

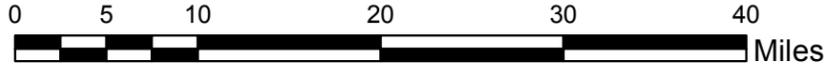
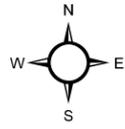
PENNEAST PIPELINE COMPANY LLC

PENNEAST PIPELINE



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Legend	
	Proposed Route
	Major Highways
	Highways
	Counties
	States
	States



Coordinate System: UTM83-18F
 Projection: Transverse Mercator
 Datum: North American 1983
 Units: Foot US

Prepared for:



Prepared by:



NO.	DATE	REVISIONS	BY	CHK	APP	APP

PennEast Pipeline Project

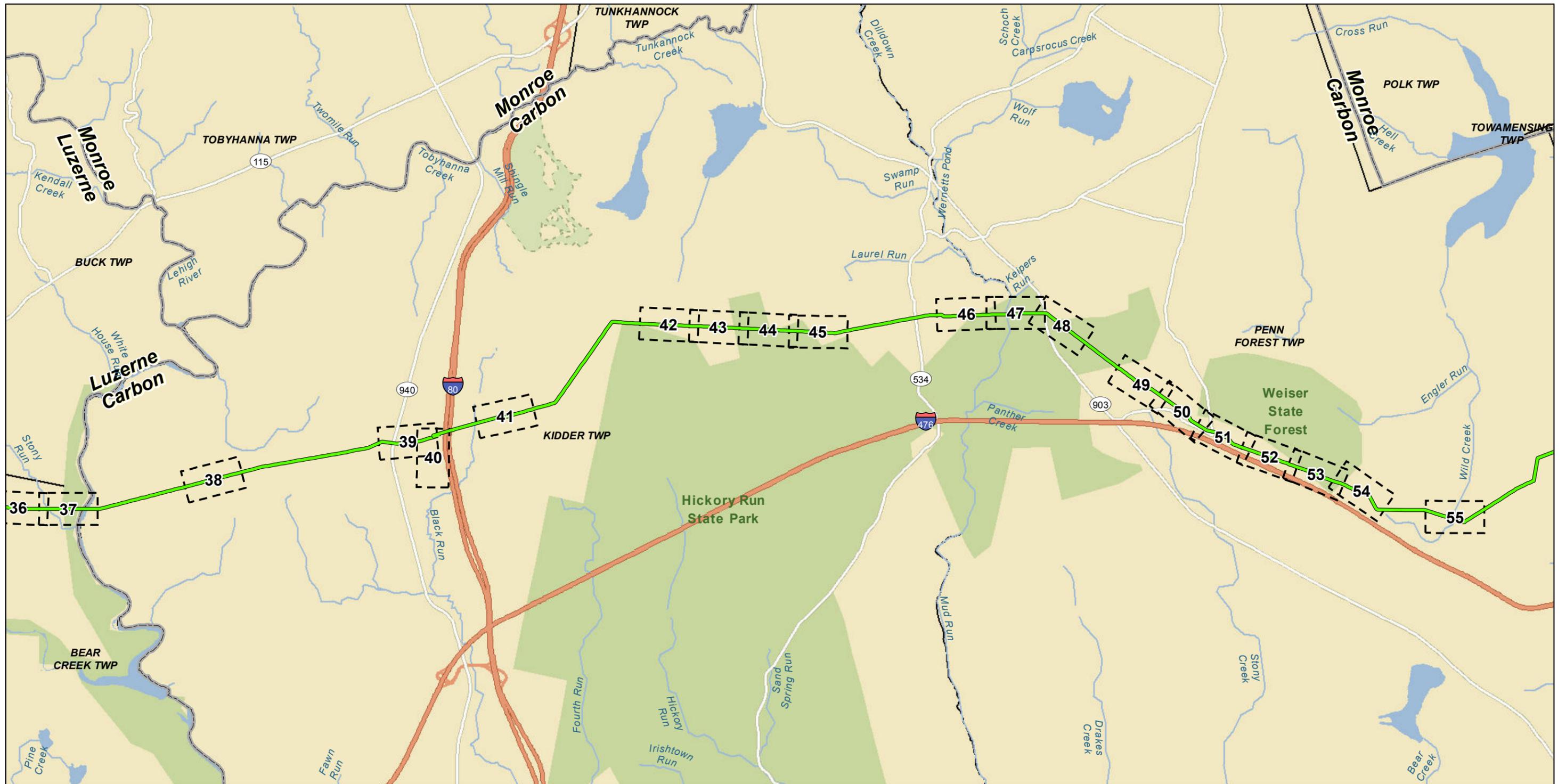
Cover Sheet
PennEast Pipeline
Wetland and Riparian Reforestation Plan

Project Mapping

1 inch = 10 miles

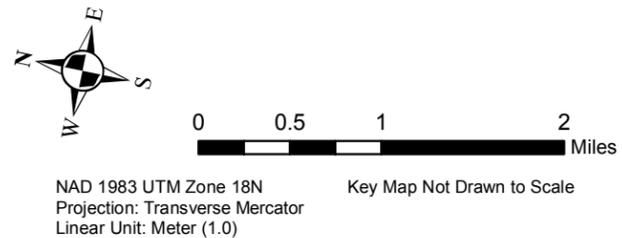
6/5/2020





Legend
 [Dashed Box] Index Map Extent [Solid Line] Municipality Boundary [Thick Line] County Boundary

Reference:
esri Streets

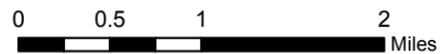


TITLE: Figure 2 - Sheet 3 of 6 PennEast Pipeline Project Wetland and Riparian Reforestation Map - Pennsylvania Index Sheets			
LOC: Carbon County (main county in view)			REV.:
CKD. BY: SB	ENG.:	Date: 6/16/2020	W.O.:
DRN. BY: NAB	SCALE: See Graphic Scale	DWG. NO.:	SHEET: 3 of 6



Legend
 - - - - Index Map Extent □ Municipality Boundary ▭ County Boundary

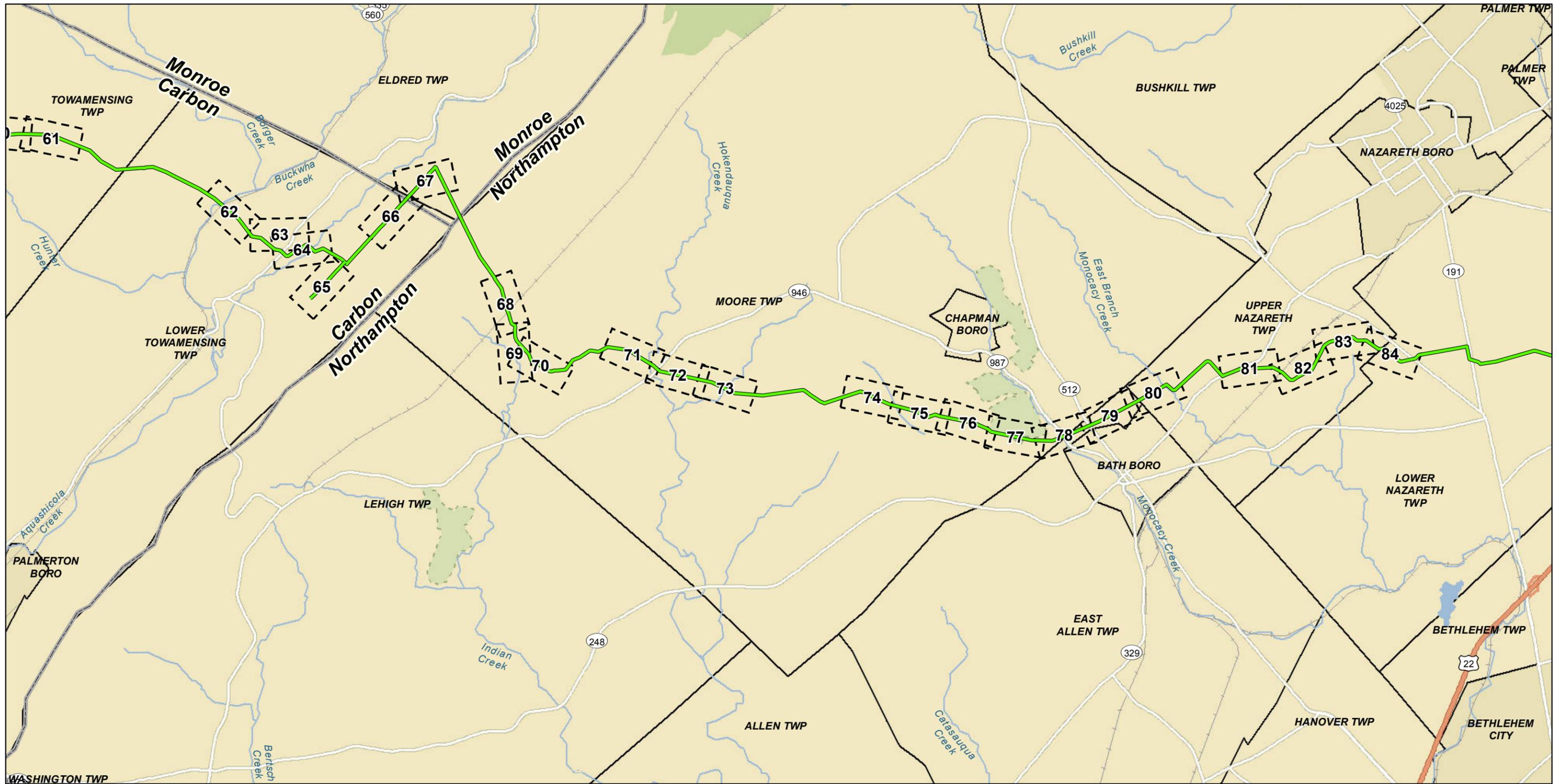
Reference:
 esri Streets



NAD 1983 UTM Zone 18N
 Projection: Transverse Mercator
 Linear Unit: Meter (1.0)
 Key Map Not Drawn to Scale

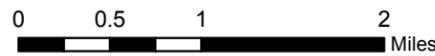


TITLE: Figure 2 - Sheet 4 of 6 PennEast Pipeline Project Wetland and Riparian Reforestation Map - Pennsylvania Index Sheets			
LOC: Carbon County (main county in view)			REV.:
CKD. BY: SB	ENG.:	Date: 6/16/2020	W.O.:
DRN. BY: NAB	SCALE: See Graphic Scale	DWG. NO.:	SHEET: 4 of 6



Legend
 - - - Index Map Extent □ Municipality Boundary ▭ County Boundary

Reference:
 esri Streets



NAD 1983 UTM Zone 18N
 Projection: Transverse Mercator
 Linear Unit: Meter (1.0)
 Key Map Not Drawn to Scale



TITLE:
 Figure 2 - Sheet 5 of 6
 PennEast Pipeline Project
 Wetland and Riparian Reforestation Map - Pennsylvania Index Sheets

LOC: Northampton County (main county in view)			REV.:
CKD. BY: SB	ENG.:	Date: 6/16/2020	W.O.:
DRN. BY: NAB	SCALE: See Graphic Scale	DWG. NO.:	SHEET: 5 of 6



WATERSHED(S) & DESIGNATION:
 MILL CREEK / LITTLE BEAR CREEK- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	Existing Culvert	PUB	Riparian Seeding
— Pipeline Centerline	Watercourse	POW	Chapter 93 Designated Watershed
— Access Road Centerline	PEM	100-Foot Riparian Buffer	
— Maintained 30-ft ROW	PFO	150-Foot Riparian Buffer	
— Aboveground Facility Permanent Easement	PFO Mosaic (50/50)	Riparian Planting	
— Limits of Disturbance	PSS	Wetland Planting	
— County Boundary	Vernal Pool	Wetland Seeding	

Notes:

1. See planting schedule on Notes and Details sheets.
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 IFC Workspace 12-12-2019
 ESRI Aerial Imagery, 2016

0 100 200 400 600 Feet



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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BEAR CREEK TWP, LUZERNE, PA



WATERSHED(S) & DESIGNATION:
 BEAR CREEK / LITTLE BEAR CREEK- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility Permanent Easement	■ PFO Mosaic (50/50)	■ Riparian Planting	
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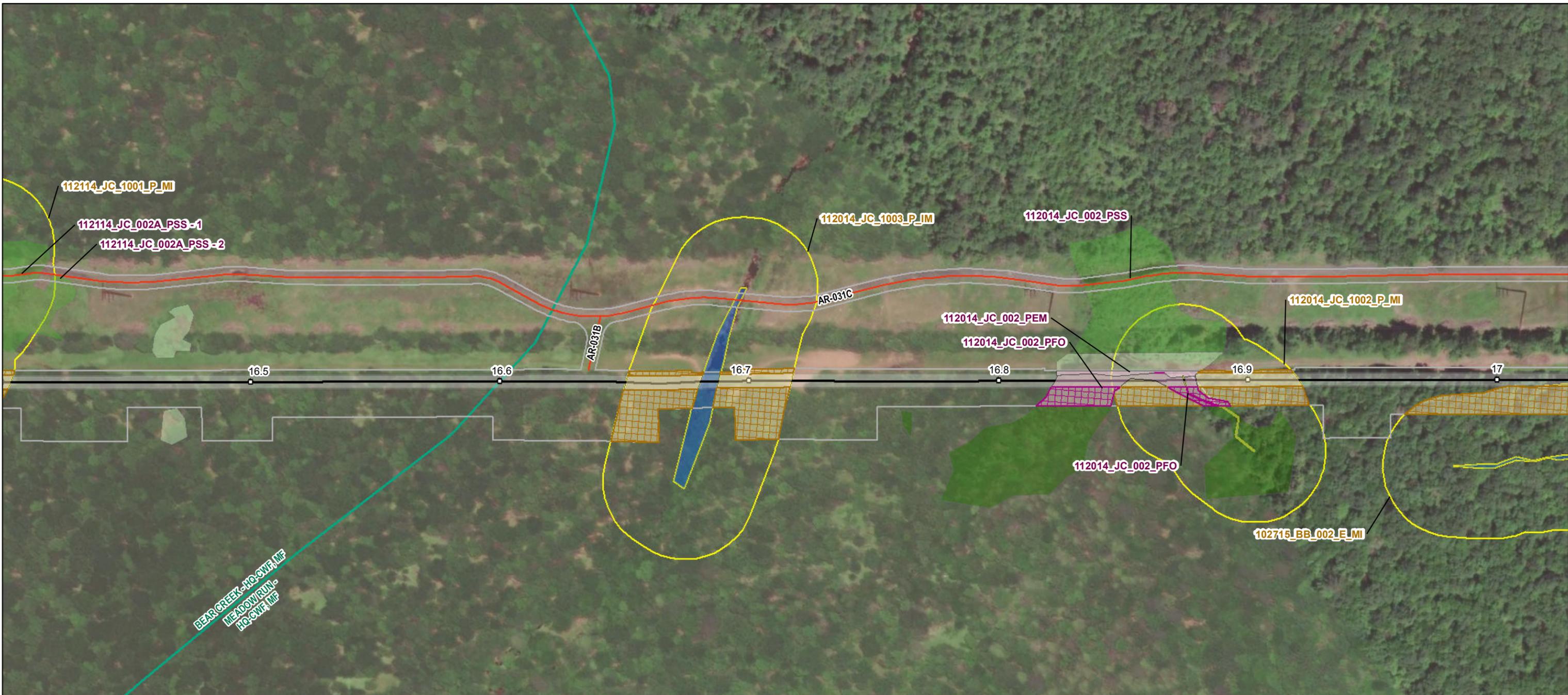
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PennEast Pennsylvania Wetland and Riparian Reforestation Plan

Date: 6/16/2020 Page 24 of 98

BEAR CREEK TWP, LUZERNE, PA



WATERSHED(S) & DESIGNATION:
 BEAR CREEK / MEADOW RUN- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility Permanent Easement	■ PFO Mosaic (50/50)	■ Riparian Planting	
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PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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BEAR CREEK TWP, LUZERNE, PA



WATERSHED(S) & DESIGNATION:
 MEADOW RUN / SNIDER RUN / LITTLE SHADES CREEK-
 HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
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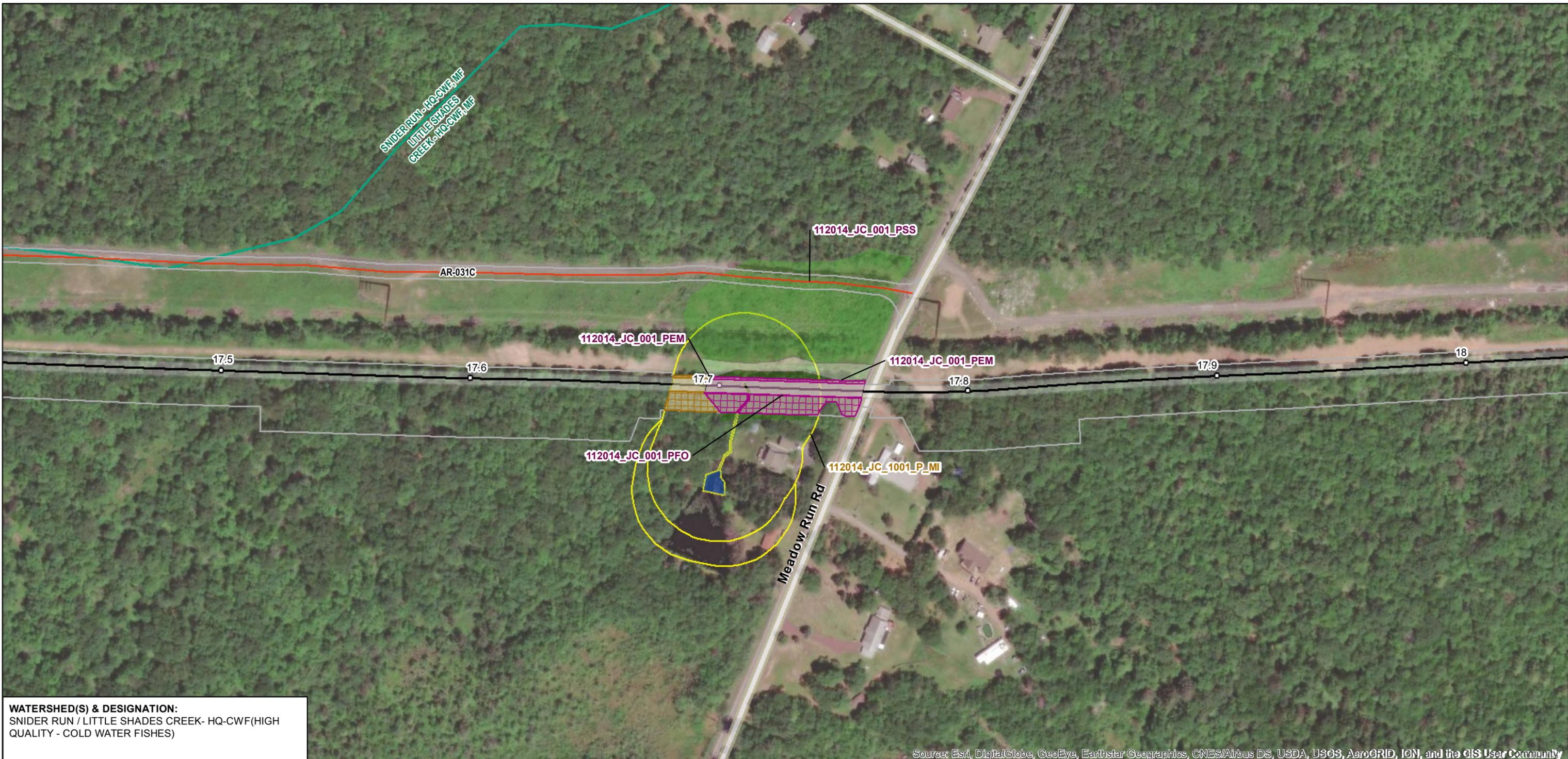
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BEAR CREEK TWP, LUZERNE, PA



WATERSHED(S) & DESIGNATION:
 SNIDER RUN / LITTLE SHADES CREEK- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend			
○ Milepost	Existing Culvert	PUB	Riparian Seeding
— Pipeline Centerline	Watercourse	POW	Chapter 93 Designated Watershed
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PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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BEAR CREEK TWP, LUZERNE, PA



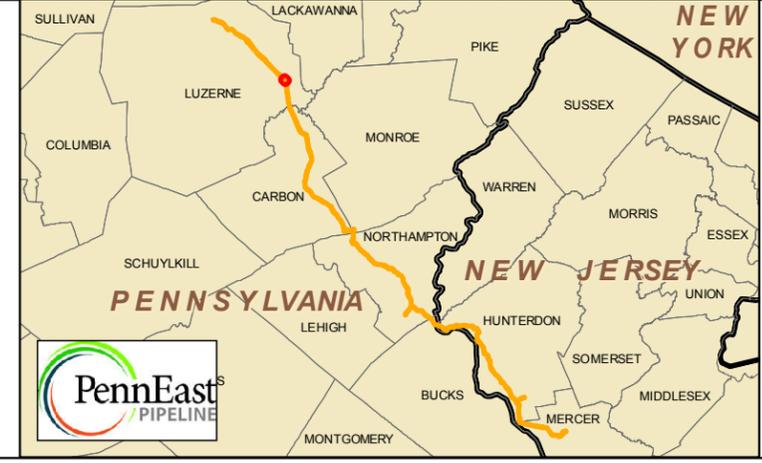
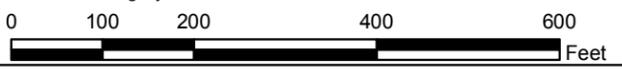
WATERSHED(S) & DESIGNATION:
 LITTLE SHADES CREEK- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend			
○ Milepost	Existing Culvert	PUB	Riparian Seeding
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PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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BEAR CREEK TWP, LUZERNE, PA



WATERSHED(S) & DESIGNATION:
 LITTLE SHADES CREEK / SHADES CREEK- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

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○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
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PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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BEAR CREEK TWP, LUZERNE, PA



WATERSHED(S) & DESIGNATION:
 LITTLE SHADES CREEK / SHADES CREEK- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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PennEast Pennsylvania Wetland and Riparian Reforestation Plan

Date: 6/16/2020 Page 31 of 98

BEAR CREEK TWP, LUZERNE, PA



WATERSHED(S) & DESIGNATION:
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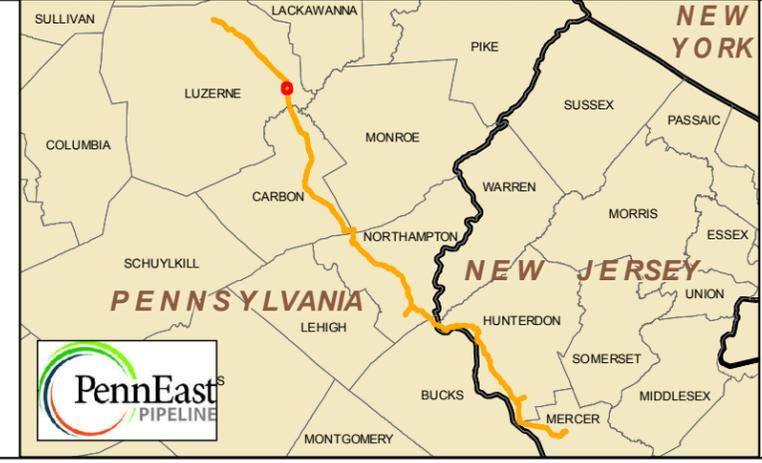
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PennEast Pennsylvania Wetland and Riparian Reforestation Plan

Date: 6/16/2020 Page 32 of 98

BEAR CREEK TWP, LUZERNE, PA



WATERSHED(S) & DESIGNATION:
 SHADES CREEK- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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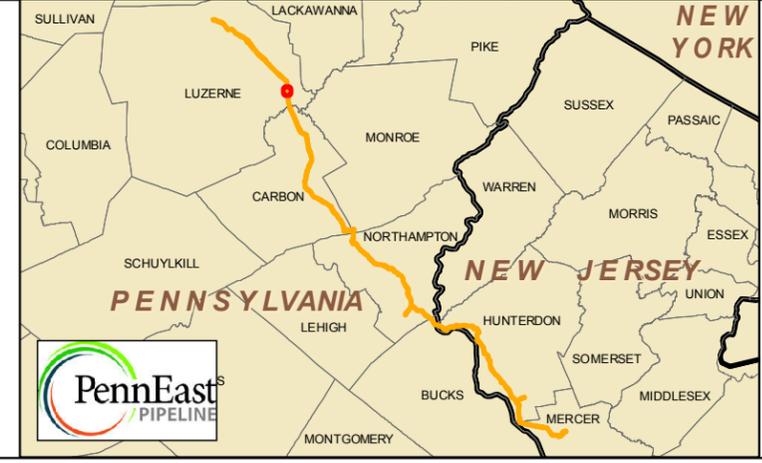
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PennEast Pennsylvania Wetland and Riparian Reforestation Plan

Date: 6/16/2020 Page 33 of 98

BEAR CREEK TWP, LUZERNE, PA



WATERSHED(S) & DESIGNATION:
 SHADES CREEK / STONY RUN- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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PennEast Pennsylvania Wetland and Riparian Reforestation Plan

Date: 6/16/2020 Page 34 of 98

BEAR CREEK TWP, LUZERNE, PA



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PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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BEAR CREEK TWP, LUZERNE, PA



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 IFC Workspace 12-12-2019
 ESRI Aerial Imagery, 2016

