ATTACHMENT 10

ENVIRONMENTAL ASSESSMENT FORM

Appendix E: Riparian Buffer Planting Plan

NEW June 2025

Tioga Pathway Project
Riparian Buffer Planting Plan

June 2025

PREPARED FOR

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1.0 INTRODUCTION

National Fuel Gas Supply Corporation (National Fuel) proposes to construct the Tioga Pathway Project (Project) located in Potter, Tioga, and McKean counties, Pennsylvania (PA), which consists of the construction and operation of the Z20 Replacement Pipeline, YM59 Mainline Pipeline, and construction or modification of a few auxiliary facilities. Project activities will involve aquatic resource impacts in both Potter and Tioga counties only; National Fuel has designed the Project to avoid all aquatic resource impacts in McKean County.

All streams impacted by the proposed Project will be restored to their original physical condition and there will be no change to their substrate, flow regime, or banks. In addition, National Fuel is voluntarily proposing to replant up to a 50-foot-wide riparian buffer on each side of the streams that supported scrub-shrub/forested vegetation prior to construction. With landowner approval, the previously forested riparian areas located within the limits of disturbance (LOD) will be planted, except for a 30-foot-wide corridor centered over the pipeline. Riparian areas that will be crossed by the proposed Project currently support a variety of cover types including both upland and wetland. Specifically, National Fuel's riparian planting plan includes planting trees/shrubs in wetland areas located within the riparian buffers: a total of 0.538 acre of palustrine emergent (PEM) wetland, 0.792 acre of palustrine scrub-shrub (PSS) wetland and 0.466 acre of palustrine forested (PFO) wetland will be planted within the non-maintained pipeline corridor to supplement the revegetation of these areas and to promote re-establishment of PSS and PFO wetlands on the ROW.

In addition to the riparian areas described above, a total of approximately 8.054 acres of wetlands will be temporarily disturbed by vegetation clearing and soil disturbance in the Project construction workspaces, including 1.907 acres of PSS and 1.145 acres of PFO. Preconstruction wetland conditions in the temporary workspace will be restored to the extent possible to promote revegetation by natural succession. Trench line topsoil segregation in unsaturated wetlands will preserve the native seed source, which will facilitate regrowth of herbaceous vegetation once pipeline installation is complete. The post-construction routine vegetation maintenance procedures in the 10-foot-wide mowed corridor centered over the pipeline (i.e., 5-foot on either side of the pipeline) will result in the permanent conversion of PFO and PSS vegetation to PEM herbaceous wetland vegetation, and the selective cutting of trees within the 30-foot corridor may result in the conversion of PFO to PSS wetlands. The remaining area outside of the maintained corridor will be allowed to naturally revert to its pre-existing cover, including shrubs and trees. However, National Fuel has proactively and conservatively identified all PFO and PSS impacts as permanent conversion to PEM and is proposing compensatory mitigation for the total 1.907 acres of PSS and 1.145 acres of PFO wetland impacts as presented in the Project's *Permittee Responsible Mitigation Plan* (Resource Environmental Solutions [RES] 2025). Therefore, only the wetland areas located within the riparian areas and described above will be replanted.

The following sections of this plan identify the areas that will be planted (Section 2 and Appendix A), the restoration approach including plantings (Section 3), and proposed monitoring activities (Section 4).

2.0 RIPARIAN BUFFER AREAS

As defined in Chapter 102 Section 102.1 of the Title 25 PA Code, a riparian buffer consists of "*permanent vegetation that is predominantly native trees, shrubs and forbs along a surface water that is maintained in a natural state or sustainably managed to protect and enhance water quality, stabilize stream channels and banks, and separate land use activities from surface waters*."

A total of 56 stream areas were identified in the Tioga County Project LOD and a total of 21 stream areas were identified in the Project LOD in Potter County. Of these 77 streams located in the Project's LOD, 39 streams supported a scrub-shrub and/or forested riparian area that will be replanted (Table 1). In addition, a total of 17 wetland areas including PEM, PSS, and PFO cover types were identified within these riparian areas and will be

restored and replanted as part of the riparian buffers: PEM wetlands will be planted with woody vegetation to enhance the functions and values of the pre-existing riparian buffers.

The current condition of the riparian buffers in the proposed construction ROW consists of emergent, shrub, and forested habitat, with some areas of agriculture. National Fuel proposes to restore the existing cover type within the riparian buffers to their preconstruction condition. Specifically, all riparian areas will be seeded with a wetland or upland seed mixture specific to re-establishing the preconstruction cover type at each stream crossing, and areas of pre-construction scrub-shrub or forested cover will be planted up to a maximum extent of 50 feet landward on either side of the waterway (within the workspace disturbed by construction), with the exception of the 30-foot-wide swath centered over the pipeline (which will be restored by seeding herbaceous species only). This Riparian Planting Plan focuses on the post-construction planting of trees/shrubs in the riparian buffer areas identified in Table 1 and Appendix A; seeding of the riparian and wetland areas will be done earlier as part of the construction phase (i.e., during restoration and clean-up), and is addressed in the Project's Erosion and Sediment Control Plan provided in Attachment 11 of the Joint Application for Chapter 105 Water Obstruction and Encroachment and Section 404 Clean Water Act.

