feasible. The Alternatives Analysis, Attachment K, documents this finding. Unavoidable temporary impacts include disturbance to vegetation for temporary construction access and workspace for the Project. Temporary disturbance of wetlands and stream channels during construction is necessary for pipeline installation. Permanent impacts include the removal of trees and shrubs located within 15 feet of the pipeline that could compromise the integrity of the pipeline in compliance with FERC requirements. In-place restoration is proposed to minimize environmental impacts at this crossing; mitigation, as required by NJDEP rules, is proposed to compensate for adverse wetland and riparian zone impacts. As a result of these considerations, proposed construction at this crossing is not anticipated to result in significant permanent adverse environmental impacts.

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5.152 Regulated Crossing 130



INVENTORY

Wetlands

Wetland 060917_SQ_1001_PFO / 060917_SQ_1001_PEM is a field-delineated palustrine forested/emergent wetland complex occurring along a minor intermittent and minor ephemeral tributary of the Alexauken Creek. Additional information on this wetland can be found in the WDR provided in Attachment F of the Multi-Permit Application.

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- Regular inspection of construction equipment to ensure proper functioning with appropriate filters and air quality controls;
- Adherence to agency-approved blasting plan;

- Avoidance of work personnel outside of the workspace in adjacent naturalized areas (sensitive habitat areas will be posted); and
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FINDINGS

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