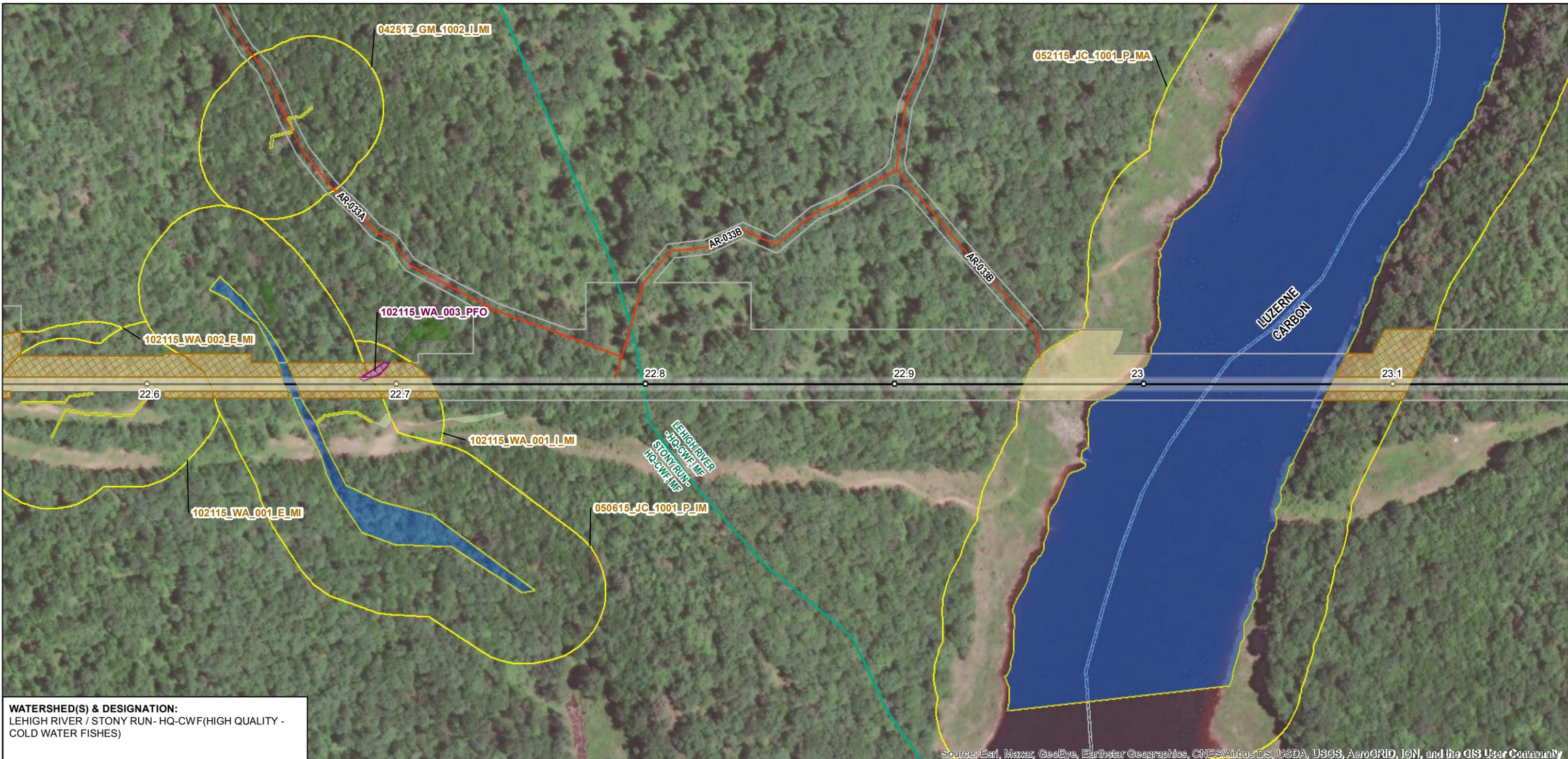
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PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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BEAR CREEK TWP, LUZERNE, PA



WATERSHED(S) & DESIGNATION:
 LEHIGH RIVER / STONY RUN - HQ-CWF (HIGH QUALITY - COLD WATER FISHES)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility Permanent Easement	■ PFO Mosaic (50/50)	■ Riparian Planting	
— Limits of Disturbance	■ PSS	■ Wetland Planting	
— County Boundary	■ Vernal Pool	■ Wetland Seeding	

Notes:

1. See planting schedule on Notes and Details sheets.
2. If alternative restoration arrangements have been agreed upon with the landowner or land manager, the alternative restoration plan will be used.
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References:
 County Boundaries, Chapter 93 Designated Use and Existing Use Streams, Small Watersheds (PASDA) Restoration of Environmental Features 9-13-2019
 IFC Workspace 12-12-2019
 ESRI Aerial Imagery, 2016

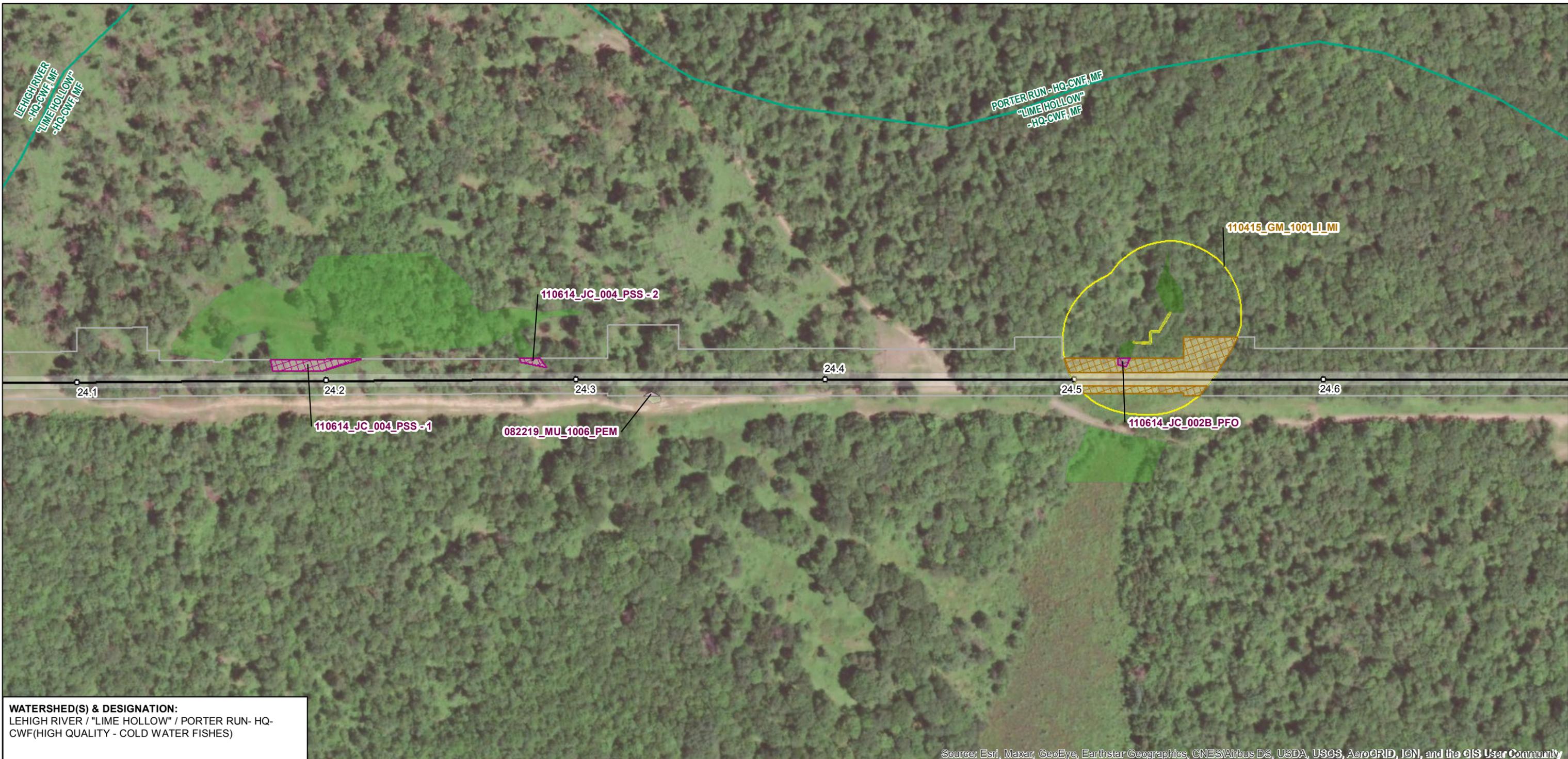
0 100 200 400 600 Feet



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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BEAR CREEK TWP/KIDDER TWP,
LUZERNE/CARBON, PA



WATERSHED(S) & DESIGNATION:
 LEHIGH RIVER / "LIME HOLLOW" / PORTER RUN- HQ-
 CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility Permanent Easement	■ PFO Mosaic (50/50)	■ Riparian Planting	
— Limits of Disturbance	■ PSS	■ Wetland Planting	
— County Boundary	■ Vernal Pool	■ Wetland Seeding	

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 IFC Workspace 12-12-2019
 ESRI Aerial Imagery, 2016

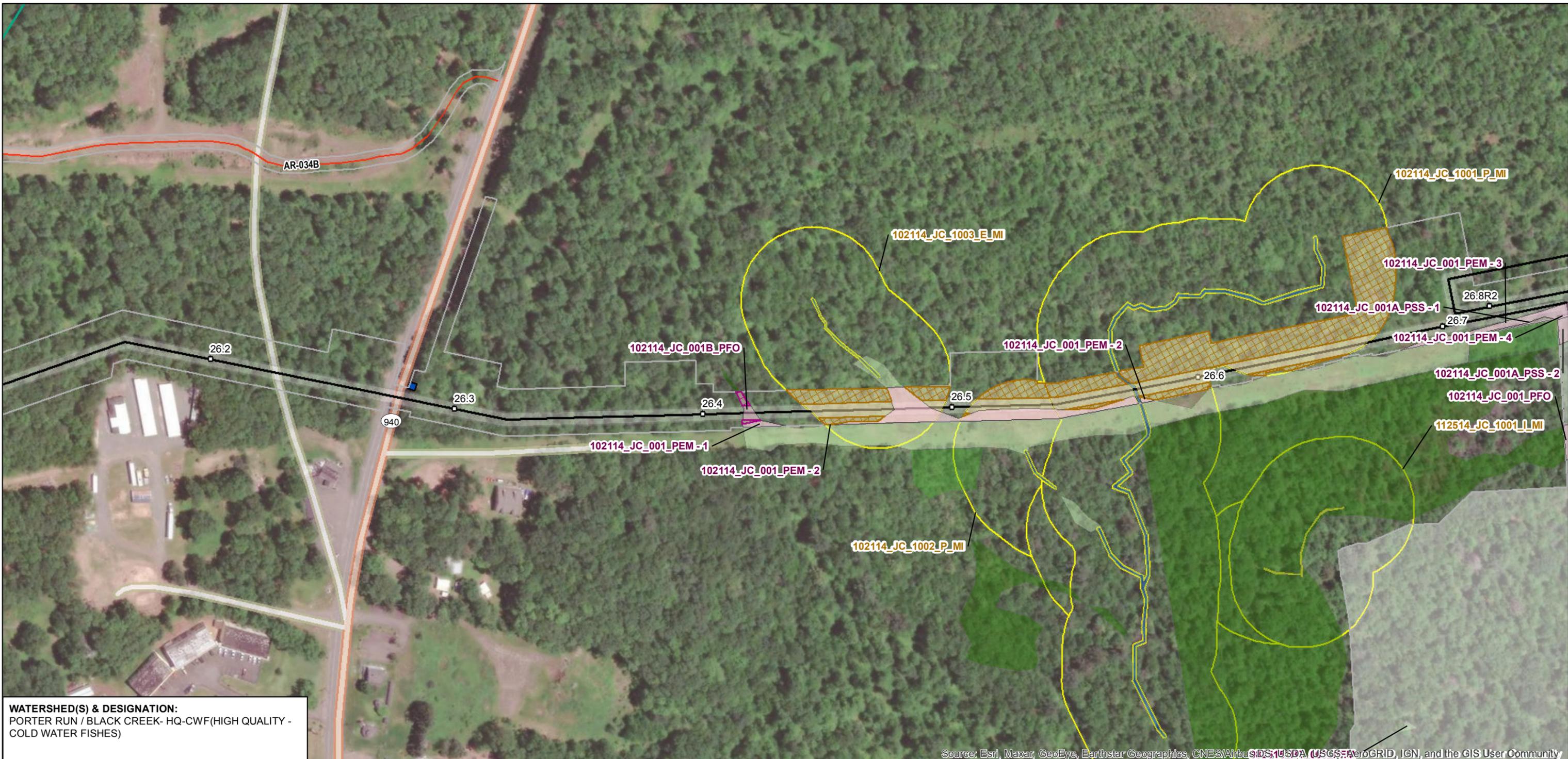
0 100 200 400 600 Feet



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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KIDDER TWP, CARBON, PA



WATERSHED(S) & DESIGNATION:
 PORTER RUN / BLACK CREEK- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility Permanent Easement	■ PFO Mosaic (50/50)	■ Riparian Planting	
— Limits of Disturbance	■ PSS	■ Wetland Planting	
— County Boundary	■ Vernal Pool	■ Wetland Seeding	

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 ESRI Aerial Imagery, 2016

0 100 200 400 600 Feet



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KIDDER TWP, CARBON, PA



WATERSHED(S) & DESIGNATION:
 BLACK CREEK- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	Existing Culvert	PUB	Riparian Seeding
— Pipeline Centerline	Watercourse	POW	Chapter 93 Designated Watershed
— Access Road Centerline	PEM	100-Foot Riparian Buffer	
— Maintained 30-ft ROW	PFO	150-Foot Riparian Buffer	
— Aboveground Facility Permanent Easement	PFO Mosaic (50/50)	Riparian Planting	
— Limits of Disturbance	PSS	Wetland Planting	
— County Boundary	Vernal Pool	Wetland Seeding	

Notes:

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 ESRI Aerial Imagery, 2016

0 100 200 400 600 Feet



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KIDDER TWP, CARBON, PA



WATERSHED(S) & DESIGNATION:
 HICKORY RUN- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility	■ PFO Mosaic (50/50)	■ Riparian Planting	
— Permanent Easement	■ PSS	■ Wetland Planting	
— Limits of Disturbance	■ Vernal Pool	■ Wetland Seeding	
— County Boundary			

Notes:

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 IFC Workspace 12-12-2019
 ESRI Aerial Imagery, 2016



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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KIDDER TWP, CARBON, PA



WATERSHED(S) & DESIGNATION:
 HICKORY RUN / HAWK RUN / LAUREL RUN- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend			
○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility	■ PFO Mosaic (50/50)	■ Riparian Planting	
— Permanent Easement	■ PSS	■ Wetland Planting	
— Limits of Disturbance	■ Vernal Pool	■ Wetland Seeding	
— County Boundary			

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 ESRI Aerial Imagery, 2016



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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KIDDER TWP, CARBON, PA



WATERSHED(S) & DESIGNATION:
 HAWK RUN / LAUREL RUN- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

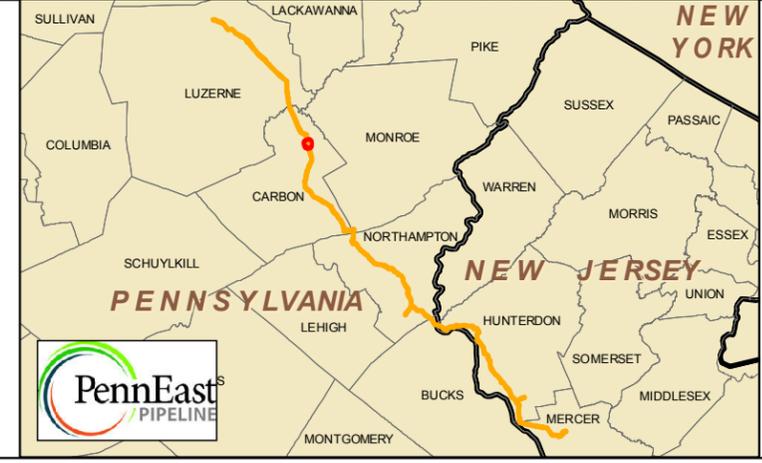
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○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility Permanent Easement	■ PFO Mosaic (50/50)	■ Riparian Planting	
— Limits of Disturbance	■ PSS	■ Wetland Planting	
— County Boundary	■ Vernal Pool	■ Wetland Seeding	

Notes:

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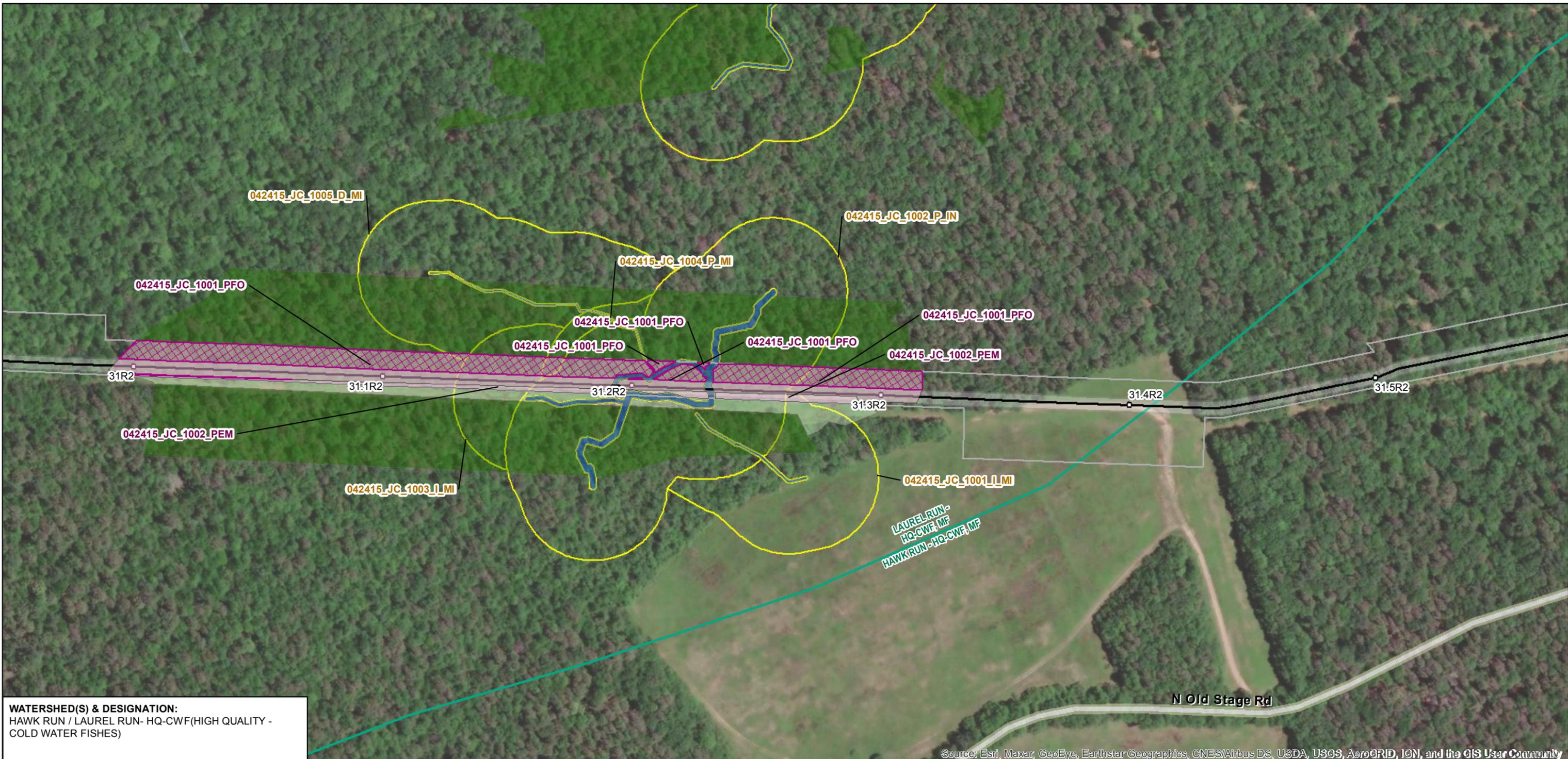
References:
 County Boundaries, Chapter 93 Designated Use and Existing Use Streams, Small Watersheds (PASDA) Restoration of Environmental Features 9-13-2019
 IFC Workspace 12-12-2019
 ESRI Aerial Imagery, 2016



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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KIDDER TWP, CARBON, PA



WATERSHED(S) & DESIGNATION:
 HAWK RUN / LAUREL RUN- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility Permanent Easement	■ PFO Mosaic (50/50)	■ Riparian Planting	
— Limits of Disturbance	■ PSS	■ Wetland Planting	
— County Boundary	■ Vernal Pool	■ Wetland Seeding	

Notes:

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 IFC Workspace 12-12-2019
 ESRI Aerial Imagery, 2016

0 100 200 400 600 Feet



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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KIDDER TWP, CARBON, PA



WATERSHED(S) & DESIGNATION:
 MUD RUN- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

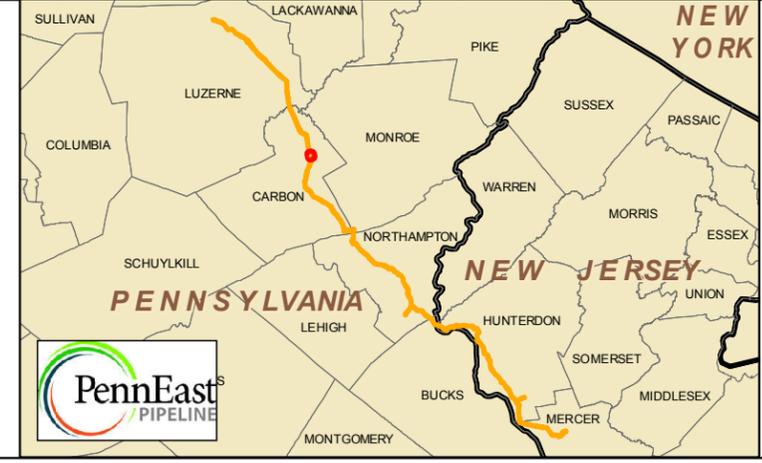
○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility Permanent Easement	■ PFO Mosaic (50/50)	■ Riparian Planting	
— Limits of Disturbance	■ PSS	■ Wetland Planting	
— County Boundary	■ Vernal Pool	■ Wetland Seeding	

Notes:

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 IFC Workspace 12-12-2019
 ESRI Aerial Imagery, 2016

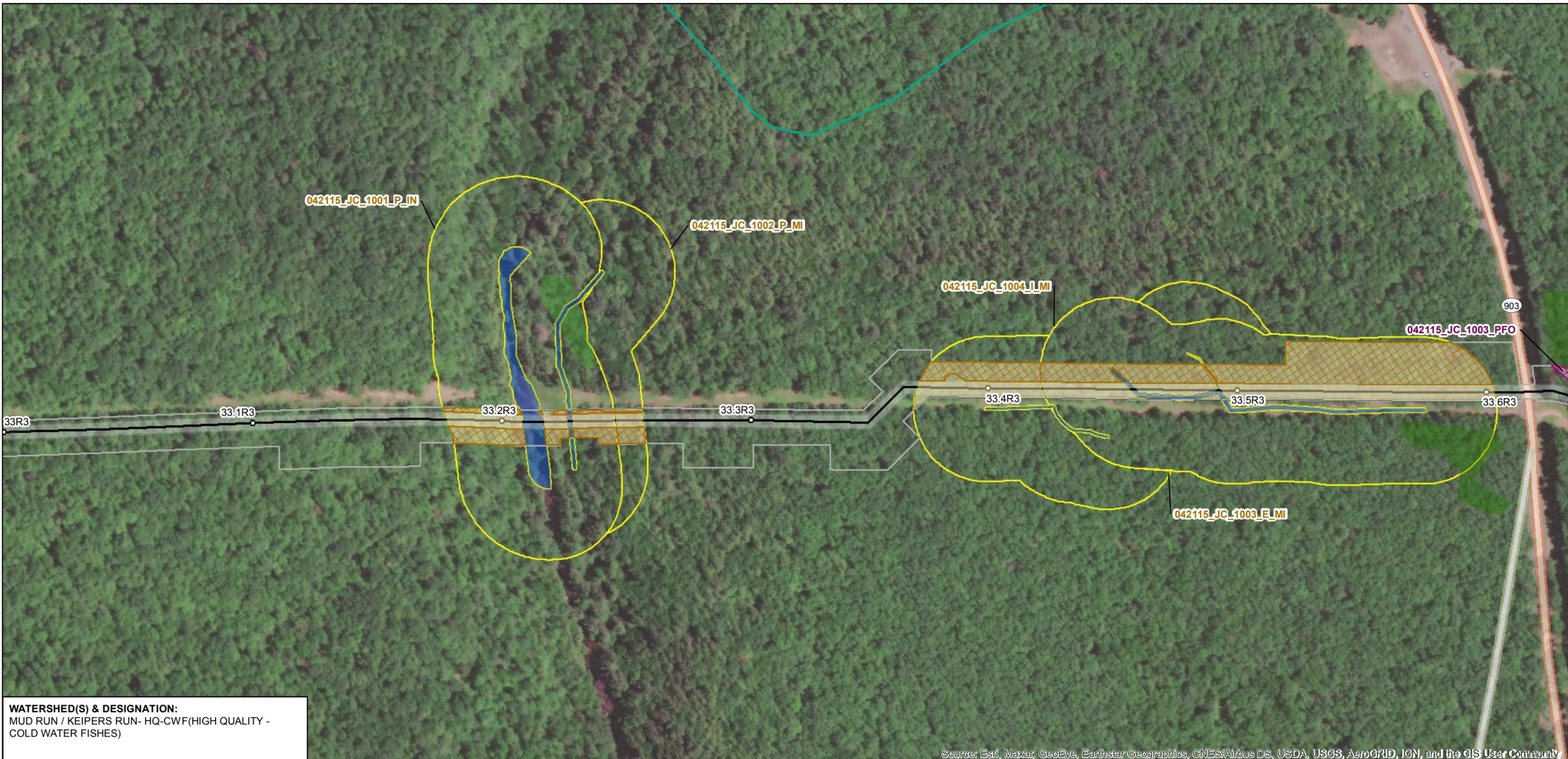
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PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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KIDDER TWP, CARBON, PA



WATERSHED(S) & DESIGNATION:
 MUD RUN / KEIPERS RUN- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

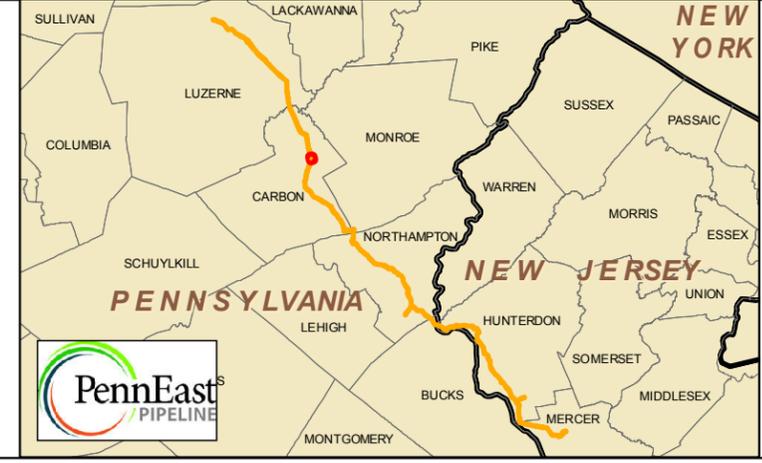
○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility Permanent Easement	■ PFO Mosaic (50/50)	■ Riparian Planting	
— Limits of Disturbance	■ PSS	■ Wetland Planting	
— County Boundary	■ Vernal Pool	■ Wetland Seeding	

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 IFC Workspace 12-12-2019
 ESRI Aerial Imagery, 2016

0 100 200 400 600 Feet



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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KIDDER TWP/PENN FOREST TWP, CARBON, PA