Table 1. Riparian Buffer Planting Areas

Stream / Wetland Number	Assigned Planting Area No.	Stream Name	Approx. Resource Milepost	Appendix A: Figure Page No.	Planted Riparian Areas (acres)			
					Upland Riparian	Wetland Riparian		
						PEM	PSS	PFO
Potter County								
S73z W01z-PEM	1	UNT to Marsh Creek	0.00 0.00	1	0.104	0.027	-	-
S01 S02 W01-PSS	2	Marsh Creek	0.10 0.10 0.10	1	0.038	-	0.210	-
S03 S04 W02-PEM W02-PSS	3	UNT to Marsh Creek	0.65 0.75 0.70 0.65	2	0.207	0.037	0.092	-
S05	4	UNT to Marsh Creek	0.80	2	0.138	-	-	-
S06 S07 W04-PEM W04-PFO	5	UNT to North Branch Cowanesque River	1.85 1.85 1.84 1.84	3	0.091	0.050	-	0.119
S08	6	UNT to North Branch Cowanesque River	1.90	3	0.121	-	-	-
S09 S10 W05-PEM	7	UNT to North Branch Cowanesque River	1.98 1.98 1.95	3	0.218	0.027	-	-
S11 S12 S13 W06-PEM W06-PSS	8	UNT to North Branch Cowanesque River, North Branch	2.18 2.20 2.25 2.19 2.16	4	0.001	0.023	0.360	-
S14 W07-PEM W07-PFO	9	UNT to North Branch Cowanesque River	2.70 2.72 2.72	5	0.063	0.057	-	<0.0001

Stream / Wetland Number	Assigned Planting Area No.	Stream Name	Approx. Resource Milepost	Appendix A: Figure Page No.	Planted Riparian Areas (acres)			
					Upland Riparian	Wetland Riparian		
						PEM	PSS	PFO
S15	10	UNT to North Branch Cowanesque River	3.30	6	0.129	-	-	-
S16 W08-PEM	11	UNT to North Branch Cowanesque River	3.40 3.38	6	0.120	0.030	-	-
Tioga County								
S17	12	North Fork Cowanesque River	2.10	7	0.08	-	-	-
S18a	13	UNT to North Fork of Cowanesque River	2.27	7	0.138	-	-	-
S19 W14-PEM	14	UNT to North Fork of Cowanesque River	3.00 3.16	8	0.044	0.006	-	-
S20 W15-PEM	15	North Fork Cowanesque River	3.25 3.25	8	0.143	0.013	-	-
S21 W60-PEM	16	UNT to North Fork of Cowanesque River	3.68 3.68	9	0.068	0.029	-	-
S23	17	UNT to North Fork of Cowanesque River	4.30	10	0.127	-	-	-
S24 W17-PEM W17-PSS W17-PFO	18	UNT to North Fork of Cowanesque River	4.57 4.54 4.55 4.58	11	0.048	0.170	0.130	0.036
S28	19	UNT to California Brook	5.34	12	0.073	-	-	-
S29	20	UNT to California Brook	6.40	13	0.147	-	-	-
S30	21	UNT to California Brook	6.45	13	0.111	-	-	-
S62 W55-PFO	22	UNT to Cowanesque River	9.56 9.56	14	0.066	-	-	0.108
S36	23	Jemison Creek	12.24	15	0.130	-	-	-
S39	24	UNT to Jemison Creek	12.05	15	0.154	-	-	-
S40	25	Boatman Brook	14.81	16	0.121	-	-	-
S41	26	UNT to Crooked Creek	15.24	17	0.122	-	-	-
S45 W38-PEM	27	UNT to Crooked Creek	16.50 16.48	18	0.010	0.017	-	-
S47	28	UNT to Crooked Creek	17.04	19	0.044	-	-	-
S48 S49 W40-PFO	29	UNT to Crooked Creek	17.18 17.2 17.16	20	0.163	-	-	0.080
S50 S51 W41-PEM	30	UNT to Crooked Creek	17.50 17.50 17.50	21	0.107	0.009	-	-

Stream / Wetland Number	Assigned Planting Area No.	Stream Name	Approx. Resource Milepost	Appendix A: Figure Page No.	Planted Riparian Areas (acres)			
					Upland Riparian	Wetland Riparian		
						PEM	PSS	PFO
S52 W42-PEM W42-PFO	31	UNT to Crooked Creek	18.32 18.30 18.30	22	0.016	0.043	-	0.123
Totals					**3.142**	**0.538**	**0.792**	**0.466**
Project Total					**4.938**			

3.0 PLANTING PLAN

As previously stated, the riparian area of 39 streams will be planted with trees/shrubs following completion of construction activities associated with the Tioga Project. These plantings will be completed in accordance with methods and specifications outlined in the *Pennsylvania Bureau of Forestry Planting and Seeding Guidelines* (Pennsylvania Department of Conservation and Natural Resources 2024), to the extent possible. Existing tree and shrub species were identified during site-specific surveys and this data was utilized to inform the selection process of native and indigenous species suitable to re-establish the approximately 4.938 acres of riparian areas identified in Table 1.

Table 2 provides a list of recommended species and sizes to be used as plantings in the riparian areas. If these species are not available at the time of planting, species with similar characteristics will be identified and the appropriate agencies notified prior to planting.