WATERSHED(S) & DESIGNATION:
 MUD RUN / PANTHER CREEK- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility	■ PFO Mosaic (50/50)	■ Riparian Planting	
— Permanent Easement	■ PSS	■ Wetland Planting	
— Limits of Disturbance	■ Vernal Pool	■ Wetland Seeding	
— County Boundary			

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 IFC Workspace 12-12-2019
 ESRI Aerial Imagery, 2016



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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PENN FOREST TWP, CARBON, PA



WATERSHED(S) & DESIGNATION:
 STONY CREEK- EV(EXCEPTIONAL VALUE)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

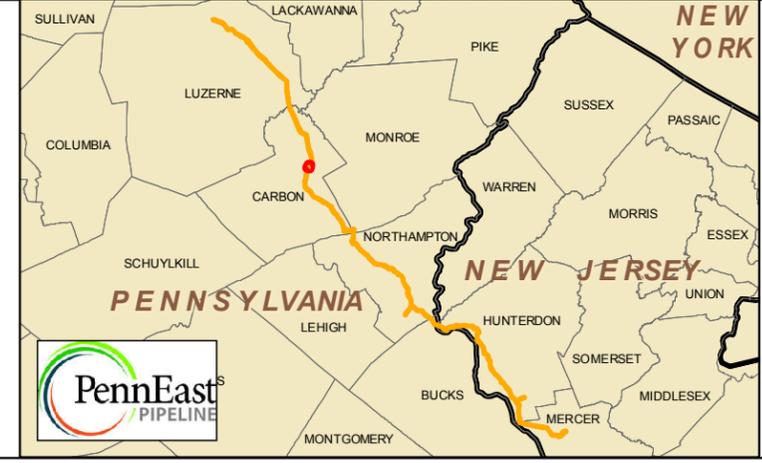
○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
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— Permanent Easement	■ PSS	■ Wetland Planting	
— Limits of Disturbance	■ Vernal Pool	■ Wetland Seeding	
— County Boundary			

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 IFC Workspace 12-12-2019
 ESRI Aerial Imagery, 2016

0 100 200 400 600 Feet



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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PENN FOREST TWP, CARBON, PA



WATERSHED(S) & DESIGNATION:
YELLOW RUN / STONY CREEK- EV(EXCEPTIONAL VALUE)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
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— Limits of Disturbance	■ PSS	■ Wetland Planting	
— County Boundary	■ Vernal Pool	■ Wetland Seeding	

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0 100 200 400 600 Feet



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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PENN FOREST TWP, CARBON, PA



WATERSHED(S) & DESIGNATION:
YELLOW RUN / STONY CREEK- EV(EXCEPTIONAL VALUE)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
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— Limits of Disturbance	■ Vernal Pool	■ Wetland Seeding	
— County Boundary			

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PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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PENN FOREST TWP, CARBON, PA



WATERSHED(S) & DESIGNATION:
YELLOW RUN- EV(EXCEPTIONAL VALUE)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend			
○ Milepost	Existing Culvert	PUB	Riparian Seeding
— Pipeline Centerline	Watercourse	POW	Chapter 93 Designated Watershed
— Access Road Centerline	PEM	100-Foot Riparian Buffer	
— Maintained 30-ft ROW	PFO	150-Foot Riparian Buffer	
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— Limits of Disturbance	PSS	Wetland Planting	
— County Boundary	Vernal Pool	Wetland Seeding	

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 ESRI Aerial Imagery, 2016



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PENN FOREST TWP, CARBON, PA



WATERSHED(S) & DESIGNATION:
 YELLOW RUN / ENGLER RUN / WILD CREEK-
 EV(EXCEPTIONAL VALUE)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend			
○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility	■ PFO Mosaic (50/50)	■ Riparian Planting	
— Permanent Easement	■ PSS	■ Wetland Planting	
— Limits of Disturbance	■ Vernal Pool	■ Wetland Seeding	
— County Boundary			

Notes:
 1. See planting schedule on Notes and Details sheets.
 2. If alternative restoration arrangements have been agreed upon with the landowner or land manager, the alternative restoration plan will be used.
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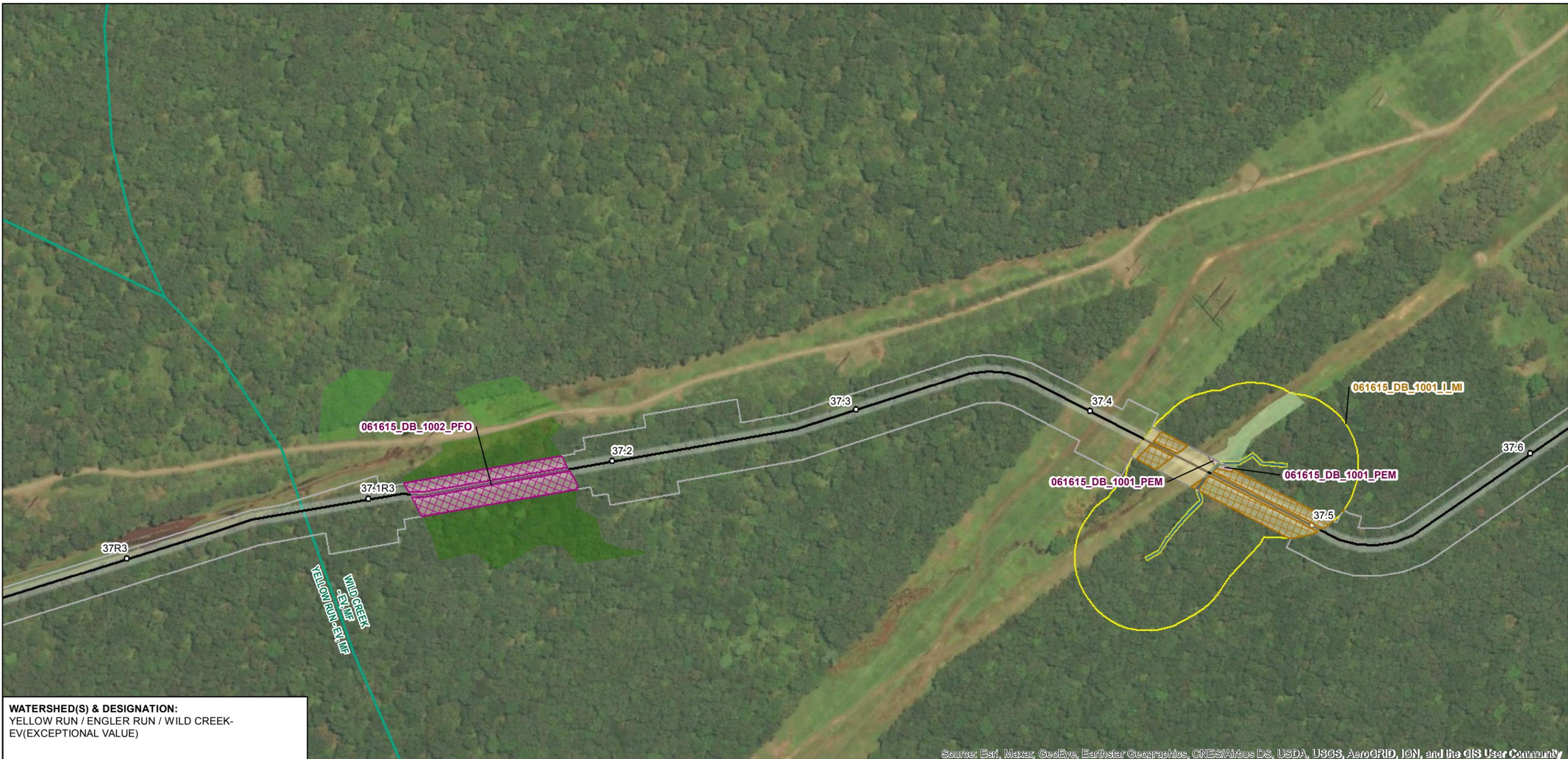
References:
 County Boundaries, Chapter 93 Designated Use and Existing Use Streams, Small Watersheds (PASDA) Restoration of Environmental Features 9-13-2019
 IFC Workspace 12-12-2019
 ESRI Aerial Imagery, 2016



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PENN FOREST TWP, CARBON, PA



WATERSHED(S) & DESIGNATION:
 YELLOW RUN / ENGLER RUN / WILD CREEK-
 EV(EXCEPTIONAL VALUE)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility	■ PFO Mosaic (50/50)	■ Riparian Planting	
— Permanent Easement	■ PSS	■ Wetland Planting	
— Limits of Disturbance	■ Vernal Pool	■ Wetland Seeding	
— County Boundary			

Notes:

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 IFC Workspace 12-12-2019
 ESRI Aerial Imagery, 2016



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PENN FOREST TWP, CARBON, PA



WATERSHED(S) & DESIGNATION:
WILD CREEK- EV(EXCEPTIONAL VALUE)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility Permanent Easement	■ PFO Mosaic (50/50)	■ Riparian Planting	
— Limits of Disturbance	■ PSS	■ Wetland Planting	
— County Boundary	■ Vernal Pool	■ Wetland Seeding	

Notes:

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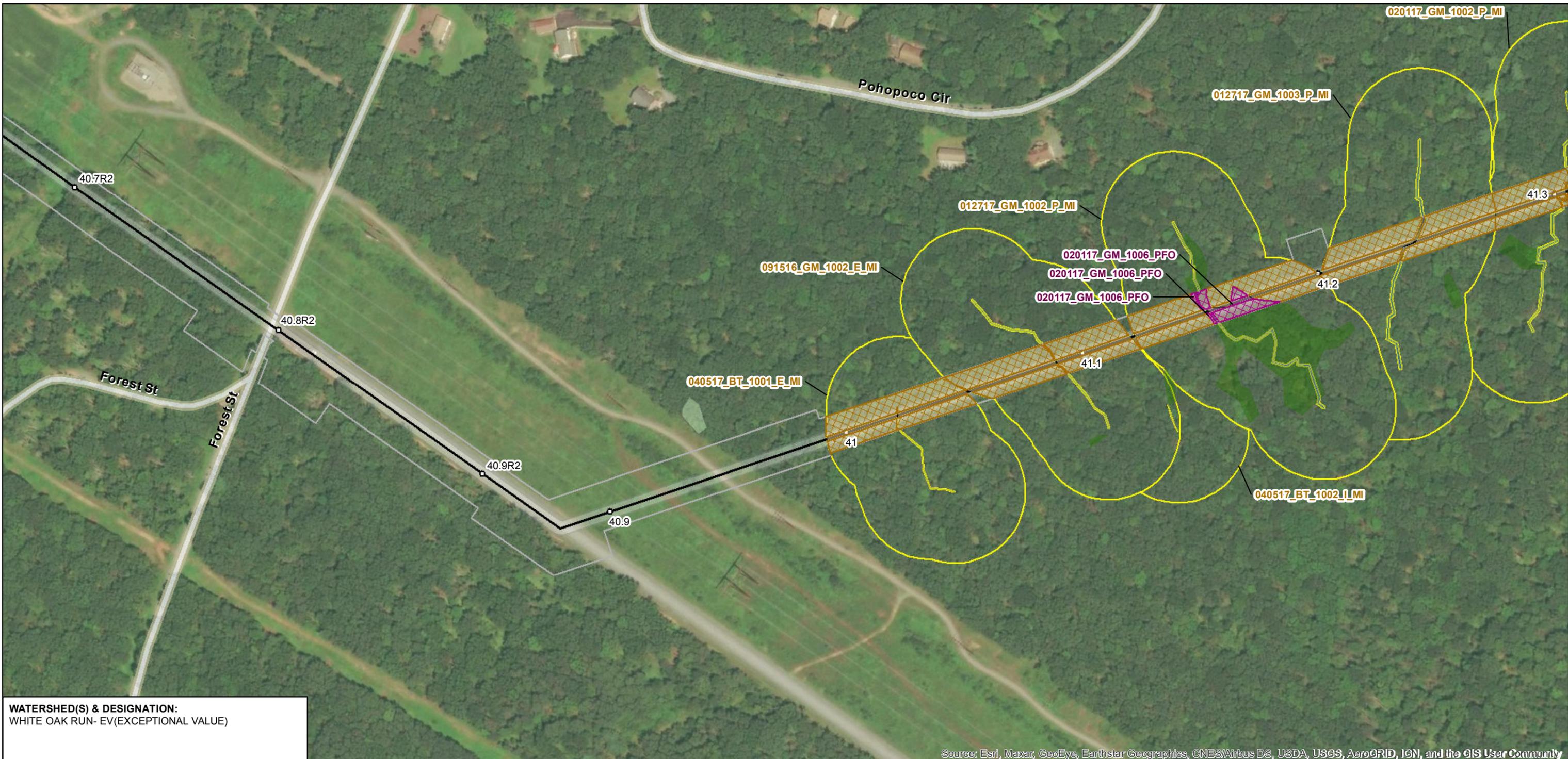
References:
County Boundaries, Chapter 93 Designated Use and Existing Use Streams, Small Watersheds (PASDA) Restoration of Environmental Features 9-13-2019 IFC Workspace 12-12-2019
ESRI Aerial Imagery, 2016



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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PENN FOREST TWP, CARBON, PA



WATERSHED(S) & DESIGNATION:
 WHITE OAK RUN- EV(EXCEPTIONAL VALUE)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility Permanent Easement	■ PFO Mosaic (50/50)	■ Riparian Planting	
— Limits of Disturbance	■ PSS	■ Wetland Planting	
— County Boundary	■ Vernal Pool	■ Wetland Seeding	

Notes:

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 ESRI Aerial Imagery, 2016

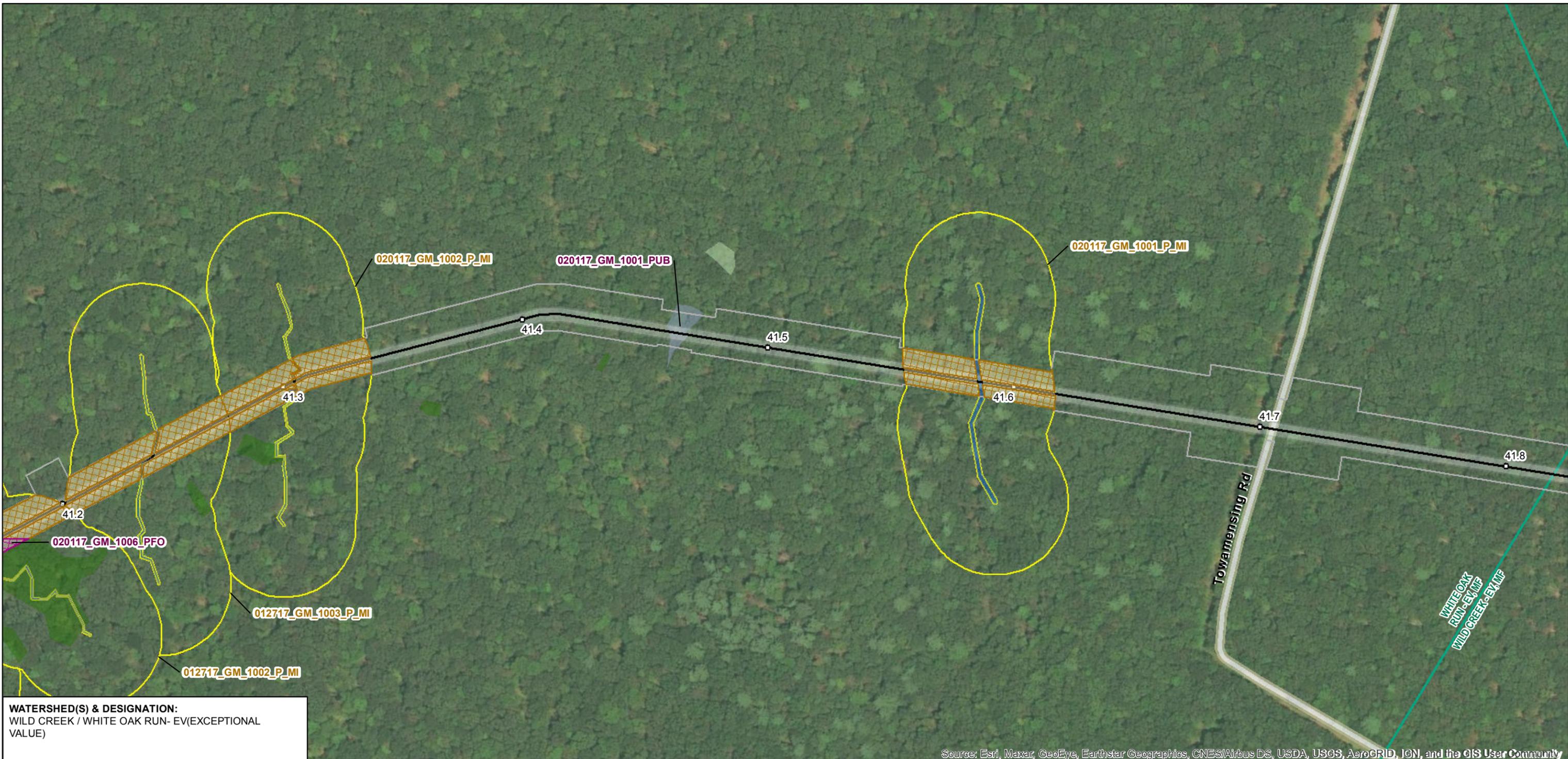
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PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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PENN FOREST TWP/TOWAMENSING TWP,
 CARBON, PA



WATERSHED(S) & DESIGNATION:
 WILD CREEK / WHITE OAK RUN- EV(EXCEPTIONAL VALUE)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility	■ PFO Mosaic (50/50)	■ Riparian Planting	
— Permanent Easement	■ PSS	■ Wetland Planting	
— Limits of Disturbance	■ Vernal Pool	■ Wetland Seeding	
— County Boundary			

Notes:

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 IFC Workspace 12-12-2019
 ESRI Aerial Imagery, 2016

0 100 200 400 600 Feet



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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TOWAMENSING TWP, CARBON, PA



WATERSHED(S) & DESIGNATION:
 POHOPOCO CREEK / HUNTER CREEK- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend			
○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility Permanent Easement	■ PFO Mosaic (50/50)	■ Riparian Planting	
— Limits of Disturbance	■ PSS	■ Wetland Planting	
— County Boundary	■ Vernal Pool	■ Wetland Seeding	

Notes:

1. See planting schedule on Notes and Details sheets.
2. If alternative restoration arrangements have been agreed upon with the landowner or land manager, the alternative restoration plan will be used.
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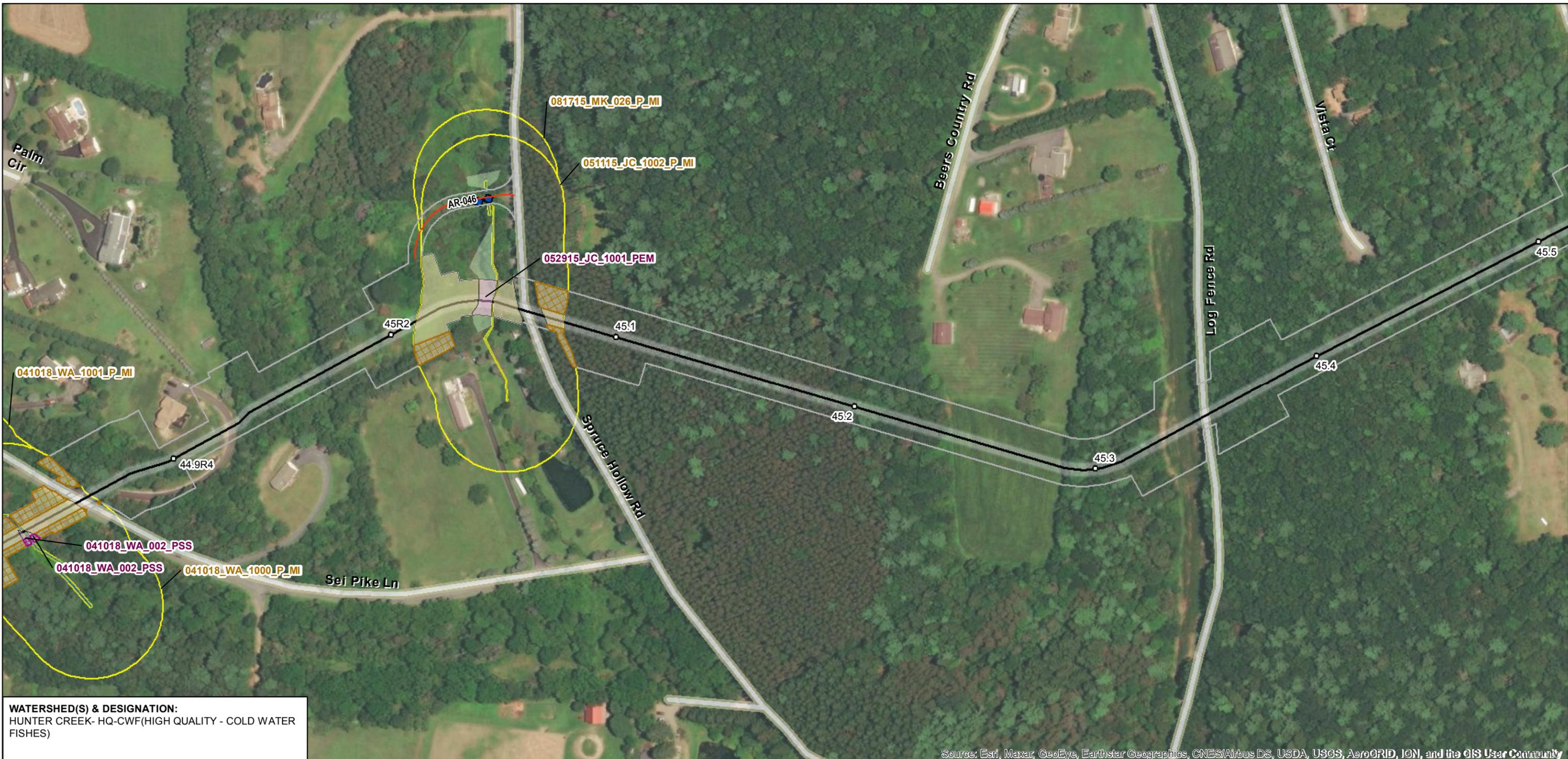
0 100 200 400 600 Feet



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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TOWAMENSING TWP, CARBON, PA



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

WATERSHED(S) & DESIGNATION:
 HUNTER CREEK- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Legend			
○ Milepost	Existing Culvert	PUB	Riparian Seeding
— Pipeline Centerline	Watercourse	POW	Chapter 93 Designated Watershed
— Access Road Centerline	PEM	100-Foot Riparian Buffer	
— Maintained 30-ft ROW	PFO	150-Foot Riparian Buffer	
— Aboveground Facility Permanent Easement	PFO Mosaic (50/50)	Riparian Planting	
— Limits of Disturbance	PSS	Wetland Planting	
— County Boundary	Vernal Pool	Wetland Seeding	

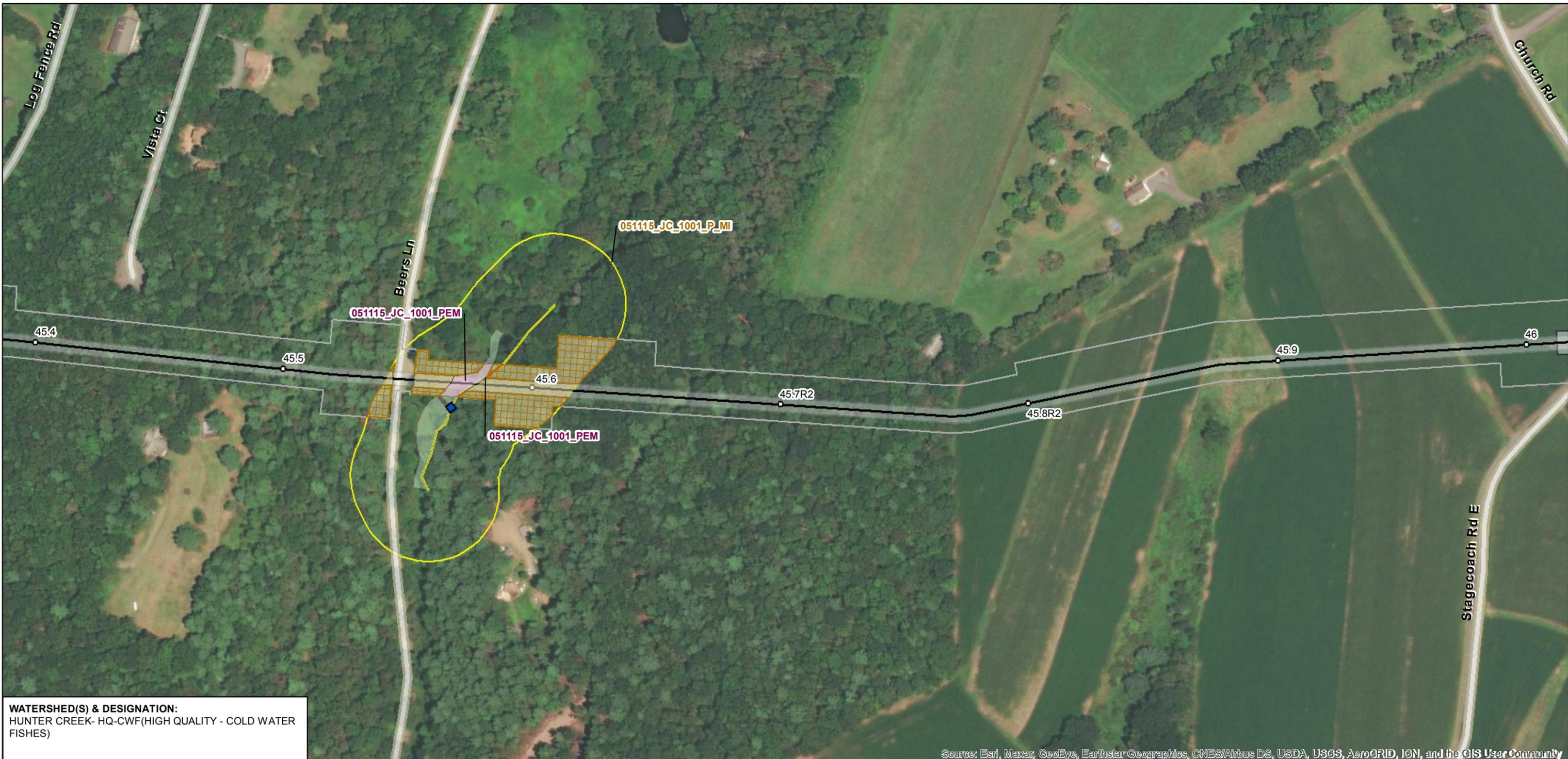
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 ESRI Aerial Imagery, 2016



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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 TOWAMENSING TWP, CARBON, PA



WATERSHED(S) & DESIGNATION:
 HUNTER CREEK- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

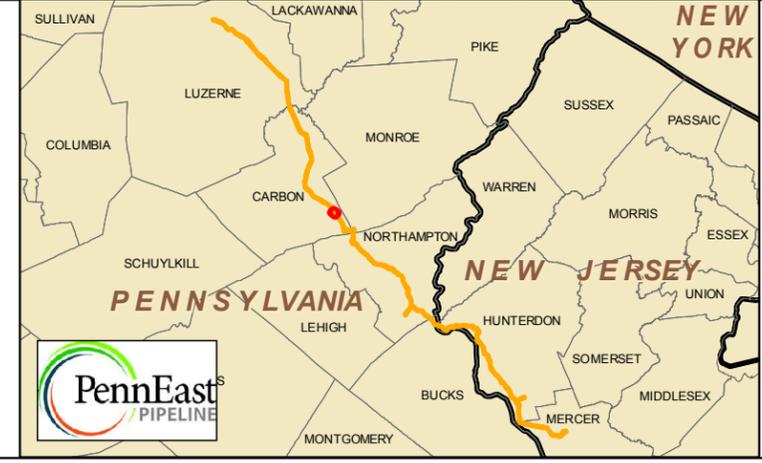
○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility Permanent Easement	■ PFO Mosaic (50/50)	■ Riparian Planting	
— Limits of Disturbance	■ PSS	■ Wetland Planting	
— County Boundary	■ Vernal Pool	■ Wetland Seeding	

Notes:

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 IFC Workspace 12-12-2019
 ESRI Aerial Imagery, 2016

0 100 200 400 600 Feet



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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TOWAMENSING TWP, CARBON, PA



WATERSHED(S) & DESIGNATION:
 BORGER CREEK / HUNTER CREEK- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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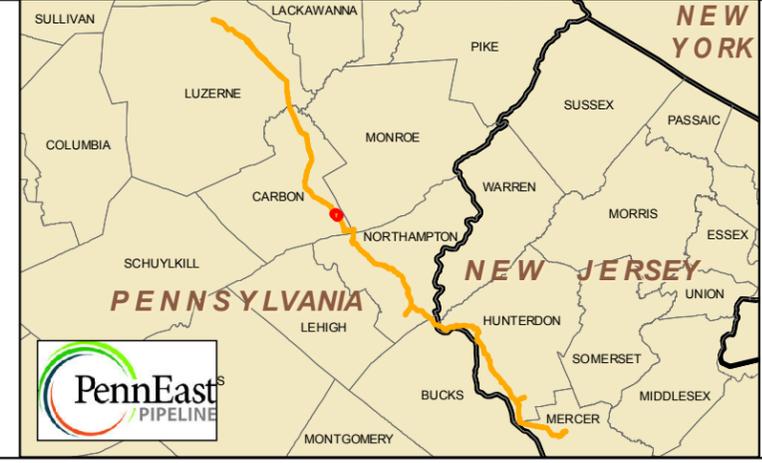
○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility Permanent Easement	■ PFO Mosaic (50/50)	■ Riparian Planting	
— Limits of Disturbance	■ PSS	■ Wetland Planting	
— County Boundary	■ Vernal Pool	■ Wetland Seeding	

Notes:

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 IFC Workspace 12-12-2019
 ESRI Aerial Imagery, 2016

0 100 200 400 600 Feet



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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TOWAMENSING TWP, CARBON, PA



WATERSHED(S) & DESIGNATION:
 BUCKWHA CREEK / AQUASHICOLA CREEK- HQ-
 CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility	■ PFO Mosaic (50/50)	■ Riparian Planting	
— Permanent Easement	■ PSS	■ Wetland Planting	
— Limits of Disturbance	■ Vernal Pool	■ Wetland Seeding	
— County Boundary			

Notes:

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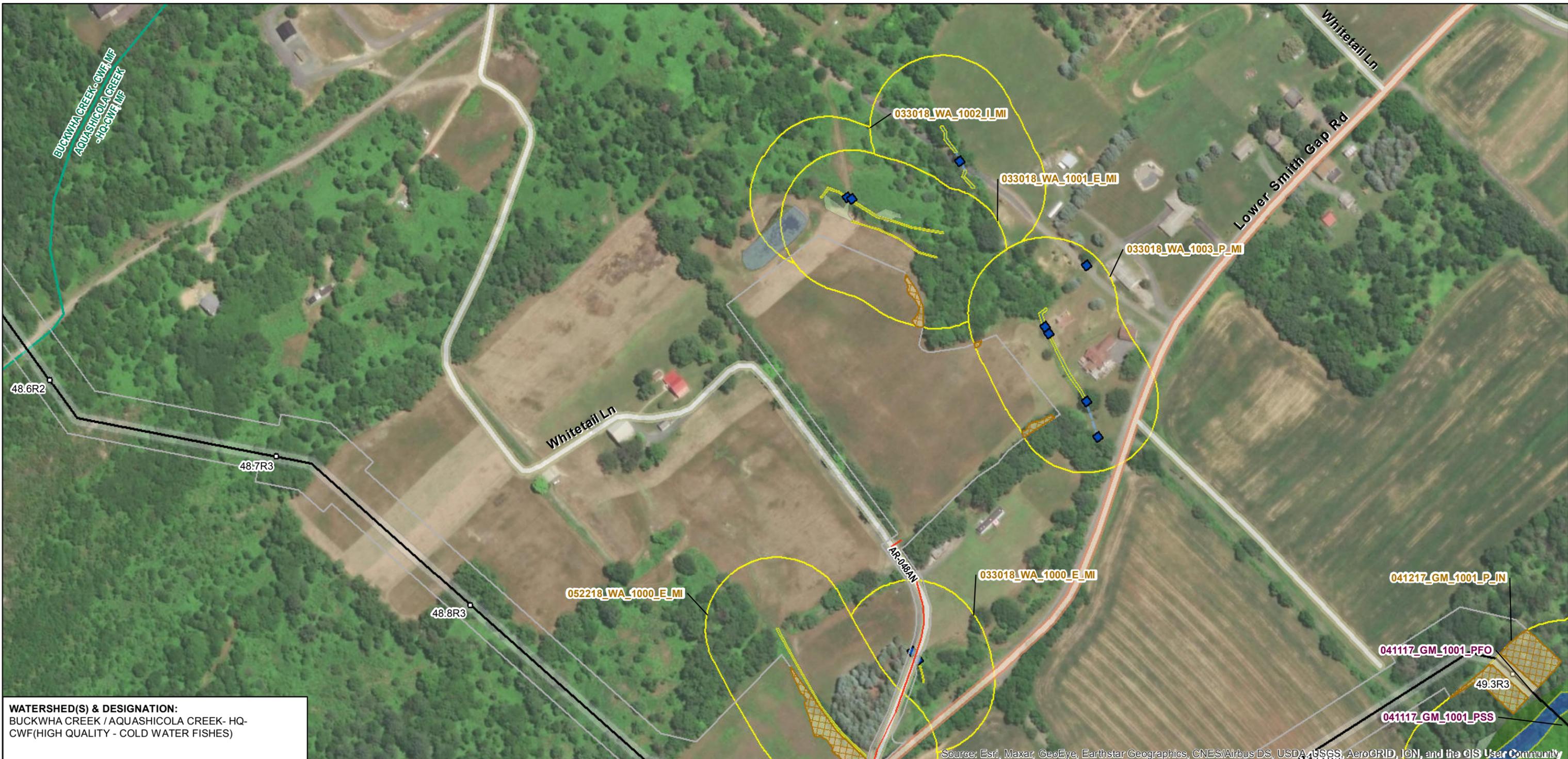
0 100 200 400 600 Feet



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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LOWER TOWAMENSING TWP, CARBON, PA



WATERSHED(S) & DESIGNATION:
 BUCKWHA CREEK / AQUASHICOLA CREEK- HQ-
 CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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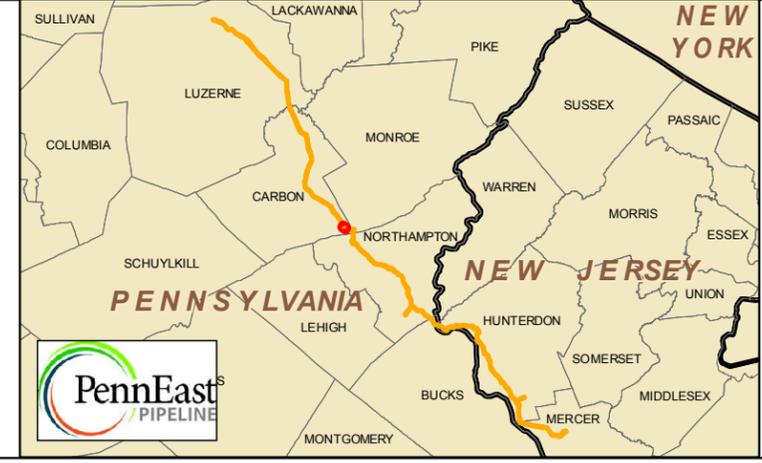
○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility	■ PFO Mosaic (50/50)	■ Riparian Planting	
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— Limits of Disturbance	■ Vernal Pool	■ Wetland Seeding	
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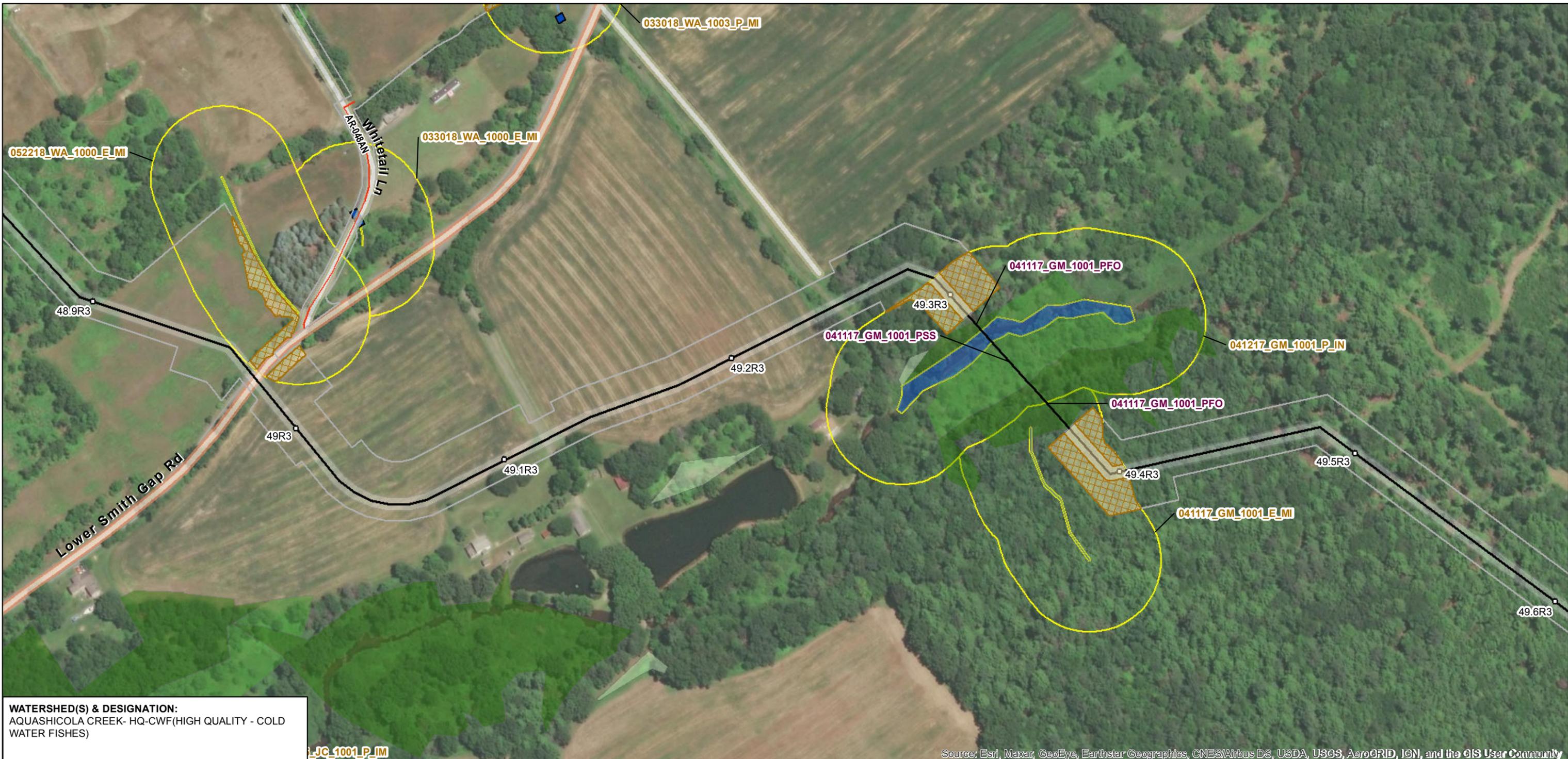
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PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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LOWER TOWAMENSING TWP, CARBON, PA



WATERSHED(S) & DESIGNATION:
 AQUASHICOLA CREEK- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility Permanent Easement	■ PFO Mosaic (50/50)	■ Riparian Planting	
— Limits of Disturbance	■ PSS	■ Wetland Planting	
— County Boundary	■ Vernal Pool	■ Wetland Seeding	

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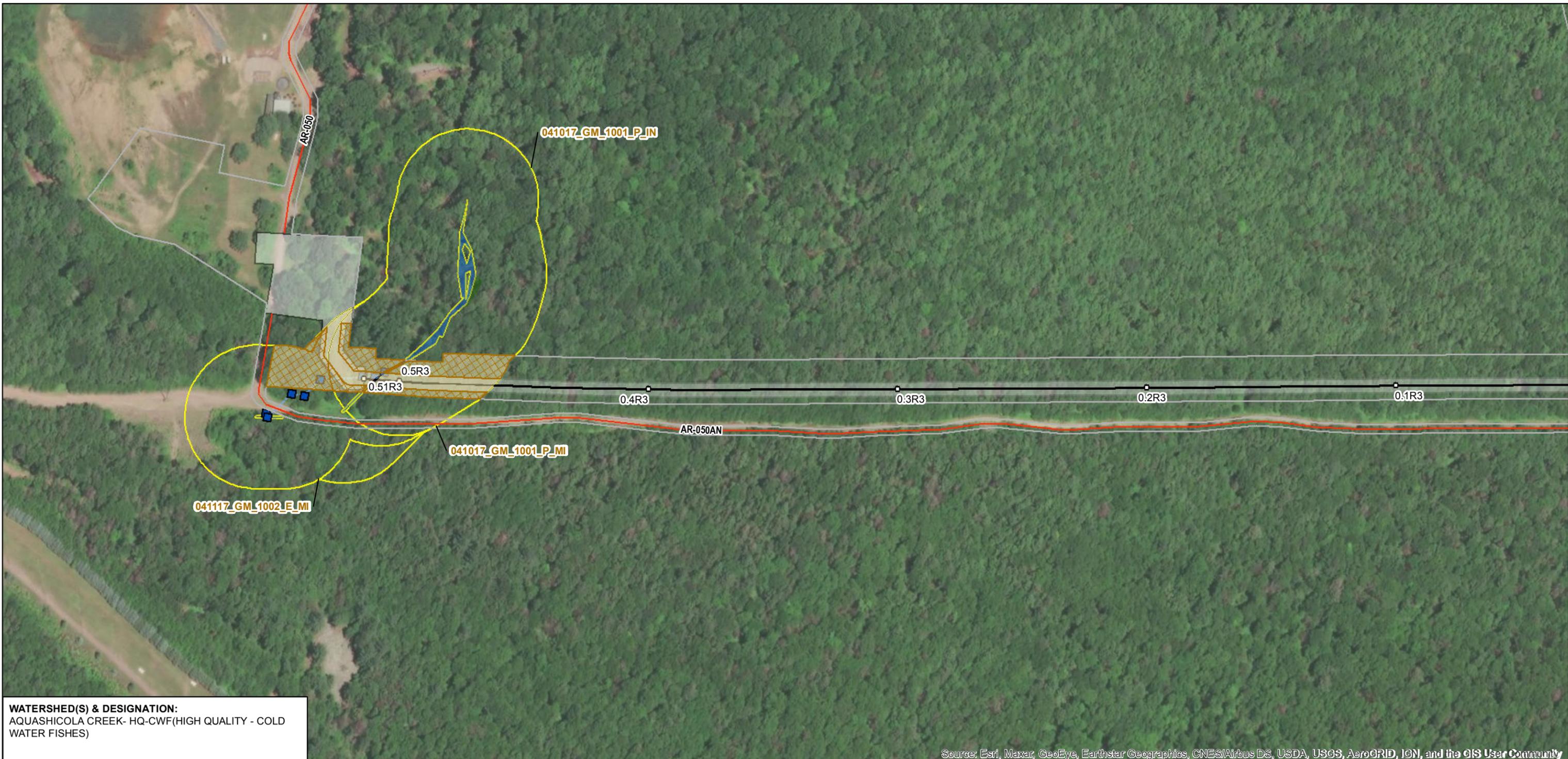
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PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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LOWER TOWAMENSING TWP, CARBON, PA



WATERSHED(S) & DESIGNATION:
 AQUASHICOLA CREEK- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend			
○ Milepost	Existing Culvert	PUB	Riparian Seeding
— Pipeline Centerline	Watercourse	POW	Chapter 93 Designated Watershed
— Access Road Centerline	PEM	100-Foot Riparian Buffer	
— Maintained 30-ft ROW	PFO	150-Foot Riparian Buffer	
— Aboveground Facility Permanent Easement	PFO Mosaic (50/50)	Riparian Planting	
— Limits of Disturbance	PSS	Wetland Planting	
— County Boundary	Vernal Pool	Wetland Seeding	

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 ESRI Aerial Imagery, 2016

0 100 200 400 600 Feet



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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LOWER TOWAMENSING TWP, CARBON, PA



WATERSHED(S) & DESIGNATION:
 AQUASHICOLA CREEK- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

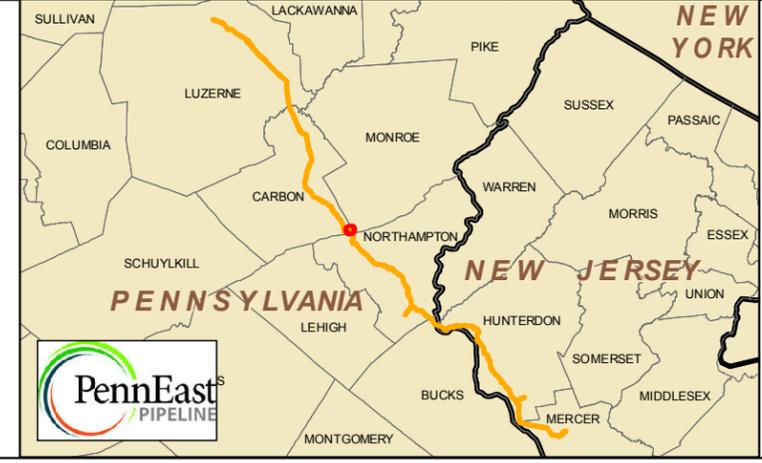
Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
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— Limits of Disturbance	■ PSS	■ Wetland Planting	
— County Boundary	■ Vernal Pool	■ Wetland Seeding	

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 ESRI Aerial Imagery, 2016



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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LOWER TOWAMENSING TWP/ELDRED TWP,
 CARBON/MONROE, PA



WATERSHED(S) & DESIGNATION:
 AQUASHICOLA CREEK- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility Permanent Easement	■ PFO Mosaic (50/50)	■ Riparian Planting	
— Limits of Disturbance	■ PSS	■ Wetland Planting	
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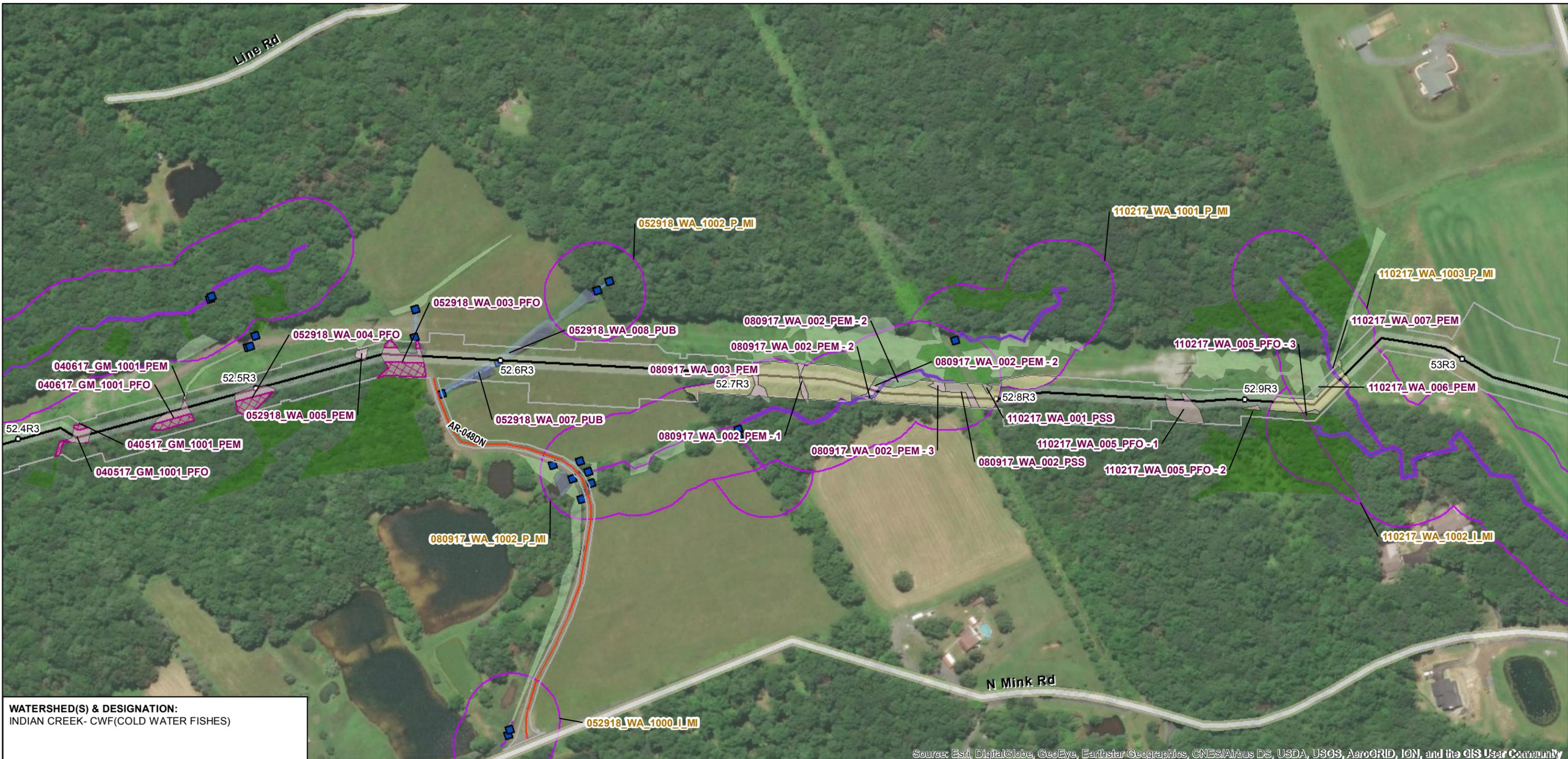
References:
 County Boundaries, Chapter 93 Designated Use and Existing Use Streams, Small Watersheds (PASDA) Restoration of Environmental Features 9-13-2019 IFC Workspace 12-12-2019
 ESRI Aerial Imagery, 2016



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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LOWER TOWAMENSING TWP / ELDRED TWP,
CARBON / MONROE, PA



WATERSHED(S) & DESIGNATION:
 INDIAN CREEK- CWF(COLD WATER FISHES)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

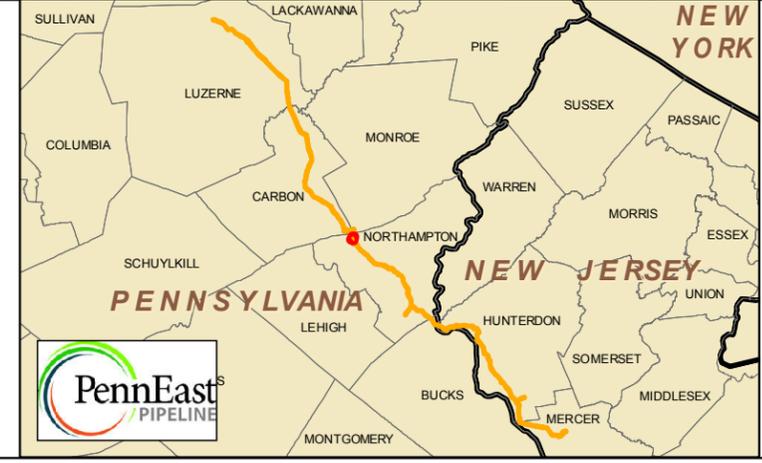
○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility Permanent Easement	■ PFO Mosaic (50/50)	■ Riparian Planting	
— Limits of Disturbance	■ PSS	■ Wetland Planting	
— County Boundary	■ Vernal Pool	■ Wetland Seeding	

Notes:

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 ESRI Aerial Imagery, 2016

0 100 200 400 600 Feet



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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MOORE TWP, NORTHAMPTON, PA



WATERSHED(S) & DESIGNATION:
 INDIAN CREEK- CWF(COLD WATER FISHES)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility Permanent Easement	■ PFO Mosaic (50/50)	■ Riparian Planting	
— Limits of Disturbance	■ PSS	■ Wetland Planting	
— County Boundary	■ Vernal Pool	■ Wetland Seeding	

Notes:

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 IFC Workspace 12-12-2019
 ESRI Aerial Imagery, 2016