Table 2. Recommended Riparian Species and Planting Sizes

Common Name	Scientific Name	Indicator Status[1]	Recommended Planting Size
Trees			
Red maple[2]	*Acer rubrum*	FAC	1 Gallon (24” to <36”)
Silver maple[2]	*Acer saccharinum*	FACW	2 Gallon (24” to 48”)
Black willow[2]	*Salix nigra*	OBL	Tubeling (18”) or live stakes
Quaking aspen[2]	*Populus tremuloides*	FACU	1 to 2 Gallon (12” to 24”)
Northern red oak[2]	*Quercus rubra*	FACU	2 Gallon (24” to 36”)
Eastern hemlock[2]	*Tsuga canadensis*	FACU	1 Gallon (12” to 24”)
Shagbark hickory[2]	*Carya ovata*	FACU	1 Gallon (8” to 12”)
Yellow birch[2]	*Betula alleghaniensis*	FAC	2 Gallon (48”)
Shrubs			
Brookside alder	*Alnus serrulata*	OBL	2 to 3 Gallon (60” to 72”)
Black cherry[2]	*Prunus serotina*	FACU	1 to 2 Gallon (12” to 24”)
Gray dogwood[2,4]	*Cornus racemosa*	FAC	1 Gallon (12” to 24”)
Northern spicebush	*Lindera benzoin*	FAC	3 to 5 Gallon (minimum 5’)
Nanny-berry[2]	*Viburnum lentago*	FAC	1 Gallon (12” to 24”)
Witch hazel[2]	*Hamamelis virginiana*	FACU	2 Gallon (12” to 24”)

Common Name	Scientific Name	Indicator Status[1]	Recommended Planting Size
Southern arrow-wood	*Virburnum dentatum*	FAC	1 Gallon (12" minimum)
Highbush Blueberry[2]	*Vaccinium corrymbosum*	FACW	1 Gallon (24" to <36")
Silky Dogwood[2,3]	*Cornus amomum*	FACW	1 Gallon (12" to 24")[3]

Notes:
[1] FAC = facultative, FACW = facultative wetland, FACU-facultative upland, OBL=obligate (wetland)
[2] Identified in site-specific surveys
[3] If containers are not available, live stakes can be used at double the proposed number of plants in Table 3.
[4] Species can be substituted with American hornbeam (*Carpinus caroliniana*).

Upland riparian areas will be planted with species that have an indicator status of FACU and FAC, and wetland areas will be planted with species that have an indicator status of OBL, FACW, and FAC. It is recommended that the selected tree/shrub species composition and spacing should mimic the natural, pre-existing conditions and/or immediately adjacent areas, to the extent possible. For example, if the riparian area currently supports a scrub-shrub cover dominated by just two species, the species selected for planting should primarily be shrubs of the same or similar species, whenever possible. Similarly, a forested riparian area should be planted with the same or similar tree species for the overstory and shrub species for the understory, whenever possible.

Spacing of individual plants will generally be based on a goal density of 350 stems per acre but should be conducted so as to maintain consistent aerial canopy coverage and provide adequate sun exposure as the plants grow and mature, while considering natural loss of plants. However, final spacing and placement of the plantings may be determined in the field by a trained professional. Specifically, plantings may be relocated to locations with more suitable hydrology and soils, and where appropriate structural context with other plantings can be maintained. Trees/shrubs are anticipated to be planted in the fall of 2026 following completion of construction activities and stabilization of the LOD.

Table 3 identifies the species and number of plants of each species proposed at the various planting areas. In addition, this information is presented in Appendix A on the Riparian Planting Area Figure.

Table 3. Proposed Tree/Shrub Species and Numbers at Each Planting Area

Planting Area No.	Resource Area	Planting Area (Acres)		Planted Riparian Areas			
		Upland	Wetland	Upland Species & Number of Plants		Wetland Species & Number of Plants	
Potter County							
1	S73z W01z-PEM	0.104	0.027	Red maple Black cherry Quaking aspen	12 8 16	Silver maple Black willow Silky dogwood Brookside alder	2 10 4 3
2	S01 S02 W01-PSS	0.038	0.21	Red maple Quaking aspen Northern red oak Witch hazel	3 3 3 4	Nanny-berry Black willow Silky dogwood Gray dogwood	14 15 22 22

Planting Area No.	Resource Area	Planting Area (Acres)		Planted Riparian Areas			
		Upland	Wetland	Upland Species & Number of Plants		Wetland Species & Number of Plants	
3	S03 S04 W02-PEM W02-PSS	0.207	0.129	Red maple Quaking aspen Northern red oak Black cherry Witch hazel	25 20 15 7 5	Nanny-berry Black willow Silky dogwood Gray dogwood	5 25 12 12
4	S05	0.138	0	Eastern hemlock Shagbark hickory Yellow birch Black cherry Northern spicebush	15 15 8 5 5	Not Applicable	
5	S06 S07 W04-PEM W04-PFO	0.091	0.169	Eastern hemlock Red maple Shagbark hickory Black cherry Northern red oak	10 6 5 5 5	Black willow Red maple Northern spicebush Brookside alder	30 25 10 5
6	S08	0.121	0	Eastern hemlock Shagbark hickory	25 17	Not Applicable	
7	S09 S10 W05-PEM	0.218	0.027	Eastern hemlock Red maple Northern red oak	40 18 18	Silver maple Yellow birch	6 3
8	S11 S12 S13 W06-PEM W06-PSS	0.001	0.383	Gray dogwood	2	Red Maple Black willow Nanny-berry Gray dogwood	34 34 33 33
9	S14 W07-PEM W07-PFO	0.063	0.057	Red maple Black cherry Yellow birch Gray dogwood	6 2 4 10	Red maple Silver maple Black willow Gray dogwood	2 5 10 9
10	S15	0.129	0	Eastern hemlock Shagbark hickory Black cherry	19 18 10	Not Applicable	
11	S16 W08-PEM	0.12	0.03	Eastern hemlock Red maple Witch hazel Gray dogwood	15 8 4 15	Black willow Gray dogwood Silky dogwood	10 4 4
Tioga County							
12	S17	0.08	0	Shagbark hickory Red maple Northern red oak Northern spicebush	6 10 10 2	Not Applicable	