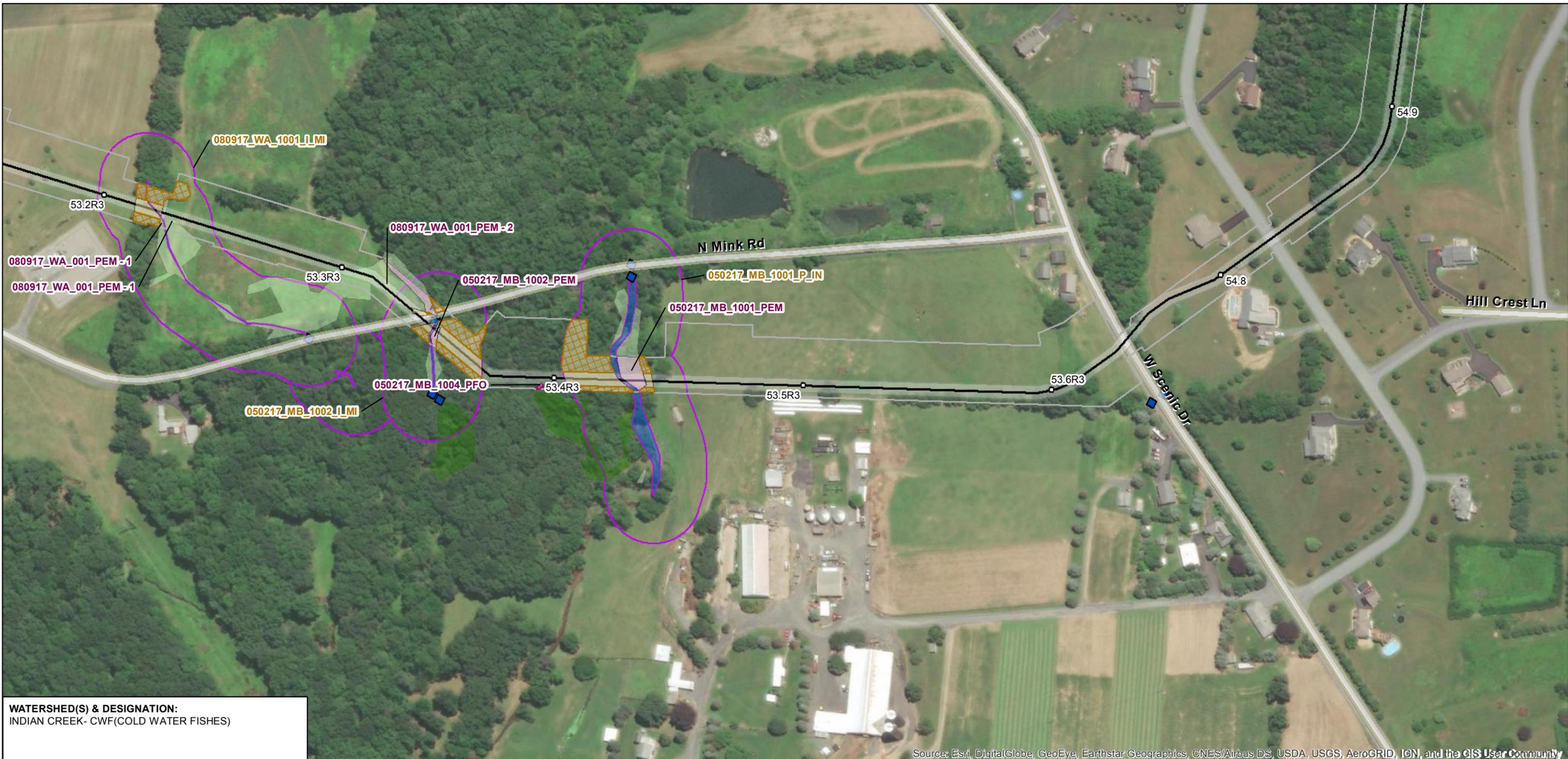
0 100 200 400 600 Feet



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

Date: 6/16/2020 Page 69 of 98

MOORE TWP, NORTHAMPTON, PA



WATERSHED(S) & DESIGNATION:
 INDIAN CREEK- CWF(COLD WATER FISHES)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

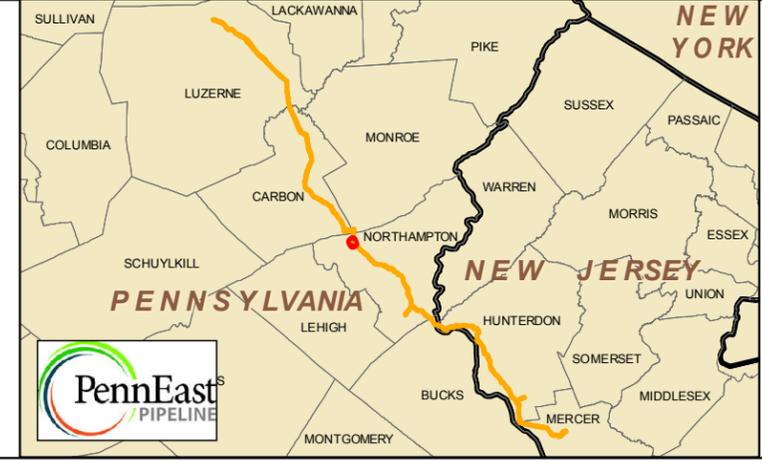
○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility Permanent Easement	■ PFO Mosaic (50/50)	■ Riparian Planting	
— Limits of Disturbance	■ PSS	■ Wetland Planting	
— County Boundary	■ Vernal Pool	■ Wetland Seeding	

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 ESRI Aerial Imagery, 2016

0 100 200 400 600 Feet



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MOORE TWP, NORTHAMPTON, PA



WATERSHED(S) & DESIGNATION:
 HOKENDAUQUA CREEK / INDIAN CREEK- CWF(COLD WATER FISHES)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility Permanent Easement	■ PFO Mosaic (50/50)	■ Riparian Planting	
— Limits of Disturbance	■ PSS	■ Wetland Planting	
— County Boundary	■ Vernal Pool	■ Wetland Seeding	

Notes:

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 IFC Workspace 12-12-2019
 ESRI Aerial Imagery, 2016

0 100 200 400 600 Feet



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MOORE TWP, NORTHAMPTON, PA



WATERSHED(S) & DESIGNATION:
 HOKENDAUQUA CREEK- CWF(COLD WATER FISHES)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility Permanent Easement	■ PFO Mosaic (50/50)	■ Riparian Planting	
— Limits of Disturbance	■ PSS	■ Wetland Planting	
— County Boundary	■ Vernal Pool	■ Wetland Seeding	

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 IFC Workspace 12-12-2019
 ESRI Aerial Imagery, 2016

0 100 200 400 600 Feet



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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MOORE TWP, NORTHAMPTON, PA



WATERSHED(S) & DESIGNATION:
 HOKENDAUQUA CREEK- CWF(COLD WATER FISHES)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
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 IFC Workspace 12-12-2019
 ESRI Aerial Imagery, 2016

0 100 200 400 600 Feet



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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MOORE TWP, NORTHAMPTON, PA



WATERSHED(S) & DESIGNATION:
 MONOCACY CREEK- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
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— Limits of Disturbance	■ PSS	■ Wetland Planting	
— County Boundary	■ Vernal Pool	■ Wetland Seeding	

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PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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MOORE TWP, NORTHAMPTON, PA



WATERSHED(S) & DESIGNATION:
 MONOCACY CREEK- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

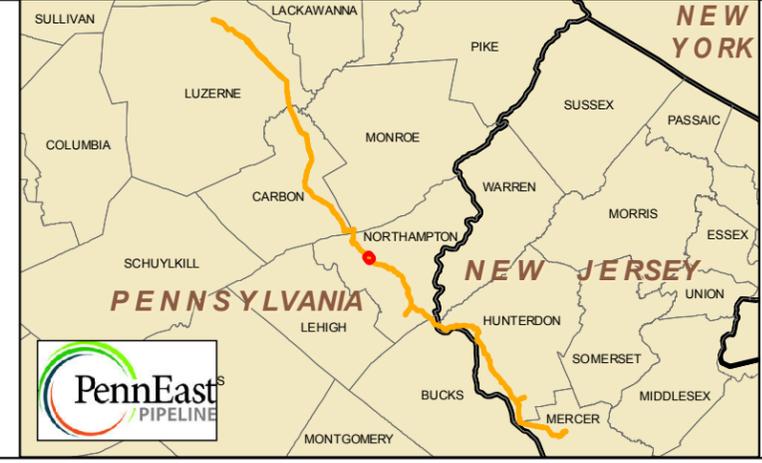
○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
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 ESRI Aerial Imagery, 2016

0 100 200 400 600 Feet



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MOORE TWP, NORTHAMPTON, PA



WATERSHED(S) & DESIGNATION:
 MONOCACY CREEK- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
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0 100 200 400 600 Feet



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MOORE TWP, NORTHAMPTON, PA



WATERSHED(S) & DESIGNATION:
 MONOCACY CREEK- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
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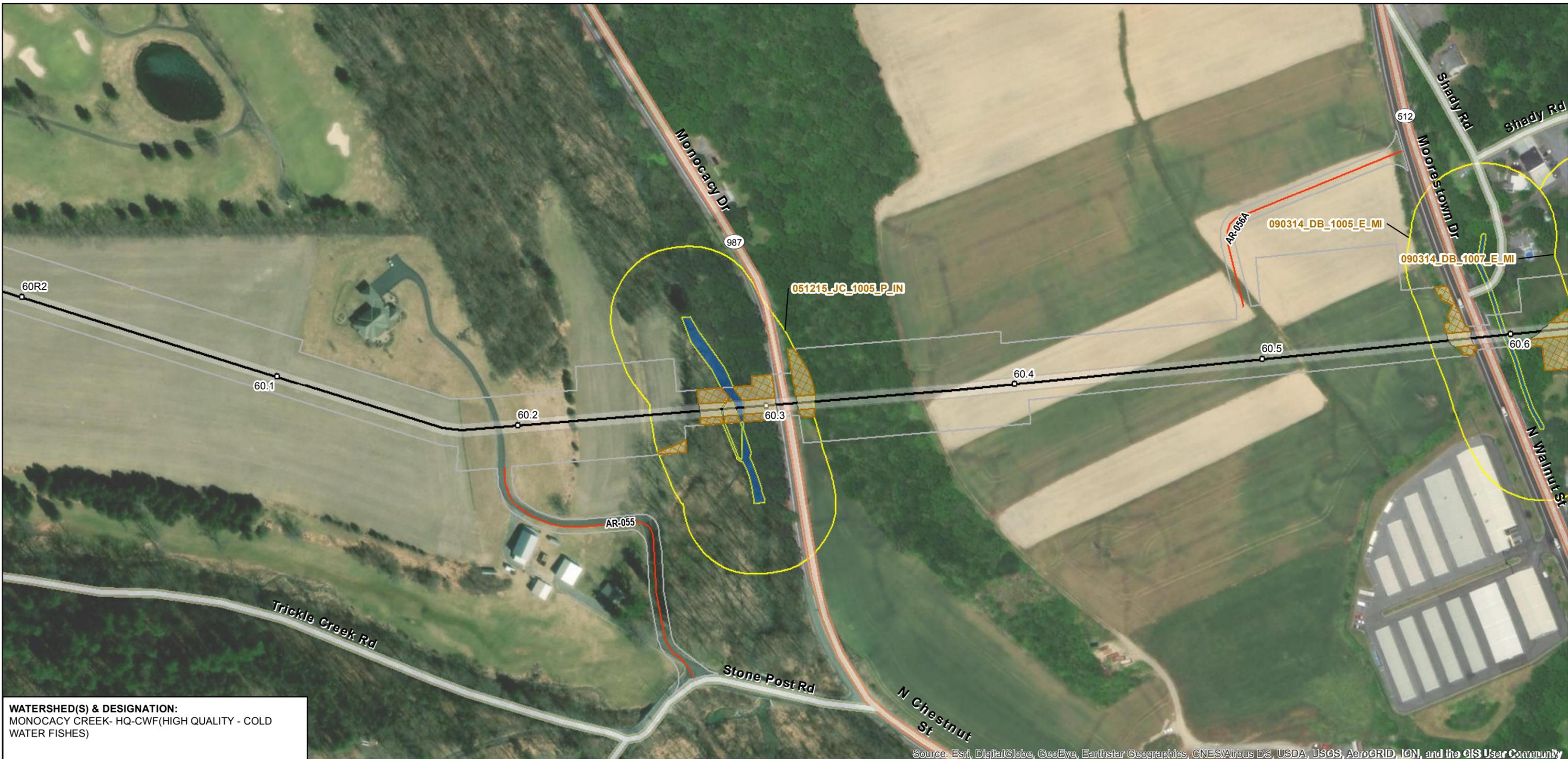
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 IFC Workspace 12-12-2019
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PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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MOORE TWP, NORTHAMPTON, PA



WATERSHED(S) & DESIGNATION:
 MONOCACY CREEK- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
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 ESRI Aerial Imagery, 2016

0 100 200 400 600 Feet



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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MOORE TWP/EAST ALLEN TWP/BATH BORO,
NORTHAMPTON, PA



WATERSHED(S) & DESIGNATION:
 MONOCACY CREEK / EAST BRANCH MONOCACY CREEK-
 HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

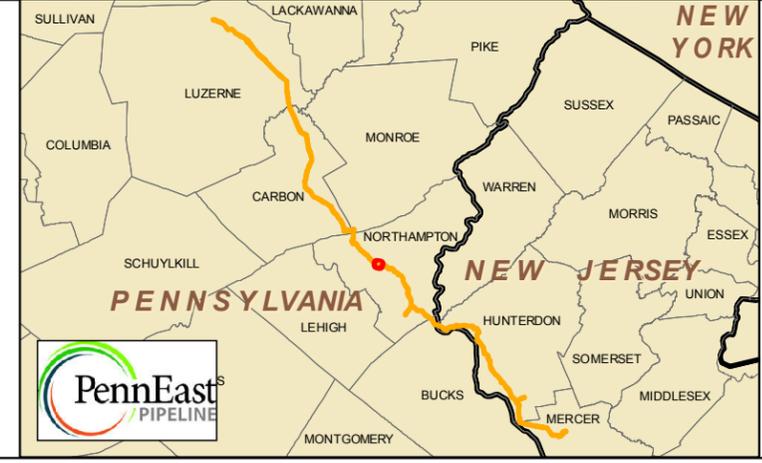
○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
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— County Boundary	■ Vernal Pool	■ Wetland Seeding	

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 IFC Workspace 12-12-2019
 ESRI Aerial Imagery, 2016

0 100 200 400 600 Feet



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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EAST ALLEN TWP/BATH BORO, NORTHAMPTON,
PA



WATERSHED(S) & DESIGNATION:
 MONOCACY CREEK / EAST BRANCH MONOCACY CREEK-
 HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

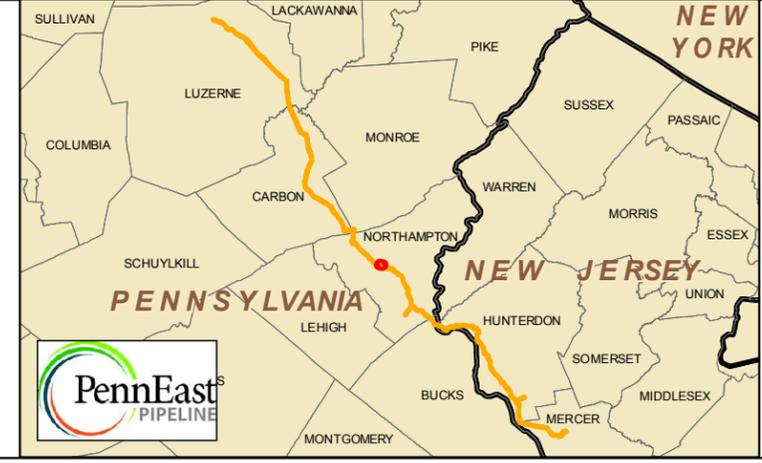
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend			
○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
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— County Boundary	■ Vernal Pool	■ Wetland Seeding	

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 IFC Workspace 12-12-2019
 ESRI Aerial Imagery, 2016



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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EAST ALLEN TWP/BATH BORO/UPPER NAZARETH
 TWP, NORTHAMPTON, PA



WATERSHED(S) & DESIGNATION:
 EAST BRANCH MONOCACY CREEK- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
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— Limits of Disturbance	■ PSS	■ Wetland Planting	
— County Boundary	■ Vernal Pool	■ Wetland Seeding	

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 ESRI Aerial Imagery, 2016



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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UPPER NAZARETH TWP, NORTHAMPTON, PA



WATERSHED(S) & DESIGNATION:
 EAST BRANCH MONOCACY CREEK- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
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0 100 200 400 600 Feet



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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UPPER NAZARETH TWP, NORTHAMPTON, PA



WATERSHED(S) & DESIGNATION:
 EAST BRANCH MONOCACY CREEK- HQ-CWF(HIGH QUALITY - COLD WATER FISHES)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

○ Milepost	■ Existing Culvert	■ PUB	■ Riparian Seeding
— Pipeline Centerline	■ Watercourse	■ POW	■ Chapter 93 Designated Watershed
— Access Road Centerline	■ PEM	■ 100-Foot Riparian Buffer	
— Maintained 30-ft ROW	■ PFO	■ 150-Foot Riparian Buffer	
— Aboveground Facility Permanent Easement	■ PFO Mosaic (50/50)	■ Riparian Planting	
— Limits of Disturbance	■ PSS	■ Wetland Planting	
— County Boundary	■ Vernal Pool	■ Wetland Seeding	

Notes:

1. See planting schedule on Notes and Details sheets.
2. If alternative restoration arrangements have been agreed upon with the landowner or land manager, the alternative restoration plan will be used.
3. Wetland and riparian restoration is not proposed in agricultural, residential, or commercial/industrial areas.
4. Wetland and riparian restoration is not proposed along existing access roads. If any access roads are widened during construction and will be restored after construction, an appropriate seed mix will be used for stabilization in accordance with the approved erosion and sediment control plan.

References:
 County Boundaries, Chapter 93 Designated Use and Existing Use Streams, Small Watersheds (PASDA) Restoration of Environmental Features 9-13-2019 IFC Workspace 12-12-2019
 ESRI Aerial Imagery, 2016

0 100 200 400 600 Feet



PennEast Pennsylvania Wetland and Riparian Reforestation Plan

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UPPER NAZARETH TWP/LOWER NAZARETH TWP,
 NORTHAMPTON, PA

Drawn By & Date/Time: sheril.roth Jun 09, 2020 - 8:40am
 Drawing Location & Name: C:\Work files\UGI-PennEast\RP-01-09 PnEst Rest Notes-Dets.dwg

PROJECT PLANTING NOTES:

- 1) STRAW/MULCH WILL BE USED WITH SEEDING AND PLANTING.
- 2) EROSION CONTROL BLANKETS WILL BE USED. FOR FURTHER EROSION CONTROL MEASURES PLEASE SEE THE EROSION AND SEDIMENT CONTROL PLAN (E&SCP).
- 3) PLANTING AND SEEDING MAY HAPPEN AT DIFFERENT TIMES OF YEAR, OR IN DIFFERENT GROWING SEASONS. IF THERE WILL BE A DELAY IN PLANTING, A COVER CROP WILL BE INSTALLED.
 - A. COVER CROP TO BE PLANTED AT 30 LB PER ACRE
 - B. DRY SITES - GRAIN OATS: (JAN 1-AUG 1); OR GRAIN RYE: (AUG 1-JAN 1)
 - C. MOIST SITES - GRAIN RYE YEAR-ROUND
- 4) SEEDING
 - A. ALL DISTURBED AREAS (EXCEPT EXISTING GRAVEL ACCESS ROADS) WILL BE SEEDED.
 - I. IN RIPARIAN AREAS WHERE SLOPE EXCEEDS 10%, THE STANDARD UPLAND ROW SEED MIX WILL BE APPLIED. SEE EROSION AND SEDIMENT CONTROL PLAN (E&SCP) FOR DETAILS.
 - B. ERNST FACW MEADOW MIX (ERNMX- 122) WAS DESIGNATED FOR AREAS OF THE WORKSPACE WITHIN A WETLAND, LIMITS OF WHICH ARE SHOWN ON THE E&SCP DRAWINGS.
 - I. THIS MIX REQUIRES AN ADDITIONAL COVER CROP TO BE PLANTED (SEE ABOVE #3).
 - II. IF SEEDING IN FALL OR WINTER AN ALTERNATIVE MIX WITH WINTER WHEAT INSTEAD OF GRAIN OATS SHOULD BE USED.
 - III. AN ALTERNATIVE SEED MIX MAY BE REQUESTED BY THE LANDOWNER(S).
 - IV. AN ALTERNATIVE CONSERVATION WETLAND SEED MIX THAT CONTAINS SIMILAR SPECIES IS ACCEPTABLE. IF AN ALTERNATIVE SEED MIX IS USED, FOLLOW MANUFACTURER'S SEED RATE RECOMMENDATIONS.
 - C. ERNST RIPARIAN BUFFER MIX (ERNMX-178) WAS DESIGNATED FOR AREAS OF WORKSPACE WITHIN A RIPARIAN BUFFER.
 - I. THIS MIX REQUIRES AN ADDITIONAL COVER CROP TO BE PLANTED (SEE ABOVE #3).
 - II. IF SEEDING IN FALL OR WINTER AN ALTERNATIVE MIX WITH WINTER WHEAT INSTEAD OF GRAIN OATS SHOULD BE USED.

D. ERNST SEED MIX LINKS:

- I. ERNST FACW MEADOW MIX (ERNMX-122) - [HTTPS://WWW.ERNSTSEED.COM/PRODUCT/PA-PIEDMONT-PROVINCE-FACW-MIX/](https://www.ernstseed.com/product/pa-piedmont-province-facw-mix/)
 - II. ERNST RIPARIAN BUFFER MIX (ERNMX-178) - [HTTPS://WWW.ERNSTSEED.COM/PRODUCT/RIPARIAN-BUFFER-MIX/](https://www.ernstseed.com/product/riparian-buffer-mix/)
- 5) SHRUB PLANTINGS
 - A. PLANTINGS WILL OVERLAP SEEDED AREAS WITHIN THE WORKSPACE.
 - B. SHRUBS WILL BE PLANTED AT A SPACING OF 10-FT. ON CENTER.
 - I. EXACT PLANTING LOCATIONS AND SPECIES DISTRIBUTION WILL BE AT THE DISCRETION OF THE FORESTRY CONTRACTOR, AND DEPENDENT ON STOCK AVAILABILITY AT THE TIME OF PLANTING.
 - C. GUARANTEE 85% SURVIVAL AT THE END OF THE FIFTH GROWING SEASON.
 - 6) TREE PLANTINGS
 - A. PLANTINGS WILL OVERLAP SEEDED AREAS WITHIN THE WORKSPACE.
 - B. TREES WILL BE PLANTED IN TEMPORARY WORKSPACE IN NON-ROCKY AREAS AT A SPACING OF 10-FT. ON CENTER.
 - I. EXACT PLANTING LOCATIONS AND SPECIES DISTRIBUTION WILL BE AT THE DISCRETION OF THE FORESTRY CONTRACTOR, AND DEPENDENT ON STOCK AVAILABILITY AT THE TIME OF PLANTING.
 - C. PROTECTION AND SURVIVAL MEASURES WILL INCLUDE:
 - I. 24" COCO MATS,
 - II. SPIRAL TREE WRAPS WILL BE INSTALLED ON ALL TREES AND REMOVED IN 2-YEARS TIME.
 - D. GUARANTEE 85% SURVIVAL AT THE END OF THE FIFTH GROWING SEASON.

GENERAL PLANTING NOTES:

1. PLANT MATERIAL SHALL BE FURNISHED AND INSTALLED AS INDICATED: INCLUDING ALL LABOR MATERIALS, PLANTS, EQUIPMENT, INCIDENTALS AND CLEAN UP.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLANTING AT CORRECT GRADES AND ALIGNMENT. ALL PLANT MATERIAL SHALL BEAR THE SAME RELATION TO FINISHED GRADE AS IT DID TO EXISTING GRADE.
3. PLANTS SHALL BE TYPICAL OF THEIR SPECIES AND VARIETY; HAVE NORMAL GROWTH HABITS; WELL-DEVELOPED BRANCHES, DENSELY FOLIATED VIGOROUS ROOT SYSTEMS AND BE FREE FROM DEFECTS AND INJURIES.
4. CONTRACTOR SHALL REPORT ANY SOIL OR DRAINAGE CONDITIONS CONSIDERED DETRIMENTAL TO THE GROWTH OF PLANT MATERIAL.
5. INSOFAR AS IT IS PRACTICAL, PLANT MATERIAL SHALL BE PLANTED ON THE DAY OF DELIVERY. IN THE EVENT THIS IS NOT POSSIBLE, THE CONTRACTOR SHALL PROTECT SHRUBS NOT PLANTED FROM DRYING. PLANTS SHALL NOT REMAIN UNPLANTED FOR LONGER THAN A THREE (3) DAY PERIOD AFTER DELIVERY.
6. PLANTING OPERATIONS SHALL BE PERFORMED DURING PERIODS WITHIN THE PLANTING SEASON WHEN WATER AND SOIL CONDITIONS ARE SUITABLE AND IN ACCORDANCE WITH ACCEPTED LOCAL PRACTICE. PLANTING SEASONS ARE DEFINED AS FEBRUARY 15 THROUGH MAY 1 AND SEPTEMBER 1 THROUGH OCTOBER 15. PLANTING IS ACCEPTABLE DURING OTHER MONTHS IF WEATHER PERMITS, THE GROUND IS NOT FROZEN AND SUPPLEMENTAL WATERING IS PROVIDED IN THE SUMMER.
7. LANDSCAPE CONTRACTOR SHALL CONFIRM LOCATION OF ALL UNDERGROUND UTILITIES, PIPES AND STRUCTURES PRIOR TO ANY EXCAVATION. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES FOR FIELD LOCATION OF UNDERGROUND UTILITY LINES PRIOR TO ANY EXCAVATION.



NAD 1883 PA83-NF

TITLE: PENNEAST PIPELINE PROJECT WETLAND AND RIPARIAN REFORESTATION PLAN REFORESTATION NOTES AND DETAILS									
1	06/08/2020	REVISED PER CLIENT COMMENTS	SR	SB	SB	HB	LOC: BUCKS, CARBON, LUZERNE, MONROE AND NORTHAMPTON COUNTIES		REV.: 1
0	10/14/2019	ISSUED FOR CLIENT REVIEW	SR	SB	SB	HB	CKD BY: SB	ENG:	DATE:
NO.	DATE	REVISIONS	BY	CHK	APP	APP	DRN BY: SR	SCALE: NOT TO SCALE	DWG NO.:
									SHEET 1 OF 9

PLANTING SCHEDULE

SEED MIXES			
SCIENTIFIC NAME	COMMON NAME	PERCENT OF MIX	POUNDS PER ACRE
Ernst FACW MEADOW MIX		Ernst Item Number: ERNMX-122	20 (with 30 lbs/acre of cover crop)
<i>Carex vulpinoidea</i> , PA Ecotype	Fox Sedge, PA Ecotype	28.0%	5.60
<i>Elymus virginicus</i> , PA Ecotype	Virginia Wildrye, PA Ecotype	20.0%	4.00
<i>Carex lupulina</i> , PA Ecotype	Hop Sedge, PA Ecotype	15.0%	3.00
<i>Carex scoparia</i> , PA Ecotype	Blunt Broom Sedge, PA Ecotype	14.0%	2.80
<i>Carex intumescens</i> , PA Ecotype	Bladder (Star) Sedge, PA Ecotype	9.0%	1.80
<i>Asclepias incarnata</i> , PA Ecotype	Swamp Milkweed, PA Ecotype	3.0%	0.60
<i>Heliopsis helianthoides</i> , PA Ecotype	Oxeye Sunflower, PA Ecotype	3.0%	0.60
<i>Juncus effusus</i>	Soft Rush	3.0%	0.60
<i>Eupatorium perfoliatum</i> , PA Ecotype	Boneset, PA Ecotype	1.5%	0.30
<i>Iris versicolor</i> , PA Ecotype	Blueflag, PA Ecotype	1.5%	0.30
<i>Alisma subcordatum</i> , PA Ecotype	Mud Plantain (Water Plantain), PA Ecotype	1.0%	0.20
SCIENTIFIC NAME	COMMON NAME	PERCENT OF MIX	POUNDS PER ACRE
Ernst RIPARIAN BUFFER MIX		Ernst Item Number: ERNMX-178	20 (with 30 lbs/acre of cover crop)
<i>Panicum clandestinum</i> , 'Tioga'	Deertongue, 'Tioga'	30.0%	6.0
<i>Elymus riparius</i> , PA Ecotype	Riverbank Wildrye, PA Ecotype	16.5%	3.3
<i>Sorghastrum nutans</i> , NY4 Ecotype	Indiangrass, NY4 Ecotype	16.0%	3.2
<i>Andropogon gerardii</i> , 'Niagara'	Big Bluestem, 'Niagara'	10.0%	2.0
<i>Panicum virgatum</i> , 'Carthage', NC Ecotype	Switchgrass, 'Carthage', NC Ecotype	7.0%	1.4
<i>Chamaecrista fasciculata</i> , PA Ecotype	Partridge Pea, PA Ecotype	4.0%	0.8
<i>Rudbeckia hirta</i> , Coastal Plain NC Ecotype	Blackeyed Susan, Coastal Plain NC Ecotype	3.0%	0.6
<i>Asclepias incarnata</i> , PA Ecotype	Swamp Milkweed, PA Ecotype	2.5%	0.5
<i>Heliopsis helianthoides</i> , PA Ecotype	Oxeye Sunflower, PA Ecotype	2.5%	0.5
<i>Aster pilosus</i> , PA Ecotype	Heath Aster, PA Ecotype	2.0%	0.4
<i>Juncus effusus</i>	Soft Rush	2.0%	0.4
<i>Juncus tenuis</i> , PA Ecotype	Path Rush, PA Ecotype	2.0%	0.4
<i>Eupatorium perfoliatum</i> , PA Ecotype	Boneset, PA Ecotype	1.5%	0.3
<i>Vernonia noveboracensis</i> , PA Ecotype	New York Ironweed, PA Ecotype	1.0%	0.2

GENERAL PLANTING NOTES:

1. WETLAND SEEDING SHALL BE COMPLETED AFTER PIPELINE INSTALLATION AND COMPLETION OF FINAL GRADING.
2. RIPARIAN PLANTING SHALL BE COMPLETED AFTER CHANNEL CROSSING IS COMPLETED. NO TREES SHALL BE PLANTED WITHIN 15 FEET OF THE CENTERLINE OF ANY PIPELINE (EXISTING OR PROPOSED). NO SHRUBS SHALL BE PLANTED WITHIN 5 FEET OF THE CENTERLINE OF ANY PIPELINE (EXISTING OR PROPOSED).
3. LOCATION OF PLANTINGS AND SEEDING IS APPROXIMATE. THE FINAL LOCATION OF ALL PLANTING AND SEEDING SHALL BE DETERMINED IN THE FIELD BY PENNEAST OR THEIR REPRESENTATIVE.
4. AN ATTEMPT SHALL BE MADE TO INSTALL PLANT MATERIALS ON THE DAY OF DELIVERY. THE CONTRACTOR SHALL PROTECT THE PLANTS BY PLACING THEM IN THE SHADE AND WATERING UNTIL THEY ARE INSTALLED. ALL PLANTS SHALL BE INSTALLED WITHIN 3 DAYS OF DELIVERY.

PLANTINGS		
PALUSTRINE SCRUB-SHRUB (PSS) PLANTING MIX		
SCIENTIFIC NAME	COMMON NAME	SIZE
Shrub Species		
<i>Sambucus spp.</i>	Elderberry	1-2 gallon
<i>Alnus serrulata</i>	Smooth alder	1-2 gallon
<i>Cephalanthus occidentalis</i>	Buttonbush	1-2 gallon
<i>Cornus amomum</i>	Silky dogwood	1-2 gallon
<i>Viburnum dentatum</i>	Arrowwood Viburnum	1-2 gallon
PALUSTRINE FORESTED (PFO) PLANTING MIX		
SCIENTIFIC NAME	COMMON NAME	SIZE
Shrub Species		
<i>Cephalanthus occidentalis</i>	Buttonbush	1-2 gallon
<i>Cornus amomum</i>	Silky dogwood	1-2 gallon
<i>Ilex verticillata</i> (L.) A. Gray	Winterberry	1-2 gallon
<i>Ilex glabra</i>	Inkberry	1-2 gallon
Tree Species		
<i>Acer rubrum</i> *	Red Maple*	1-2 gallon
<i>Quercus bicolor</i> *	Swamp White Oak*	1-2 gallon
<i>Abies balsamea</i> **	Balsam Fir**	1-2 gallon
<i>Pinus strobus</i> **	White Pine**	1-2 gallon
<i>Picea Mariana</i> **	Black Spruce**	1-2 gallon
<i>Tsuga canadensis</i> **	Tsuga canadensis**	1-2 gallon
<i>Betula alleghaniensis</i>	Yellow Birch	1-2 gallon
<i>Nyssa sylvatica</i>	Black Gum	1-2 gallon
RIPARIAN PLANTING MIX		
SCIENTIFIC NAME	COMMON NAME	SIZE
Shrub Species		
<i>Viburnum dentatum</i>	Arrowwood Viburnum	1-2 gallon
<i>Sambucus spp.</i>	Elderberry	1-2 gallon
<i>Physocarpus opulifolius</i>	Ninebark	1-2 gallon
<i>Prunus virginiana</i> L.	Red choke cherry	1-2 gallon
<i>Ilex verticillata</i> (L.) A. Gray	Winterberry	1-2 gallon
Tree Species		
<i>Quercus rubra</i> *	Red Oak*	1-2 gallon
<i>Acer saccharum</i> *	Sugar Maple*	1-2 gallon
<i>Quercus palustris</i> *	Pin Oak*	1-2 gallon
<i>Prunus serotina</i> *	Black Cherry*	1-2 gallon
<i>Abies balsamea</i> **	Balsam Fir**	1-2 gallon
<i>Pinus strobus</i> **	White Pine**	1-2 gallon
<i>Picea Mariana</i> **	Black Spruce**	1-2 gallon
<i>Tsuga canadensis</i> **	Tsuga canadensis**	1-2 gallon
<i>Betula alleghaniensis</i>	Yellow Birch	1-2 gallon
*Not to be used between MP 27.1R2-32.1R2		
**Only to be used between MP 27.1R2-32.1R2		

Drawn By & Date/Time: sheril.roth Jun 09, 2020 - 8:40am
 Drawing Location & Name: C:\Work files\UGI-PennEast\RP-01-09 PnEst Rest Notes-Dets.dwg



PennEast Pipeline Company, LLC

NAD 1883 PA83-NF

TITLE: PENNEAST PIPELINE PROJECT WETLAND AND RIPARIAN REFORESTATION PLAN REFORESTATION NOTES AND DETAILS										
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0	10/14/2019	ISSUED FOR CLIENT REVIEW	SR	SB	SB	HB	CKD BY: SB	ENG:	DATE:	W.O.:
NO.	DATE	REVISIONS	BY	CHK	APP	APP	DRN BY: SR	SCALE: NOT TO SCALE	DWG NO.:	SHEET 2 OF 9

Drawn By & Date/Time: sheril.roth Jun 09, 2020 - 8:40am
Drawing Location & Name: C:_work_files\UGI-PennEast\RP-01-09 PnEst Rest Notes-Dets.dwg

RESOURCE ID	MP	COUNTY	WATERSHED DESIGNATED / EXISTING USE	WETLAND RESTORATION			RIPARIAN RESTORATION	
				FACW MEADOW SEED MIX	ACREAGE OF SHRUB PLANTINGS IN PSS WETLANDS	ACREAGE OF TREE AND SHRUB PLANTINGS IN PFO WETLANDS	ACREAGE OF RIPARIAN BUFFER SEED MIX	ACREAGE OF TREE AND SHRUB PLANTINGS IN RIPARIAN BUFFERS
PennEast Mainline Pipeline								
050715_JC_1001_PSS	0.1	Luzerne	CWF, MF	0.890	0.517	-	-	-
050715_JC_1001b_PEM	0.1	Luzerne	CWF, MF	0.000	-	-	-	-
050715_JC_1001a_PEM	0.1	Luzerne	CWF, MF	0.023	-	-	-	-
050715_JC_1002_I_MI	0.2R3	Luzerne	CWF, MF	-	-	-	0.061	0.029
092414_GO_1001_P_IM	0.6	Luzerne	CWF, MF	-	-	-	0.393	0.277
032818_WA_1000_P_IN	1.4	Luzerne	CWF, MF	-	-	-	0.388	0.230
032818_WA_001_PFO	1.4	Luzerne	CWF, MF	0.089	-	0.059	-	-
050416_DB_1001_I_MI	2.1	Luzerne	CWF, MF	-	-	-	0.383	0.184
050416_DB_1001_PFO	2.1	Luzerne	CWF, MF	0.089	-	0.055	-	-
011815_JC_1000_I_MI	2.6	Luzerne	CWF, MF	-	-	-	0.444	0.264
011815_JC_1002_I_MI	3.1	Luzerne	CWF, MF	-	-	-	0.069	0.033
011815_JC_1001_P_MI	3.1	Luzerne	CWF, MF	-	-	-	0.248	0.154
011815_JC_002_PFO	3.1	Luzerne	CWF, MF	0.241	-	0.009	-	-
011815_JC_002_PFO	3.1	Luzerne	CWF, MF	0.241	-	0.009	-	-
101717_AB_1001_I_MI	3.5	Luzerne	CWF, MF	-	-	-	0.489	0.350
020916_BT_1001_I_MI	4.3R2	Luzerne	CWF, MF	-	-	-	0.708	0.416
020916_BT_1003_P_MI	4.3R2	Luzerne	CWF, MF	-	-	-	0.368	0.204
020916_BT_1008_I_MI	4.8R3	Luzerne	CWF, MF	-	-	-	0.069	0.041
020916_BT_1004_I_MI	5R3	Luzerne	CWF, MF	-	-	-	0.810	0.516
020916_BT_1005_I_MI	5R3	Luzerne	CWF, MF	-	-	-	0.000	0.000
020916_BT_1006_I_MI	5R3	Luzerne	CWF, MF	-	-	-	0.093	0.063
020916_BT_1007_I_MI	5.1	Luzerne	CWF, MF	-	-	-	0.577	0.404
092314_GO_1003_POND_IM	5.6	Luzerne	CWF, MF	-	-	-	0.115	0.077
092314_GO_1001_I_MI	6	Luzerne	CWF, MF	-	-	-	0.443	-
092314_GO_001_PSS	6	Luzerne	CWF, MF	0.013	0.005	-	-	-
092414_GO_1002_I_IN	6.1	Luzerne	CWF, MF	-	-	-	0.440	0.298
092414_GO_1003_P_IM	6.2R2	Luzerne	CWF, MF	-	-	-	0.078	0.068
102315_WA_1001_P_MA	7.1	Luzerne	WWF, MF	-	-	-	4.429	0.103
071416_GM_1002_E_IN	9.7R2	Luzerne	CWF, MF	-	-	-	0.040	0.018
071416_GM_1001_P_IN	9.7R2	Luzerne	CWF, MF	-	-	-	0.441	0.341
050416_DB_1002_I_MI	10.1R2	Luzerne	CWF, MF	-	-	-	0.984	0.730
110514_JC_1002_P_IM	10.8R2	Luzerne	CWF, MF	-	-	-	0.377	0.237
110514_JC_1003_E_MI	10.9R2	Luzerne	CWF, MF	-	-	-	0.105	0.067
121614_JC_1000_P_MI	11.5R2	Luzerne	CWF, MF	-	-	-	0.495	0.333
121614_JC_1002_I_MI	11.6R2	Luzerne	CWF, MF	-	-	-	0.027	0.027
121614_JC_1001_E_MI	11.6R2	Luzerne	CWF, MF	-	-	-	0.521	0.332
072219_MU_1000_PEM	12.1R3	Luzerne	CWF, MF	0.199	-	-	-	-
072219_MU_1000_I_MI	12.2R3	Luzerne	CWF, MF	-	-	-	0.019	0.019
072219_MU_1002_PEM	12.2R3	Luzerne	CWF, MF	0.020	-	-	-	-
072219_MU_1001_PFO	12.2R3	Luzerne	CWF, MF	0.086	-	0.034	-	-
121514_JC_1001_E_MI	12.4R2	Luzerne	CWF, MF	-	-	-	0.405	0.284
121814_JC_1010_P_MI	13	Luzerne	CWF, MF	-	-	-	0.390	0.265
121814_JC_1011_P_MI	13.1	Luzerne	CWF, MF	-	-	-	0.315	0.198
121814_JC_1013_E_MI	13.2	Luzerne	CWF, MF	-	-	-	0.059	-
081215_MK_017_P_IM	13.2	Luzerne	CWF, MF	-	-	-	0.060	0.060
060618_WA_002_PEM	13.2	Luzerne	CWF, MF	0.193	-	-	-	-
121814_JC_1008_P_MI	13.3	Luzerne	CWF, MF	-	-	-	0.213	0.131

RESOURCE ID	MP	COUNTY	WATERSHED DESIGNATED / EXISTING USE	WETLAND RESTORATION			RIPARIAN RESTORATION	
				FACW MEADOW SEED MIX	ACREAGE OF SHRUB PLANTINGS IN PSS WETLANDS	ACREAGE OF TREE AND SHRUB PLANTINGS IN PFO WETLANDS	ACREAGE OF RIPARIAN BUFFER SEED MIX	ACREAGE OF TREE AND SHRUB PLANTINGS IN RIPARIAN BUFFERS
121814_JC_1009_E_MI	13.3	Luzerne	CWF, MF	-	-	-	0.128	0.126
121814_JC_1007_E_MI	13.3	Luzerne	CWF, MF	-	-	-	0.148	0.089
121814_JC_1006_I_MI	13.6	Luzerne	CWF, MF	-	-	-	0.035	0.022
121814_JC_1005_P_MI	13.6	Luzerne	CWF, MF	-	-	-	0.391	0.233
121814_JC_1004_I_MI	13.7	Luzerne	CWF, MF	-	-	-	0.362	0.217
121814_JC_001_PEM	13.7	Luzerne	CWF, MF	0.015	-	-	-	-
121814_JC_1003_I_MI	13.8	Luzerne	CWF, MF	-	-	-	0.379	0.209
121814_JC_1002_P_MI	13.9	Luzerne	CWF, MF	-	-	-	0.460	0.289
121814_JC_1001_P_MI	13.9	Luzerne	CWF, MF	-	-	-	0.642	0.394
121814_JC_1000_I_MI	14	Luzerne	CWF, MF	-	-	-	0.406	0.225
111014_JC_1001_E_MI	14.1	Luzerne	CWF, MF	-	-	-	0.441	0.244
111014_JC_002_PFO	14.1	Luzerne	CWF, MF	0.045	-	0.043	-	-
041017_NJ_1002_I_MI	14.7	Luzerne	HQ-CWF, MF	-	-	-	0.873	0.594
042417_GM_1001_PFO	14.7	Luzerne	HQ-CWF, MF	0.043	-	0.025	-	-
043015_JC_1001_I_MI	15	Luzerne	HQ-CWF, MF	-	-	-	0.457	0.275
043015_JC_1001_PFO	15	Luzerne	HQ-CWF, MF	0.056	-	0.029	-	-
043015_JC_1001_PEM	15	Luzerne	HQ-CWF, MF	0.008	-	-	-	-
112114_JC_003B_PFO	16.1	Luzerne	HQ-CWF, MF	1.065	-	0.622	-	-
112114_JC_1003_P_IM	16.2	Luzerne	HQ-CWF, MF	-	-	-	0.252	0.154
112114_JC_1002_P_MI	16.2	Luzerne	HQ-CWF, MF	-	-	-	0.399	0.296
112114_JC_003A_PSS	16.2	Luzerne	HQ-CWF, MF	0.264	0.162	-	-	-
112114_JC_003B_PSS	16.2	Luzerne	HQ-CWF, MF	0.012	0.003	-	-	-
112114_JC_1001_P_MI	16.4	Luzerne	HQ-CWF, MF	-	-	-	0.507	0.314
112114_JC_002_PSS	16.4	Luzerne	HQ-CWF, MF	0.149	0.101	-	-	-
112114_JC_002_PEM	16.4	Luzerne	HQ-CWF, MF	0.002	-	-	-	-
112014_JC_1003_P_IM	16.7	Luzerne	HQ-CWF, MF	-	-	-	0.874	0.659
112014_JC_1002_P_MI	16.9	Luzerne	HQ-CWF, MF	-	-	-	0.521	0.340
112014_JC_002_PFO	16.9	Luzerne	HQ-CWF, MF	0.333	-	0.179	-	-
112014_JC_002_PEM	16.9	Luzerne	HQ-CWF, MF	0.058	-	-	-	-
102715_BB_002_E_MI	17	Luzerne	HQ-CWF, MF	-	-	-	0.892	0.791
112014_JC_1001_P_MI	17.7	Luzerne	HQ-CWF, MF	-	-	-	0.146	0.096
112014_JC_001_PFO	17.7	Luzerne	HQ-CWF, MF	0.520	-	0.293	-	-
112014_JC_001_PEM	17.7	Luzerne	HQ-CWF, MF	0.001	-	-	-	-
111914_JC_1002_P_IM	18.3	Luzerne	HQ-CWF, MF	-	-	-	0.516	0.307
111914_JC_1001_P_IM	18.4	Luzerne	HQ-CWF, MF	-	-	-	0.263	0.158
121814_JC_1014_E_MI	19	Luzerne	HQ-CWF, MF	-	-	-	0.428	0.301
121814_JC_1014_I_MI	19.1	Luzerne	HQ-CWF, MF	-	-	-	0.874	0.597
121614_JC_1009_P_IM	19.6	Luzerne	HQ-CWF, MF	-	-	-	0.761	0.522
111315_GM_1002_E_MI	19.7	Luzerne	HQ-CWF, MF	-	-	-	0.055	0.024
111315_GM_1001_E_MI	19.7	Luzerne	HQ-CWF, MF	-	-	-	0.217	0.136
121614_JC_1009_P_MI	19.7	Luzerne	HQ-CWF, MF	-	-	-	0.202	0.144
121614_JC_001_PEM	19.7	Luzerne	HQ-CWF, MF	0.001	-	-	-	-
121614_JC_001_PFO	19.7	Luzerne	HQ-CWF, MF	0.344	-	0.201	-	-
121614_JC_1007_P_MI	20	Luzerne	HQ-CWF, MF	-	-	-	0.573	0.337
121714_JC_1001_E_MI	20.1	Luzerne	HQ-CWF, MF	-	-	-	0.092	0.059
121614_JC_1006_P_MI	20.1	Luzerne	HQ-CWF, MF	-	-	-	0.864	0.530
121614_JC_1005_I_MI	20.7	Luzerne	HQ-CWF, MF	-	-	-	0.630	0.427
121614_JC_1004_I_MI	21.2	Luzerne	HQ-CWF, MF	-	-	-	0.540	0.324



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TITLE: PENNEAST PIPELINE PROJECT WETLAND AND RIPARIAN REFORESTATION PLAN REFORESTATION NOTES AND DETAILS										
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0	10/14/2019	ISSUED FOR CLIENT REVIEW	SR	SB	SB	HB	CKD BY: SB	ENG:	DATE:	W.O.:
NO.	DATE	REVISIONS	BY	CHK	APP	APP	DRN BY: SR	SCALE: NOT TO SCALE	DWG NO.:	SHEET 3 OF 9

Drawn By & Date/Time: sheril.roth Jun 09, 2020 - 8:40am
Drawing Location & Name: C:_Work_files\UGI-PennEast\RP-01-09 PnEst Rest Notes-Dets.dwg

RESOURCE ID	MP	COUNTY	WATERSHED DESIGNATED / EXISTING USE	WETLAND RESTORATION			RIPARIAN RESTORATION	
				FACW MEADOW SEED MIX	ACREAGE OF SHRUB PLANTINGS IN PSS WETLANDS	ACREAGE OF TREE AND SHRUB PLANTINGS IN PFO WETLANDS	ACREAGE OF RIPARIAN BUFFER SEED MIX	ACREAGE OF TREE AND SHRUB PLANTINGS IN RIPARIAN BUFFERS
102115_WA_002_E_MI	22.5	Luzerne	HQ-CWF, MF	-	-	-	0.290	0.225
042017_MK_1002_P_MI	22.5	Luzerne	HQ-CWF, MF	-	-	-	0.164	0.164
102115_WA_001_E_MI	22.6	Luzerne	HQ-CWF, MF	-	-	-	0.773	0.465
102115_WA_001_I_MI	22.7	Luzerne	HQ-CWF, MF	-	-	-	0.191	0.107
050615_JC_1001_P_IM	22.7	Luzerne	HQ-CWF, MF	-	-	-	0.624	0.401
102115_WA_003_PFO	22.7	Luzerne	HQ-CWF, MF	0.019	-	0.016	-	-
052115_JC_1001_P_MA	23.1	Luzerne	HQ-CWF, MF	-	-	-	1.160	0.392
110614_JC_004_PFO	24.2	Carbon	HQ-CWF, MF	0.098	-	0.098	-	-
082219_MU_1006_PEM	24.3	Carbon	HQ-CWF, MF	0.004	-	-	-	-
110415_GM_1001_I_MI	24.5	Carbon	HQ-CWF, MF	-	-	-	0.622	0.419
110614_JC_002B_PFO	24.5	Carbon	HQ-CWF, MF	0.008	-	0.008	-	-
102114_JC_001B_PFO	26.4	Carbon	HQ-CWF, MF	0.032	-	0.014	-	-
102114_JC_1002_P_MI	26.5	Carbon	HQ-CWF, MF	-	-	-	0.293	0.103
102114_JC_1003_E_MI	26.5	Carbon	HQ-CWF, MF	-	-	-	0.503	0.223
102114_JC_001_PEM	26.5	Carbon	HQ-CWF, MF	0.491	-	-	-	-
102114_JC_1001_P_MI	26.6	Carbon	HQ-CWF, MF	-	-	-	1.741	1.268
072319_MU_1002_E_MI	26.6	Carbon	HQ-CWF, MF	-	-	-	-	-
112414_JC_004_PFO	26.7	Carbon	HQ-CWF, MF	0.061	-	-	-	-
102114_JC_001A_PSS	26.8R2	Carbon	HQ-CWF, MF	0.090	-	-	-	-
102114_JC_001_PFO	26.8R2	Carbon	HQ-CWF, MF	0.084	-	-	-	-
102314_JC_1001_P_MI	27.6R2	Carbon	HQ-CWF, MF	-	-	-	0.406	0.290
042415_JC_1005_PEM	29.7R2	Carbon	HQ-CWF, MF	0.196	-	-	-	-
050115_JC_1001_PFO	29.7R2	Carbon	HQ-CWF, MF	1.324	-	0.805	-	-
042415_JC_1003_PSS	30.4R2	Carbon	HQ-CWF, MF	0.066	0.013	-	-	-
042415_JC_1006_E_MI	30.5R2	Carbon	HQ-CWF, MF	-	-	-	1.804	1.005
042415_JC_1002_PEM	31.2R2	Carbon	HQ-CWF, MF	0.302	-	-	-	-
042415_JC_1001_PFO	31.3R2	Carbon	HQ-CWF, MF	2.495	-	1.500	-	-
110316_GM_1002_I_MI	32.6R3	Carbon	HQ-CWF, MF	-	-	-	0.395	0.230
110316_GM_1001_PFO	32.6R3	Carbon	HQ-CWF, MF	0.037	-	0.025	-	-
110316_GM_1001_I_MI	32.7R3	Carbon	HQ-CWF, MF	-	-	-	0.491	0.300
110316_GM_1003_I_MI	32.8R3	Carbon	HQ-CWF, MF	-	-	-	0.724	0.457
110316_GM_1001_PEM	32.8R3	Carbon	HQ-CWF, MF	0.151	-	-	-	-
110316_GM_1004_I_MI	32.9R3	Carbon	HQ-CWF, MF	-	-	-	0.636	0.377
042115_JC_1001_P_IN	33.2R3	Carbon	HQ-CWF, MF	-	-	-	0.493	0.266
042115_JC_1002_P_MI	33.3R3	Carbon	HQ-CWF, MF	-	-	-	0.104	0.052
042115_JC_1003_E_MI	33.4R3	Carbon	HQ-CWF, MF	-	-	-	0.449	0.215
042115_JC_1004_I_MI	33.6R3	Carbon	HQ-CWF, MF	-	-	-	2.022	1.305
042115_JC_1006_I_MI	33.7R3	Carbon	HQ-CWF, MF	-	-	-	0.701	0.352
042115_JC_1003_PFO	33.7R3	Carbon	HQ-CWF, MF	0.273	-	0.259	-	-
042315_JC_1001_I_MI	34.6R2	Carbon	EV, MF	-	-	-	0.035	0.030
042315_JC_1002_PEM	34.7R2	Carbon	EV, MF	0.121	-	-	-	-
042315_JC_1001_PFO	34.7R2	Carbon	EV, MF	1.561	-	1.335	-	-
042315_JC_1003_P_IN	34.8R3	Carbon	EV, MF	-	-	-	0.462	0.395
042315_JC_1002_P_MI	34.8R3	Carbon	EV, MF	-	-	-	0.225	0.192
042315_JC_1003_I_IN	34.8	Carbon	EV, MF	-	-	-	0.722	0.668
042315_JC_1004_PFO	35.4	Carbon	EV, MF	0.041	-	0.040	-	-
010716_GM_1001_VP	35.5	Carbon	EV, MF	0.013	-	-	-	-
060117_MB_1001_PFO	36	Carbon	EV, MF	0.524	-	0.463	-	-