Planting Area No.	Resource Area	Planting Area (Acres)		Planted Riparian Areas			
		Upland	Wetland	Upland Species & Number of Plants		Wetland Species & Number of Plants	
13	S18a	0.138	0	Eastern hemlock Shagbark hickory Red maple Northern red oak Northern spicebush	14 10 10 10 4	Not Applicable	
14	S19 W14-PEM	0.044	0.006	Red maple Witch hazel Gray dogwood	5 5 5	Silky dogwood Gray dogwood	2 2
15	S20 W15-PEM	0.143	0.013	Yellow birch Gray dogwood Northern spicebush	13 25 12	Black willow Silver maple Southern arrow-wood	10 2 3
16	S21 W60-PEM	0.068	0.029	Red maple Northern red oak Witch hazel	10 10 4	Silky dogwood Silver maple Brookside alder	4 2 4
17	S23	0.127	0	Shagbark hickory Red maple Northern red oak	10 17 17	Not Applicable	
18	S24 W17-PEM W17-PSS W17-PFO	0.048	0.336	Nanny-berry Gray dogwood Quaking aspen	2 9 6	Brookside alder Black willow Nanny-berry Gray dogwood	45 20 12 46
19	S28	0.073	0	Yellow birch Gray dogwood Northern spicebush	6 15 5	Not Applicable	
20	S29	0.147	0	Northern red oak Red maple Shagbark hickory Northern spicebush Witch hazel	18 18 8 4 4	Not Applicable	
21	S30	0.111	0	Northern red oak Red maple Shagbark hickory Northern spicebush Witch hazel	12 12 7 4 4	Not Applicable	
22	S62 W55-PFO	0.066	0.108	Red maple Northern red oak Northern spicebush Gray dogwood	7 7 2 7	Black willow Silver maple Silky dogwood Brookside alder	20 10 10 10
23	S39	0.154	0	Red maple Northern red oak Quaking aspen	18 18 18	Not Applicable	
24	S36	0.13	0	Red maple Northern red oak Quaking aspen	15 15 15	Not Applicable	

Planting Area No.	Resource Area	Planting Area (Acres)		Planted Riparian Areas			
		Upland	Wetland	Upland Species & Number of Plants		Wetland Species & Number of Plants	
25	S40	0.121	0	Gray dogwood Red maple Shagbark hickory Northern spicebush	15 15 8 4	Not Applicable	
26	S41	0.122	0	Gray dogwood Red maple Shagbark hickory Northern spicebush	15 15 8 4	Not Applicable	
27	S45 W38-PEM	0.01	0.017	Gray dogwood Red maple Northern red oak Yellow birch	1 1 1 1	Black willow Brookside alder Silky dogwood Southern arrow-wood	10 1 2 2
28	S47	0.044	0	Gray dogwood Red maple Shagbark hickory Northern spicebush	5 4 4 2	Not Applicable	
29	S48 S49 W40-PFO	0.163	0.08	Eastern hemlock Red maple	20 37	Silver maple Black willow	14 15
30	S50 S51 W41-PEM	0.107	0.009	Eastern hemlock Red maple Gray dogwood	13 12 12	Silver maple Black willow	1 10
31	S52 W42-PEM W42-PFO	0.016	0.166	Eastern hemlock Red maple Witch hazel	2 2 2	Red maple Yellow birch Brookside alder	25 25 10

Installation of plant materials, including protective fencing, will be conducted in accordance with the specifications provided in the detail drawings below. Other recommended planting measures include, but are not limited to:

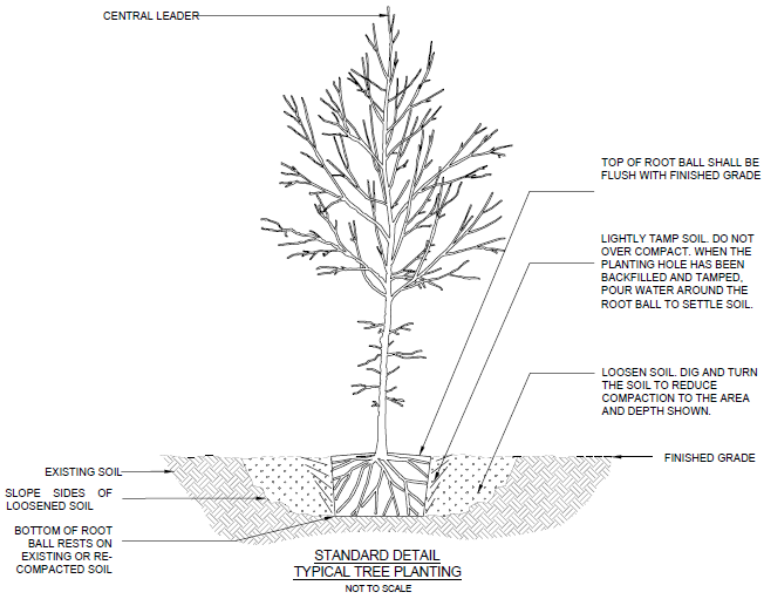
Container Growth Material

- Planting holes shall be at least twice the diameter of the container and dug to the same depth as the container in which they are grown. Do not remove plant material from container until immediately before installation. Examine the roots to see if they are pot bound. Carefully separate any pot bound or cramped roots and spread them out when placing the plant within the hole so that the roots can grow without further constriction of the root ball.
- Set plant materials plumb and centered within hole, ensuring that the top of the root ball is flush with surrounding grade. Backfill around root ball with suitable native soil, maintaining plumb, and gently tamping backfill layers to eliminate voids. Water to the point of soil saturation.
- Following the backfilling, add existing soil to bring the final grade in the planting hole to the surrounding soil surface. Rake the unused existing soil outside the planting hole, taking care not to mound the soil or to significantly alter the existing grades.

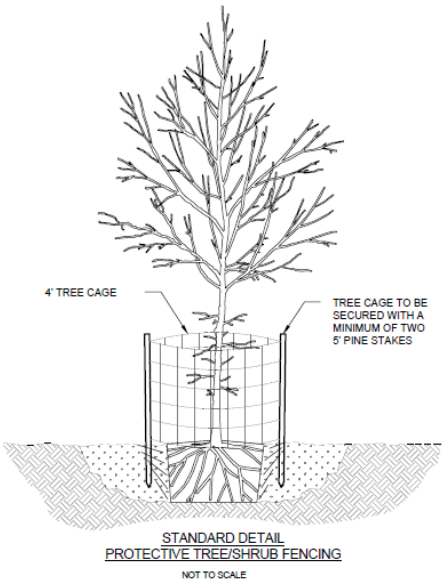
Live Stake Material

- Live stake material shall be kept moist according to manufactures recommendations. Do not allow the live stakes to dry out prior to installation.
- The use of a punch/planting bar, auger, rebar, or water-jet may be used to pre-drill hole if necessary. Tamp soil around stake following install.
- All live stakes are to be installed along stream banks, pools, and floodplain pools based upon spacing indicated in the planting plan species list.

Typical Tree/Shrub Planting Detail



Typical Protective Fencing Detail



4.0 MONITORING

As part of their voluntary riparian planting plan, National Fuel is proposing to conduct annual post-construction monitoring for a maximum of three years to document the successful restoration of the planted riparian buffers. If post-construction monitoring finds that corrective action is warranted National Fuel would implement such actions where needed.

5.0 SOURCES

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APPENDIX A: RIPARIAN PLANTING AREA FIGURE

Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants	
1	Red maple	12	Silver maple	2
	Black cherry	8	Black willow	10
	Quaking aspen	16	Silky dogwood	4
			Brookside alder	3

Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants	
2	Red maple	3	Nanny-berry	14
	Quaking aspen	3	Black willow	15
	Northern red oak	3	Silky dogwood	22
	Witch Hazel	4	Gray dogwood	22

Legend

- Milepost
- Limit of Disturbance
- Pipeline Centerline
- Intermittent Stream
- Perennial Stream

Wetland Classification
- PEM
- PSS

Planting Type
- Wetland Riparian
- Upland Riparian

All dimensions are measured in feet

Figure S4.B
Tioga Pathway Project
Riparian Planting Areas
S01, S02, S73z
Potter County, Pennsylvania

Prepared For: National Fuel Gas Supply Corporation

Prepared By: TETRA TECH

Feet: 0 50 100 200

Basemap: ESRI, USGS Topographic (2023)