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060117_MB_1001_PEM	36	Carbon	EV, MF	0.014	-	-	-	-
060117_MB_1001_P_MI	36.1	Carbon	EV, MF	-	-	-	0.383	0.284
060217_MB_1001_PEM	36.1	Carbon	EV, MF	0.005	-	-	-	-
060217_MB_1001_PFO	36.1	Carbon	EV, MF	0.389	-	0.337	-	-
050615_JC_1002_I_MI	36.5R3	Carbon	EV, MF	-	-	-	0.248	0.209
050615_JC_1001_PFO	36.7R3	Carbon	EV, MF	1.909	-	1.651	-	-
010816_DB_1001_I_MI	36.8R3	Carbon	EV, MF	-	-	-	0.396	0.342
061615_DB_1002_PFO	37.1R3	Carbon	EV, MF	0.582	-	0.504	-	-
061615_DB_1001_I_MI	37.5	Carbon	EV, MF	-	-	-	0.687	0.452
061615_DB_1001_PEM	37.5	Carbon	EV, MF	0.010	-	-	-	-
061615_DB_1002_P_IN	38.3	Carbon	EV, MF	-	-	-	0.529	0.287
040517_BT_1001_E_MI	41	Carbon	EV, MF	-	-	-	0.518	0.447
091516_GM_1002_E_MI	41.1	Carbon	EV, MF	-	-	-	0.620	0.539
040517_BT_1002_I_MI	41.1	Carbon	EV, MF	-	-	-	0.001	0.001
012717_GM_1002_P_MI	41.2	Carbon	EV, MF	-	-	-	0.568	0.491
012717_GM_1003_P_MI	41.2	Carbon	EV, MF	-	-	-	0.641	0.556
020117_GM_1006_PFO	41.2	Carbon	EV, MF	0.116	-	0.100	-	-
020117_GM_1002_P_MI	41.3	Carbon	EV, MF	-	-	-	0.557	0.482
020117_GM_1001_P_MI	41.6	Carbon	EV, MF	-	-	-	0.538	0.466
122215_DB_1001_P_MI	44.4R3	Carbon	CWF, MF	-	-	-	0.013	0.013
041018_WA_1000_P_MI	44.8R2	Carbon	HQ-CWF, MF	-	-	-	1.188	0.826
041018_WA_002_PSS	44.8R2	Carbon	HQ-CWF, MF	0.014	0.008	-	-	-
051115_JC_1002_P_MI	45R2	Carbon	HQ-CWF, MF	-	-	-	0.641	0.175
052915_JC_1001_PEM	45R2	Carbon	HQ-CWF, MF	0.060	-	-	-	-
051115_JC_1001_P_MI	45.6	Carbon	HQ-CWF, MF	-	-	-	0.899	0.696
051115_JC_1001_PEM	45.6	Carbon	HQ-CWF, MF	0.071	-	-	-	-
090914_WA_1000_P_IM	48.1	Carbon	CWF, MF	-	-	-	0.425	0.208
090914_WA_001_PSS	48.1	Carbon	CWF, MF	0.060	0.023	-	-	-
090914_WA_002_PSS	48.2	Carbon	CWF, MF	0.024	0.011	-	-	-
033018_WA_1001_E_MI	48.9R3	Carbon	HQ-CWF, MF	-	-	-	0.033	0.033
033018_WA_1003_P_MI	49.2R3	Carbon	HQ-CWF, MF	-	-	-	0.024	0.024
041217_GM_1001_P_IN	49.3R3	Carbon	HQ-CWF, MF	-	-	-	0.378	0.304
041117_GM_1001_E_MI	49.4R3	Carbon	HQ-CWF, MF	-	-	-	0.468	0.356
072618_WA_1005_I_MI	50.6R3	Carbon	HQ-CWF, MF	-	-	-	0.048	0.028
072618_WA_1007_I_MI	50.6R3	Carbon	HQ-CWF, MF	-	-	-	0.463	0.273
072618_WA_1008_I_MI	50.6R3	Carbon	HQ-CWF, MF	-	-	-	0.324	0.181
072618_WA_001_PEM	50.6R3	Carbon	HQ-CWF, MF	0.132	-	-	-	-
072618_WA_002_PEM	50.6R3	Carbon	HQ-CWF, MF	0.002	-	-	-	-
072618_WA_1000_I_MI	50.7R3	Monroe	HQ-CWF, MF	-	-	-	0.276	0.193
072618_WA_1006_I_MI	50.7R3	Carbon	HQ-CWF, MF	-	-	-	0.194	0.132
072618_WA_1001_P_MI	50.7R3	Carbon	HQ-CWF, MF	-	-	-	0.526	0.318
040517_GM_1001_PFO	52.4R3	Northampton	CWF, MF	0.038	-	0.012	-	-
040517_GM_1001_PEM	52.4R3	Northampton	CWF, MF	0.001	-	-	-	-
040617_GM_1001_PFO	52.5R3	Northampton	CWF, MF	0.060	-	0.032	-	-
040617_GM_1001_PEM	52.5R3	Northampton	CWF, MF	0.002	-	-	-	-
052918_WA_004_PFO	52.5R3	Northampton	CWF, MF	0.071	-	0.039	-	-
052918_WA_005_PEM	52.5R3	Northampton	CWF, MF	0.011	-	-	-	-
052918_WA_003_PFO	52.6R3	Northampton	CWF, MF	0.118	-	0.068	-	-



PENNEAST PIPELINE PROJECT WETLAND AND RIPARIAN REFORESTATION PLAN REFORESTATION NOTES AND DETAILS										
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0	10/14/2019	ISSUED FOR CLIENT REVIEW	SR	SB	SB	HB	CKD BY: SB	ENG:	DATE:	W.O.:
NO.	DATE	REVISIONS	BY	CHK	APP	APP	DRN BY: SR	SCALE: NOT TO SCALE	DWG NO.:	SHEET 4 OF 9

NAD 1883 PA83-NF

Drawn By & Date/Time: sheril.roth Jun 09, 2020 8:40am
Drawing Location & Name: C:_Work_files\UGI-PennEast\RP-01-09 PnEst Rest Notes-Dets.dwg

RESOURCE ID	MP	COUNTY	WATERSHED DESIGNATED / EXISTING USE	WETLAND RESTORATION			RIPARIAN RESTORATION	
				FACW MEADOW SEED MIX	ACREAGE OF SHRUB PLANTINGS IN PSS WETLANDS	ACREAGE OF TREE AND SHRUB PLANTINGS IN PFO WETLANDS	ACREAGE OF RIPARIAN BUFFER SEED MIX	ACREAGE OF TREE AND SHRUB PLANTINGS IN RIPARIAN BUFFERS
080917_WA_003_PEM	52.7R3	Northampton	CWF, MF	0.025	-	-	-	-
080917_WA_002_PEM	52.7R3	Northampton	CWF, MF	0.037	-	-	-	-
110217_WA_1001_P_MI	52.8R3	Northampton	CWF, MF	-	-	-	0.058	-
080917_WA_1002_P_MI	52.8R3	Northampton	CWF, MF	-	-	-	0.687	-
080917_WA_002_PSS	52.8R3	Northampton	CWF, MF	0.035	-	-	-	-
110217_WA_001_PSS	52.8R3	Northampton	CWF, MF	0.005	-	-	-	-
110217_WA_1002_I_MI	52.9R3	Northampton	CWF, MF	-	-	-	0.038	-
110217_WA_1003_P_MI	52.9R3	Northampton	CWF, MF	-	-	-	0.084	-
110217_WA_005_PFO	52.9R3	Northampton	CWF, MF	0.080	-	-	-	-
110217_WA_006_PEM	52.9R3	Northampton	CWF, MF	0.000	-	-	-	-
080917_WA_1001_I_MI	53.2R3	Northampton	CWF, MF	-	-	-	0.134	0.096
050217_MB_1002_PEM	53.3R3	Northampton	CWF, MF	0.011	-	-	-	-
080917_WA_001_PEM	53.3R3	Northampton	CWF, MF	0.043	-	-	-	-
050217_MB_1001_P_IN	53.4R3	Northampton	CWF, MF	-	-	-	0.301	0.209
050217_MB_1002_I_MI	53.4R3	Northampton	CWF, MF	-	-	-	0.239	0.140
050217_MB_1001_PEM	53.4R3	Northampton	CWF, MF	0.069	-	-	-	-
050217_MB_1004_PFO	53.4R3	Northampton	CWF, MF	0.002	-	0.002	-	-
102815_WA_1001_E_MI	55.7	Northampton	CWF, MF	-	-	-	0.392	0.237
051215_JC_1003_I_MI	55.9	Northampton	CWF, MF	-	-	-	0.076	0.041
051215_JC_1002_P_IN	55.9	Northampton	CWF, MF	-	-	-	0.543	0.337
051215_JC_1001_E_MI	55.9	Northampton	CWF, MF	-	-	-	0.283	0.170
081815_MK_042_PEM	56	Northampton	CWF, MF	0.108	-	-	-	-
062218_WA_001_PFO	56	Northampton	CWF, MF	0.692	-	0.485	-	-
062218_WA_001_PEM	56	Northampton	CWF, MF	0.141	-	-	-	-
050417_GM_1002_P_MI	56.6	Northampton	CWF, MF	-	-	-	0.273	0.093
050417_GM_1001_I_MI	56.6	Northampton	CWF, MF	-	-	-	0.066	0.017
101717_AB_1001_PEM	56.6	Northampton	CWF, MF	0.000	-	-	-	-
052218_WA_002_PEM	56.6	Northampton	CWF, MF	0.007	-	-	-	-
050417_GM_1003_P_IN	56.7	Northampton	CWF, MF	-	-	-	0.457	0.262
050417_GM_1003_PEM	56.7	Northampton	CWF, MF	0.009	-	-	-	-
050417_GM_1002_PEM	56.7	Northampton	CWF, MF	0.078	-	-	-	-
071917_MB_1001_I_MI	58R2	Northampton	HQ-CWF, MF	-	-	-	0.143	0.084
052218_WA_1003_P_MI	58.5	Northampton	HQ-CWF, MF	-	-	-	0.076	0.076
052218_WA_1000_E_MI	58.5	Carbon	HQ-CWF, MF	-	-	-	0.794	0.256
052218_WA_003_PEM	58.5	Northampton	HQ-CWF, MF	0.058	-	-	-	-
090314_DB_1011_E_MI	59	Northampton	HQ-CWF, MF	-	-	-	0.068	0.041
090414_DB_1012_I_MI	59.2	Northampton	HQ-CWF, MF	-	-	-	0.200	0.149
090414_DB_008_PEM	59.2	Northampton	HQ-CWF, MF	0.068	-	-	-	-
090414_DB_1013_I_MI	59.3	Northampton	HQ-CWF, MF	-	-	-	0.747	0.505
051215_JC_1005_P_IN	60.3	Northampton	HQ-CWF, MF	-	-	-	0.394	0.271
090314_DB_1007_E_MI	60.6	Northampton	HQ-CWF, MF	-	-	-	0.109	0.086
090314_DB_1005_E_MI	60.6	Northampton	HQ-CWF, MF	-	-	-	0.355	0.262
090314_DB_1006_I_MI	60.7	Northampton	HQ-CWF, MF	-	-	-	0.792	0.600
090314_DB_004_PEM	60.7	Northampton	HQ-CWF, MF	0.099	-	-	-	-
111214_JC_1004_P_IM	61.5R3	Northampton	HQ-CWF, MF	-	-	-	0.376	0.247
102715_WA_1002_P_MI	62.4R3	Northampton	HQ-CWF, MF	-	-	-	0.118	0.075
051415_JC_1001_I_MI	62.8R3	Northampton	HQ-CWF, MF	-	-	-	0.545	-
041119_DHB_001_PEM	62.8R3	Northampton	HQ-CWF, MF	0.374	-	-	-	-

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051415_JC_1002_P_IN	63.6R2	Northampton	HQ-CWF, MF	-	-	-	0.259	0.163
042815_JC_1003_PEM	64.3R2	Northampton	HQ-CWF, MF	0.003	-	-	-	-
051415_JC_1004_POND_IN	68.7	Northampton	CWF, MF	-	-	-	0.276	0.150
010615_JC_1000_E_MI	70.6R3	Northampton	CWF, MF	-	-	-	0.395	0.283
010615_JC_1001_E_MI	70.7R3	Northampton	CWF, MF	-	-	-	0.112	0.101
012116_GM_1001_E_IN	71.5	Northampton	CWF, MF	-	-	-	0.159	0.159
092614_GO_1001_P_MI	72.1	Northampton	CWF, MF	-	-	-	0.179	0.101
092614_GO_002_PFO	72.1	Northampton	CWF, MF	0.136	-	0.079	-	-
031918_WA_1003_I_MI	72.4	Northampton	CWF, MF	-	-	-	0.255	0.153
031918_WA_001_PSS	72.4	Northampton	CWF, MF	0.233	0.142	-	-	-
040318_WA_0001_PEM	72.4	Northampton	CWF, MF	0.097	-	-	-	-
040318_WA_0001_PSS	72.4	Northampton	CWF, MF	0.146	0.099	-	-	-
051415_JC_1006_E_MI	72.5	Northampton	CWF, MF	-	-	-	0.414	0.266
031918_WA_1000_P_MI	72.5	Northampton	CWF, MF	-	-	-	0.172	0.103
051415_JC_1005_P_IN	72.6	Northampton	CWF, MF	-	-	-	0.844	0.432
012016_GM_1001_I_MI	72.6	Northampton	CWF, MF	-	-	-	0.007	0.007
051415_JC_1001_PEM	72.6	Northampton	CWF, MF	0.010	-	-	-	-
012116_GM_1001_PFO	72.6	Northampton	CWF, MF	0.050	-	0.039	-	-
012016_GM_1003_I_MI	72.7	Northampton	CWF, MF	-	-	-	0.000	0.000
012016_GM_1002_I_MI	72.7	Northampton	CWF, MF	-	-	-	0.011	0.011
102715_WA_1001_P_MI	72.7	Northampton	CWF, MF	-	-	-	1.030	0.571
102715_WA_1001_I_MI	72.7	Northampton	CWF, MF	-	-	-	0.091	0.090
042815_JC_1005_I_MI	72.8	Northampton	CWF, MF	-	-	-	0.062	0.029
042815_JC_1001_PFO	72.9	Northampton	CWF, MF	1.283	-	0.698	-	-
042815_JC_1001_E_MI	73	Northampton	CWF, MF	-	-	-	0.259	0.176
031716_NJ_002_PEM	73.1	Northampton	HQ-CWF, MF	0.138	-	-	-	-
031716_NJ_1002_I_MI	73.2	Northampton	HQ-CWF, MF	-	-	-	0.047	0.043
031716_NJ_1003_P_MI	73.2	Northampton	HQ-CWF, MF	-	-	-	0.124	0.124
031716_NJ_002_PSS	73.2	Northampton	HQ-CWF, MF	0.038	0.025	-	-	-
042117_GM_1003_P_MI	73.6R2	Northampton	HQ-CWF, MF	-	-	-	0.255	0.154
042117_GM_1001_P_MI	73.6R2	Northampton	HQ-CWF, MF	-	-	-	0.437	0.272
042117_GM_1001_PFO	73.6R2	Northampton	HQ-CWF, MF	0.098	-	0.056	-	-
042418_WA_1005_P_MI	73.7R2	Northampton	HQ-CWF, MF	-	-	-	0.050	0.048
042418_WA_1002_I_MI	73.7R2	Northampton	HQ-CWF, MF	-	-	-	0.071	0.042
042418_WA_1004_P_MI	73.7R2	Northampton	HQ-CWF, MF	-	-	-	0.801	0.524
042418_WA_006_PFO	73.7R2	Northampton	HQ-CWF, MF	0.099	-	0.062	-	-
042418_WA_008_PFO	73.7R2	Northampton	HQ-CWF, MF	0.121	-	0.068	-	-
042518_WA_001_PSS	74.3	Northampton	HQ-CWF, MF	0.062	0.043	-	-	-
091814_MK_1009_P_IM	74.7	Northampton	HQ-CWF, MF	-	-	-	0.134	0.087
062415_BT_1001_P_MI	74.9	Northampton	HQ-CWF, MF	-	-	-	0.738	0.532
062415_BT_1002_PEM	74.9	Northampton	HQ-CWF, MF	0.109	-	-	-	-
122016_LZ_1001_P_MI	75.1	Northampton	HQ-CWF, MF	-	-	-	0.290	-
122016_LZ_1002_PEM	75.1	Northampton	HQ-CWF, MF	0.066	-	-	-	-
042418_WA_001_PSS	75.1	Northampton	HQ-CWF, MF	0.258	0.162	-	-	-
042418_WA_001_PEM	75.1	Northampton	HQ-CWF, MF	0.000	-	-	-	-
042418_WA_002_PEM	75.1	Northampton	HQ-CWF, MF	0.004	-	-	-	-
042418_WA_002_PSS	75.1	Northampton	HQ-CWF, MF	0.037	0.027	-	-	-
042418_WA_003_PEM	75.2	Northampton	HQ-CWF, MF	0.165	-	-	-	-



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TITLE:
**PENNEAST PIPELINE PROJECT
WETLAND AND RIPARIAN REFORESTATION PLAN
REFORESTATION NOTES AND DETAILS**

1	06/08/2020	REVISED PER CLIENT COMMENTS	SR	SB	SB	HB	LOC: BUCKS, CARBON, LUZERNE, MONROE AND NORTHAMPTON COUNTIES	REV.: 1
0	10/14/2019	ISSUED FOR CLIENT REVIEW	SR	SB	SB	HB	CKD BY: SB ENG: DATE: W.O.:	
NO.	DATE	REVISIONS	BY	CHK	APP	APP	DRN BY: SR SCALE: NOT TO SCALE DWG NO.: SHEET 5 OF 9	

Drawn By & Date/Time: sheril.roth Jun 09, 2020 - 8:40am
 Drawing Location & Name: C:_work files\UGI-PennEast\RP-01-09 PnEst Rest Notes-Dets.dwg

RESOURCE ID	MP	COUNTY	WATERSHED DESIGNATED / EXISTING USE	WETLAND RESTORATION		RIPARIAN RESTORATION		
				FACW MEADOW SEED MIX	ACREAGE OF SHRUB PLANTINGS IN PSS WETLANDS	ACREAGE OF TREE AND SHRUB PLANTINGS IN PFO WETLANDS	ACREAGE OF RIPARIAN BUFFER SEED MIX	ACREAGE OF TREE AND SHRUB PLANTINGS IN RIPARIAN BUFFERS
111314_JC_1002_I_MI	75.7	Northampton	EV, MF	-	-	-	0.708	0.588
111314_JC_003_PFO	75.7	Northampton	EV, MF	0.016	-	0.016	-	-
111314_JC_1001_I_MI	75.8	Northampton	EV, MF	-	-	-	0.420	0.381
051515_JC_1004_E_MI	76.2	Bucks	WWF, MF	-	-	-	0.179	-
Blue Mountain Lateral								
041017_GM_1001_P_MI	0.51R3	Carbon	HQ-CWF, MF	-	-	-	0.296	0.258
041117_GM_1002_E_MI	0.51R3	Carbon	HQ-CWF, MF	-	-	-	0.011	0.011
041017_GM_1001_P_IN	0.51R3	Carbon	HQ-CWF, MF	-	-	-	0.752	0.475
Hellertown Lateral								
062218_WA_1002_P_IN	0.3	Northampton	CWF, MF	-	-	-	0.512	0.355
062218_WA_1004_P_IN	0.3	Northampton	CWF, MF	-	-	-	0.029	0.029
010515_JC_1000_I_MI	1.4	Northampton	CWF, MF	-	-	-	0.106	0.077
Total				21.791	1.342	10.369	75.829	45.453

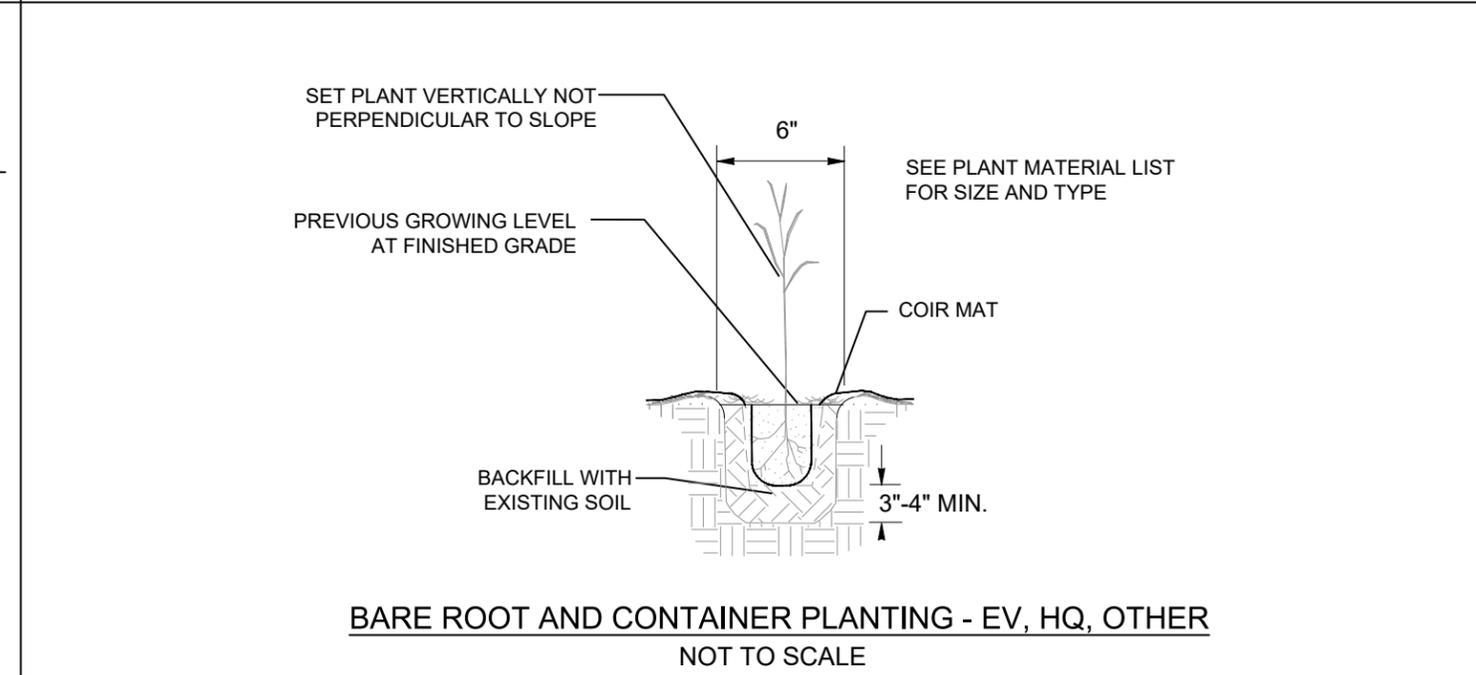
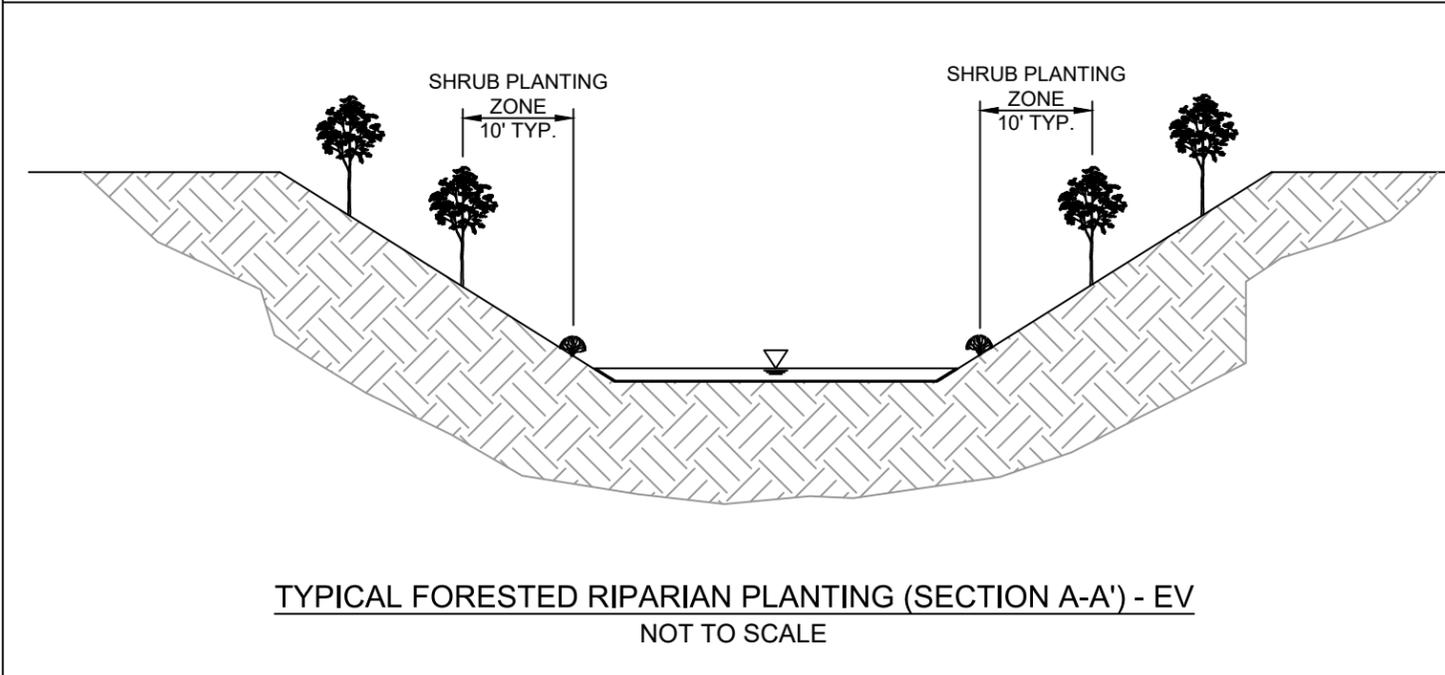
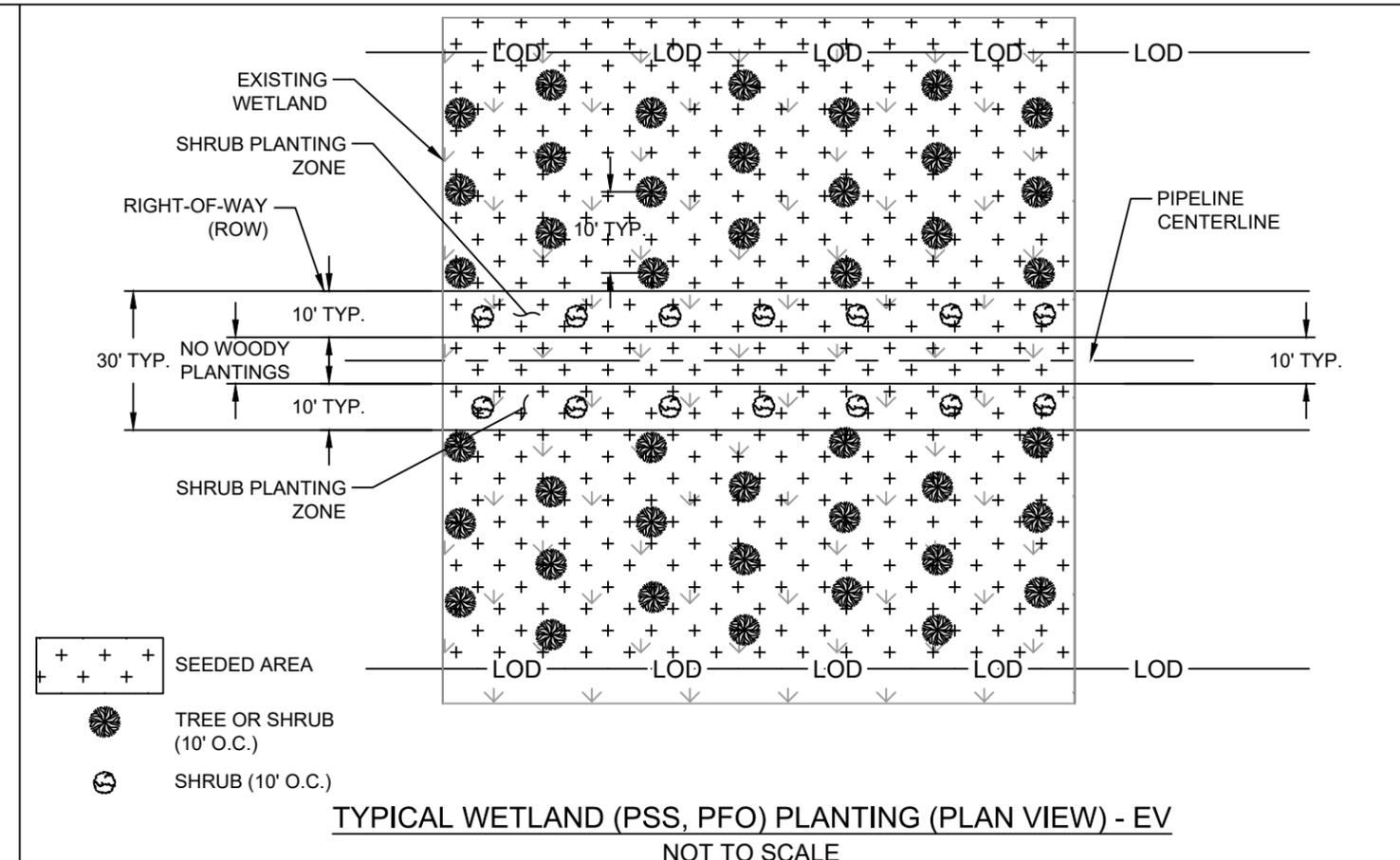
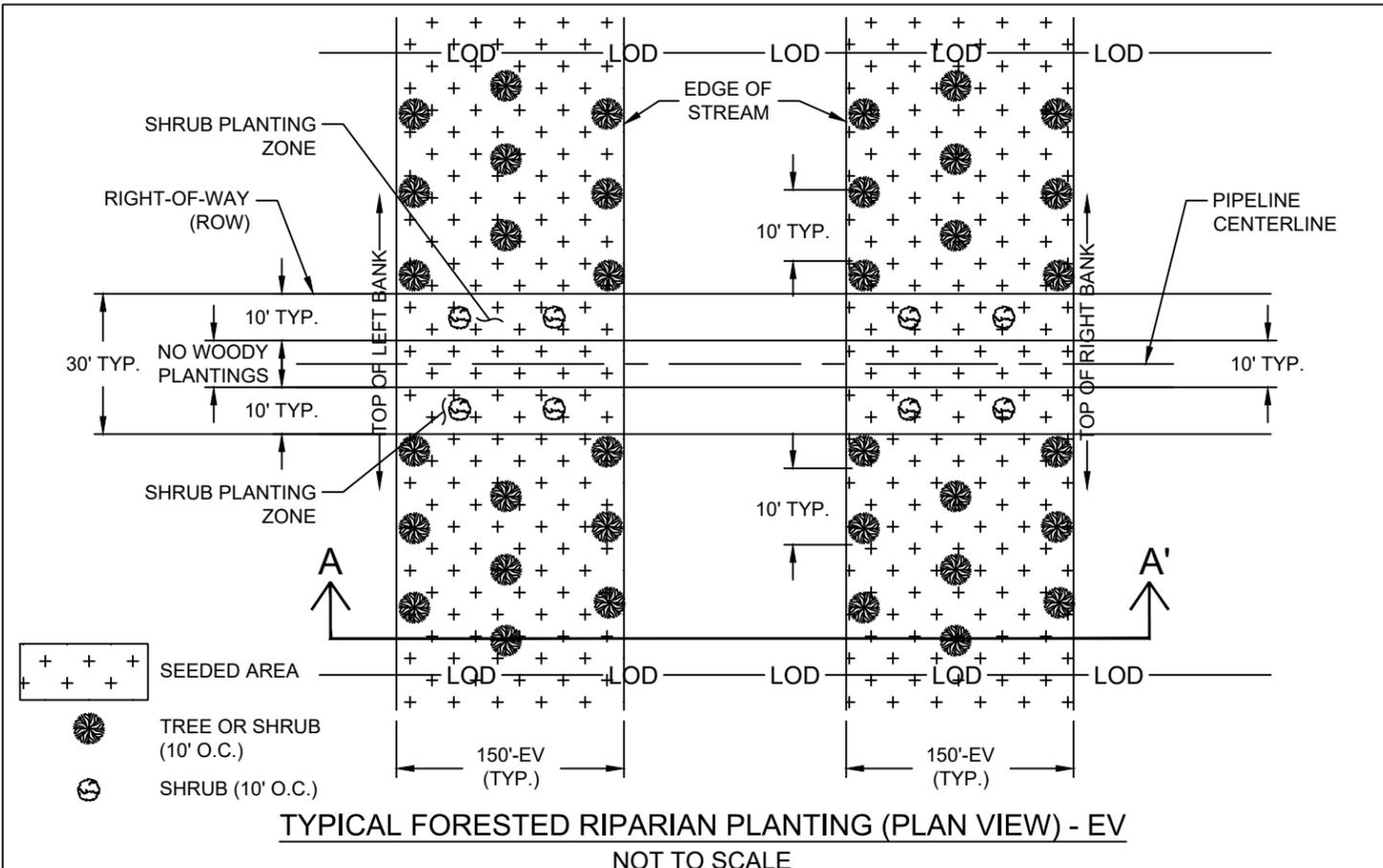