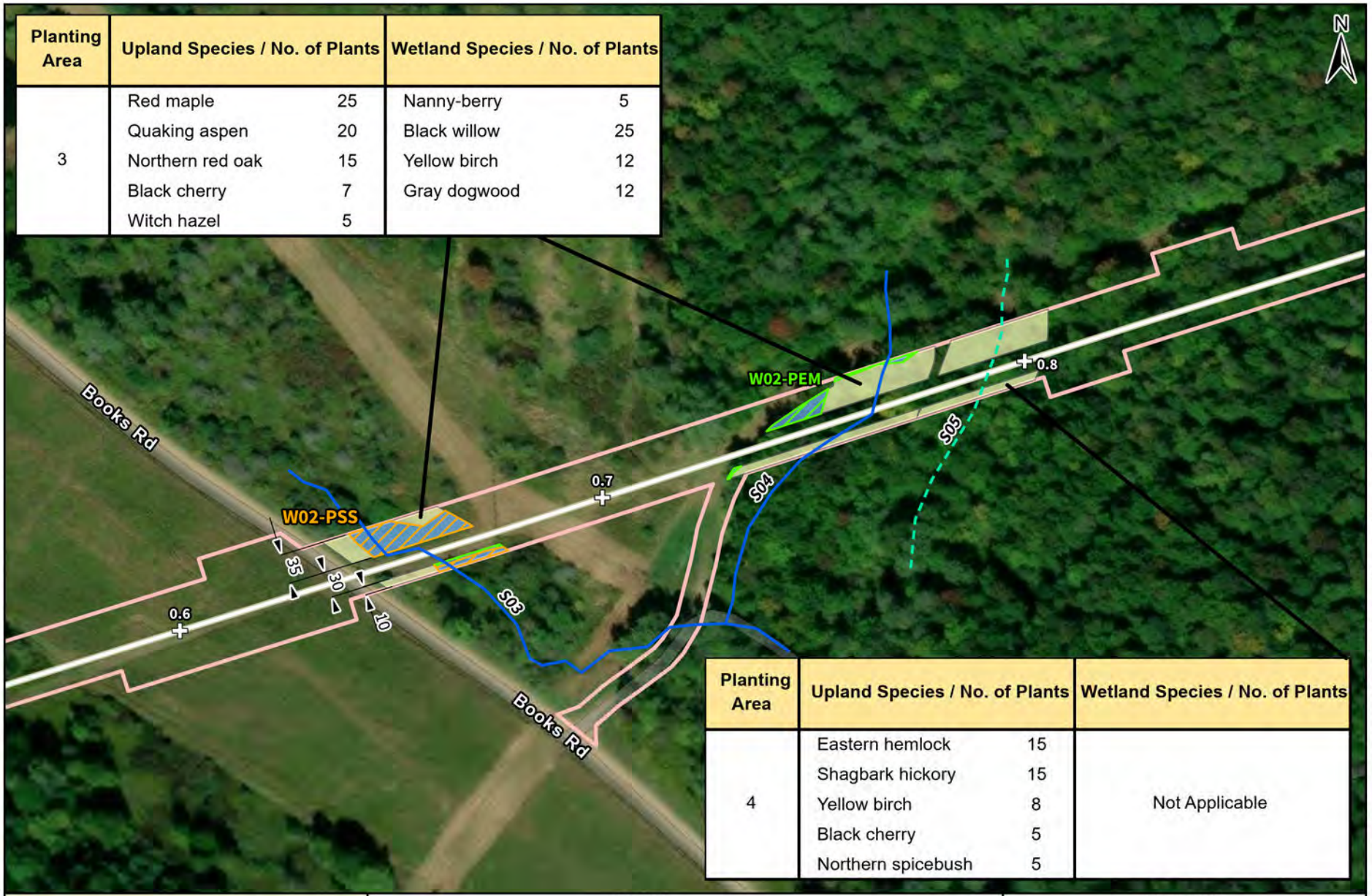
Meters: 0 15 30 60

Cartographer: JULIE.GIBSON

NOT FOR CONSTRUCTION

Date: 6/19/2025 5:24 PM

Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants	
3	Red maple	25	Nanny-berry	5
	Quaking aspen	20	Black willow	25
	Northern red oak	15	Yellow birch	12
	Black cherry	7	Gray dogwood	12
	Witch hazel	5		



Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants
4	Eastern hemlock	15	Not Applicable
	Shagbark hickory	15	
	Yellow birch	8	
	Black cherry	5	
	Northern spicebush	5	

Legend

- Milepost
- Limit of Disturbance
- Pipeline Centerline
- Ephemeral Stream
- Perennial Stream

Wetland Classification
- PEM
- PSS

Planting Type
- Wetland Riparian
- Upland Riparian

All dimensions are measured in feet

Figure S4.B
Tioga Pathway Project
Riparian Planting Areas
S03, S04, S05
Potter County, Pennsylvania

Prepared For: National Fuel Supply Corporation

Prepared By: TETRA TECH

Feet: 0 50 100 200

Basemap: ESRI, USGS Topographic (2023)

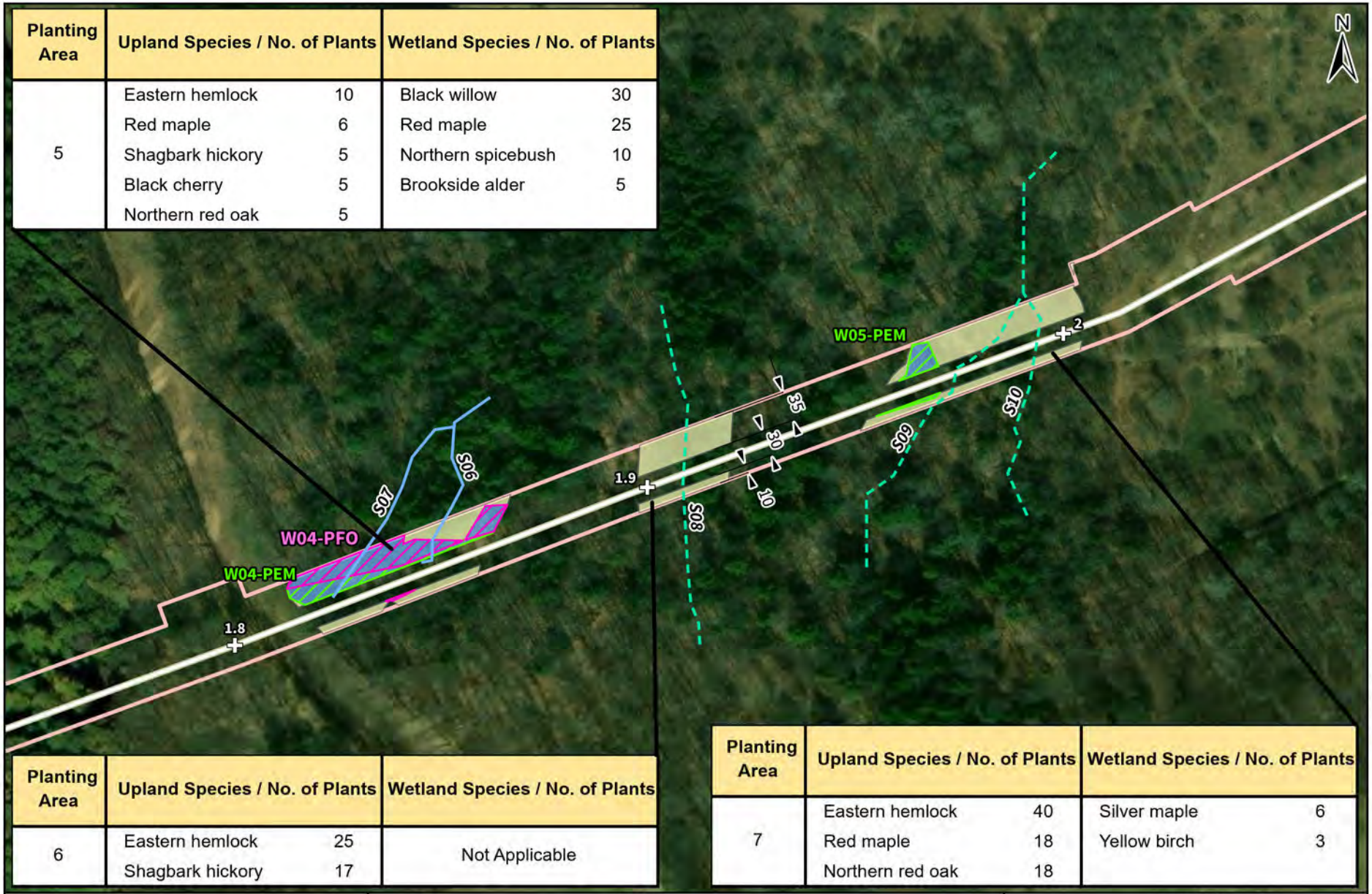
Meters: 0 15 30 60

Cartographer: JULIE.GIBSON

NOT FOR CONSTRUCTION

Date: 6/19/2025 5:24 PM

Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants	
5	Eastern hemlock	10	Black willow	30
	Red maple	6	Red maple	25
	Shagbark hickory	5	Northern spicebush	10
	Black cherry	5	Brookside alder	5
	Northern red oak	5		



Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants
6	Eastern hemlock	25	Not Applicable
	Shagbark hickory	17	

Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants	
7	Eastern hemlock	40	Silver maple	6
	Red maple	18	Yellow birch	3
	Northern red oak	18		

Legend

- Milepost
- Limit of Disturbance
- Pipeline Centerline
- Ephemeral Stream
- Intermittent Stream

Wetland Classification
- PEM
- PFO

Planting Type
- Wetland Riparian
- Upland Riparian

All dimensions are measured in feet

Feet: 0 50 100 200

Basemap: ESRI, USGS Topographic (2023)

Meters: 0 15 30 60

Figure S4.B
Tioga Pathway Project
Riparian Planting Areas
S06, S07, S08, S09, S10
Potter County, Pennsylvania

Prepared For: National Fuel Supply Corporation

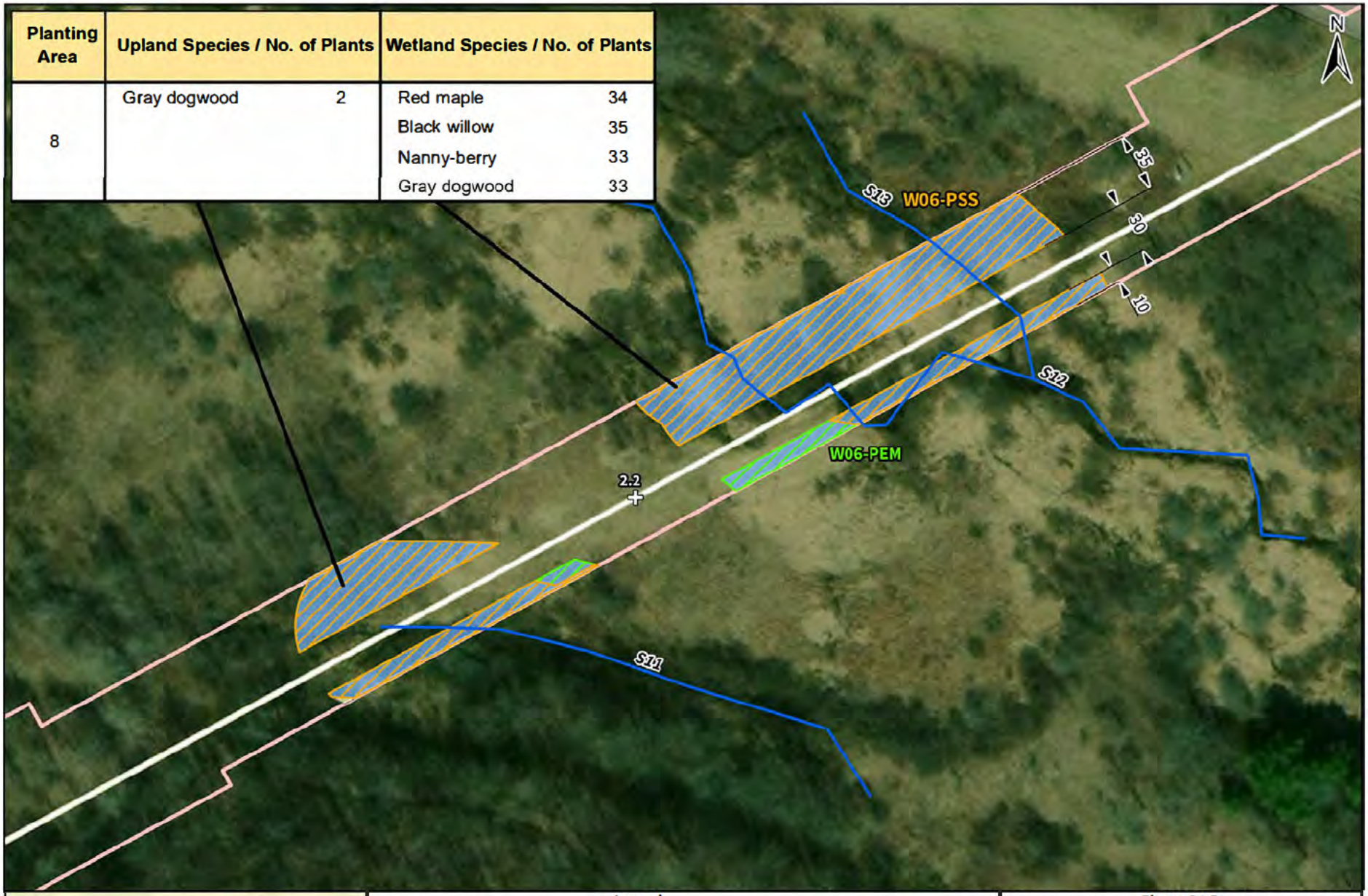
Prepared By: TETRA TECH

Cartographer: JULIE.GIBSON

NOT FOR CONSTRUCTION

Date: 6/19/2025 5:24 PM

Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants	
8	Gray dogwood	2	Red maple	34
			Black willow	35
			Nanny-berry	33
			Gray dogwood	33