PennEast Pipeline Company, LLC

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NO.	DATE	REVISIONS	BY	CHK	APP	APP	DRN BY: SR	SCALE: NOT TO SCALE	DWG NO.:	SHEET 6 OF 9			

Drawn By & Date/Time: sheril.roth Jun 09, 2020 - 8:40am
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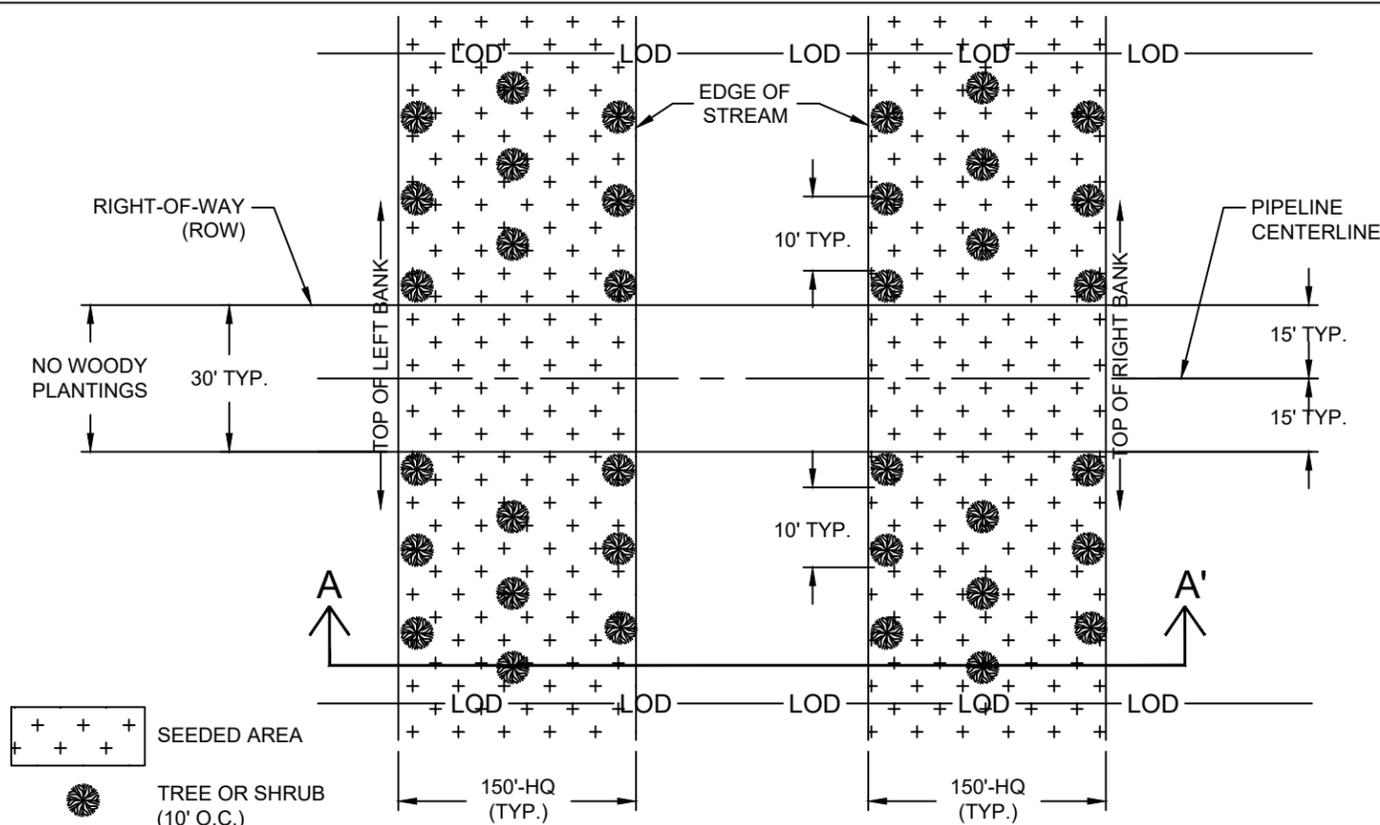


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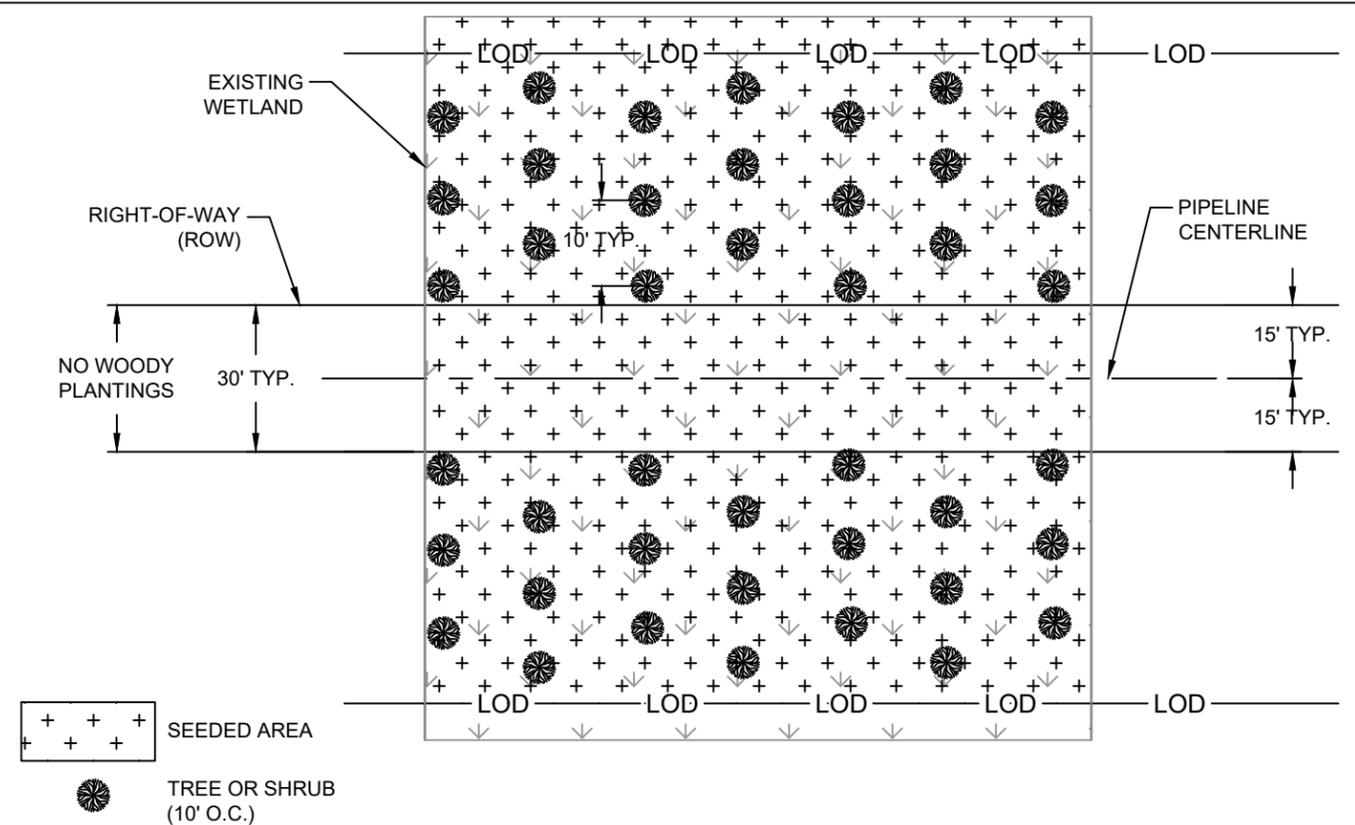
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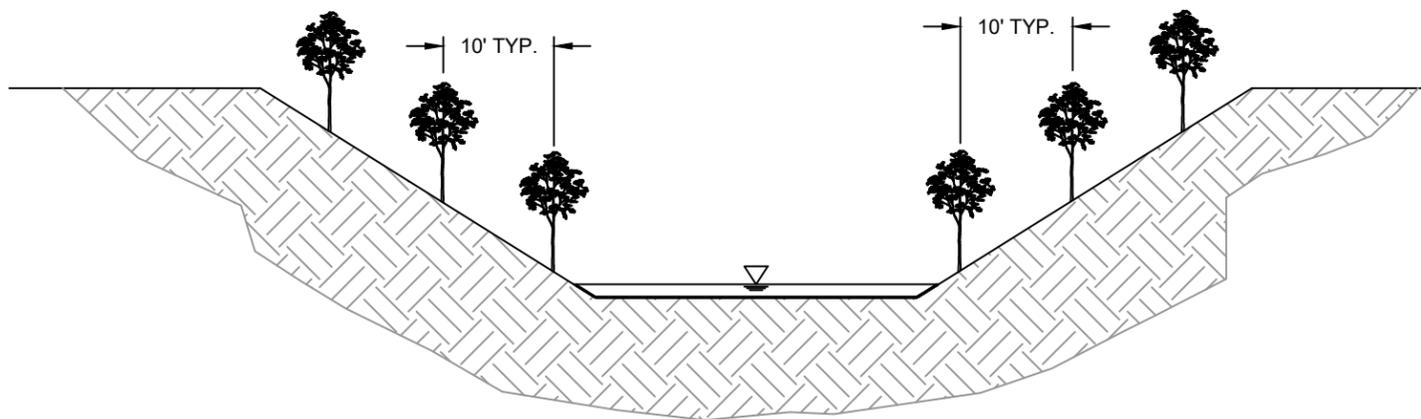
TYPICAL FORESTED RIPARIAN PLANTING (PLAN VIEW) - HQ

NOT TO SCALE



TYPICAL WETLAND (PSS, PFO) PLANTING (PLAN VIEW) - HQ

NOT TO SCALE



TYPICAL FORESTED RIPARIAN PLANTING (SECTION A-A') - HQ

NOT TO SCALE

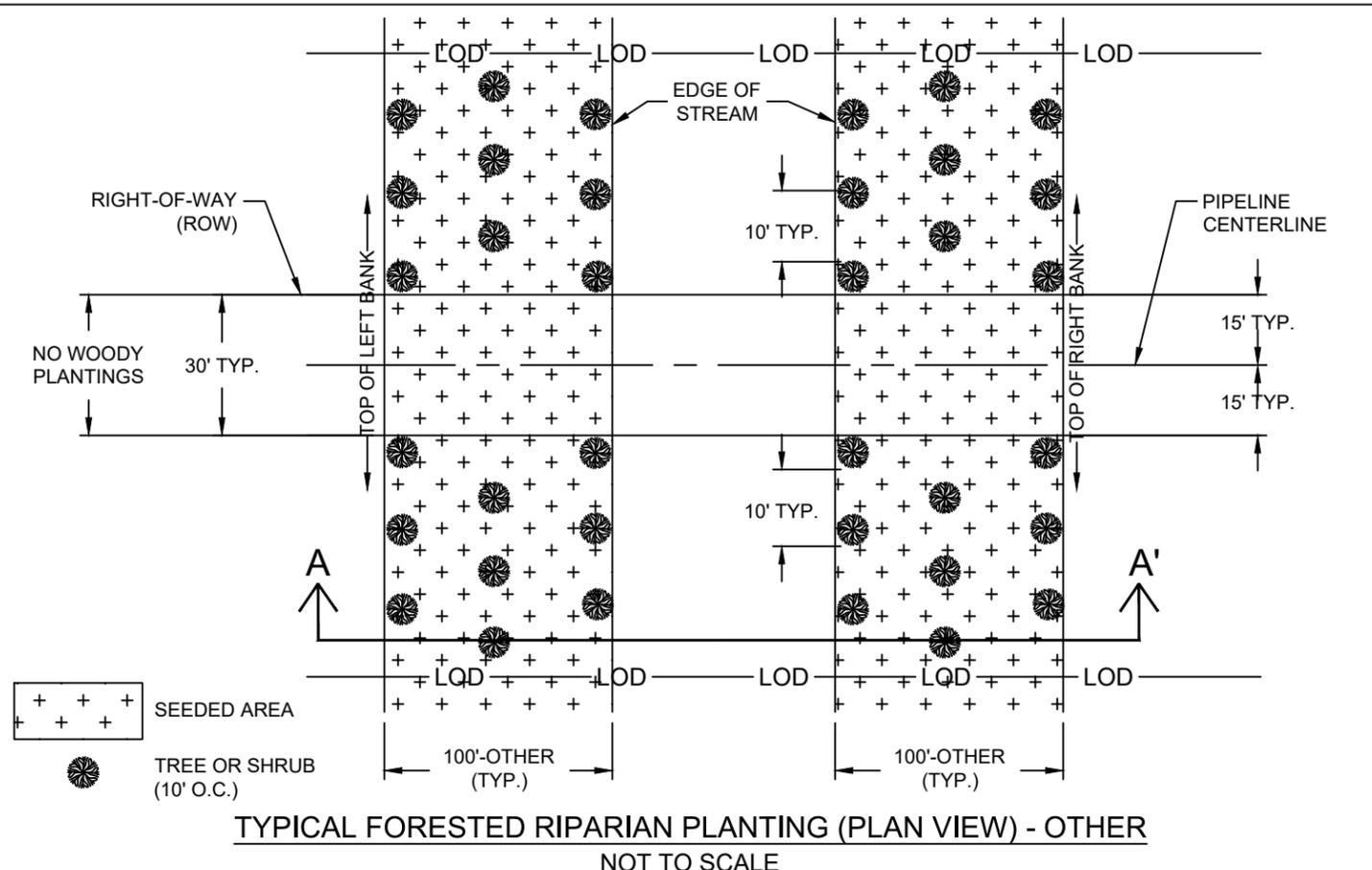


PennEast Pipeline Company, LLC

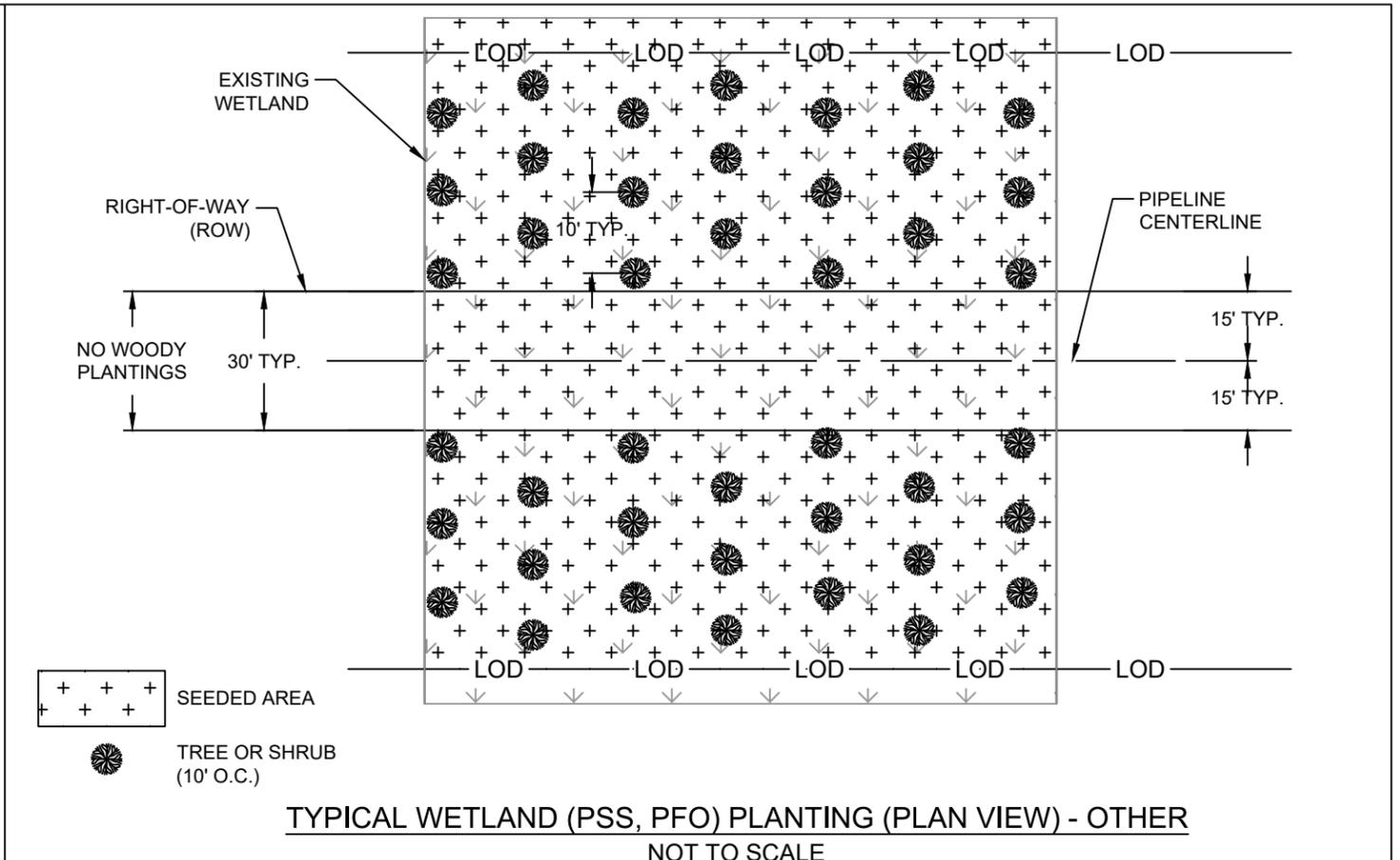
NAD 1883 PA83-NF

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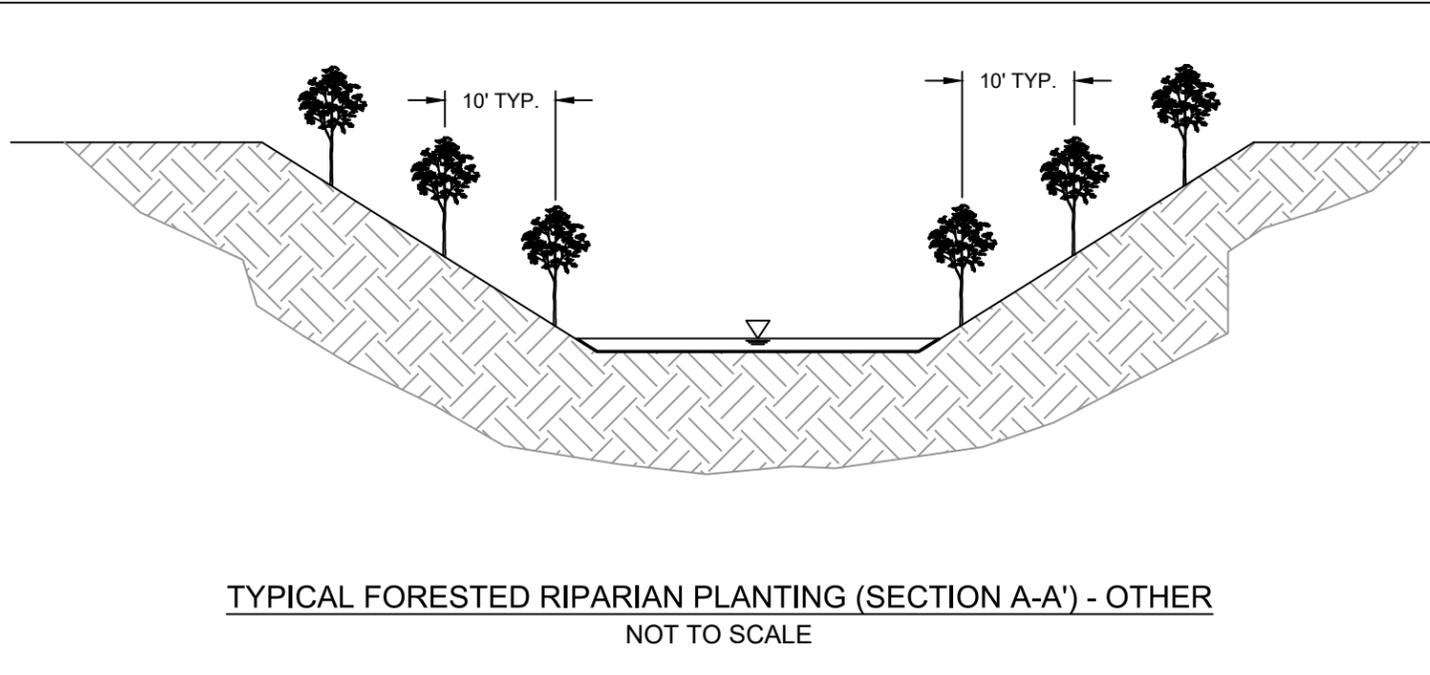
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TYPICAL FORESTED RIPARIAN PLANTING (PLAN VIEW) - OTHER
NOT TO SCALE



TYPICAL WETLAND (PSS, PFO) PLANTING (PLAN VIEW) - OTHER
NOT TO SCALE



TYPICAL FORESTED RIPARIAN PLANTING (SECTION A-A') - OTHER
NOT TO SCALE



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