Legend

- Milepost
- Limit of Disturbance
- Pipeline Centerline
- Perennial Stream

Wetland Classification
- PEM
- PSS

Planting Type
- Wetland Riparian
- Upland Riparian

All dimensions are measured in feet

Figure S4.B
Tioga Pathway Project
Riparian Planting Areas
S11, S12, S13
Potter County, Pennsylvania

Prepared For: National Fuel Supply Corporation

Prepared By: TETRA TECH

Feet: 0, 50, 100, 200

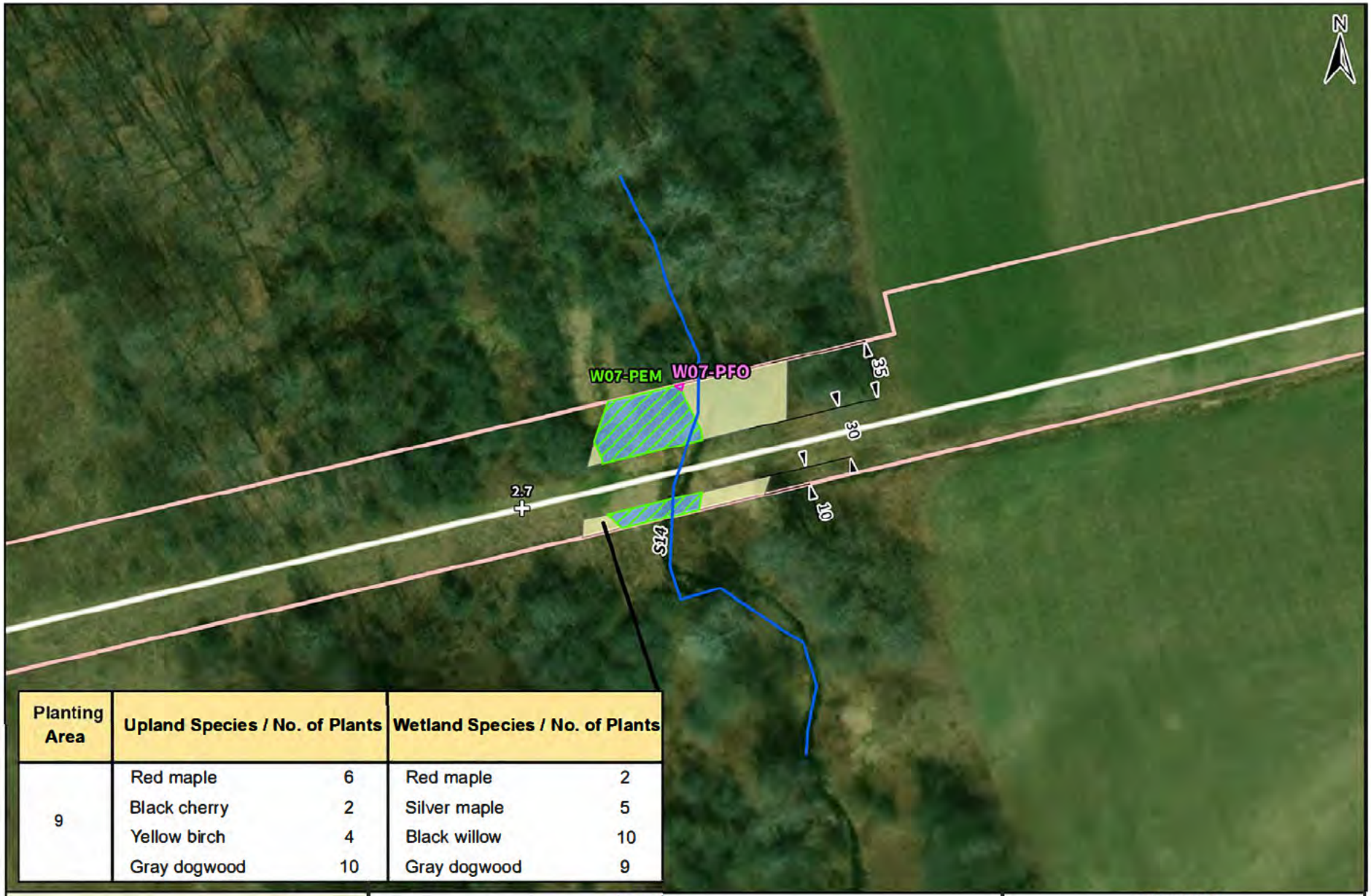
Basemap: ESRI, USGS Topographic (2023)

Meters: 0, 15, 30, 60

Cartographer: JULIE.GIBSON

NOT FOR CONSTRUCTION

Date: 6/19/2025 5:24 PM



Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants	
9	Red maple	6	Red maple	2
	Black cherry	2	Silver maple	5
	Yellow birch	4	Black willow	10
	Gray dogwood	10	Gray dogwood	9

Legend

- Milepost
- Limit of Disturbance
- Pipeline Centerline
- Perennial Stream

Wetland Classification
- PEM
- PFO

Planting Type
- Wetland Riparian
- Upland Riparian

All dimensions are measured in feet

Feet
0 50 100 200

Basemap: ESRI, USGS Topographic (2023)

Figure S4.B
Tioga Pathway Project
Riparian Planting Areas
S14
Potter County, Pennsylvania

Prepared For: National Fuel Supply Corporation

Prepared By: TETRA TECH

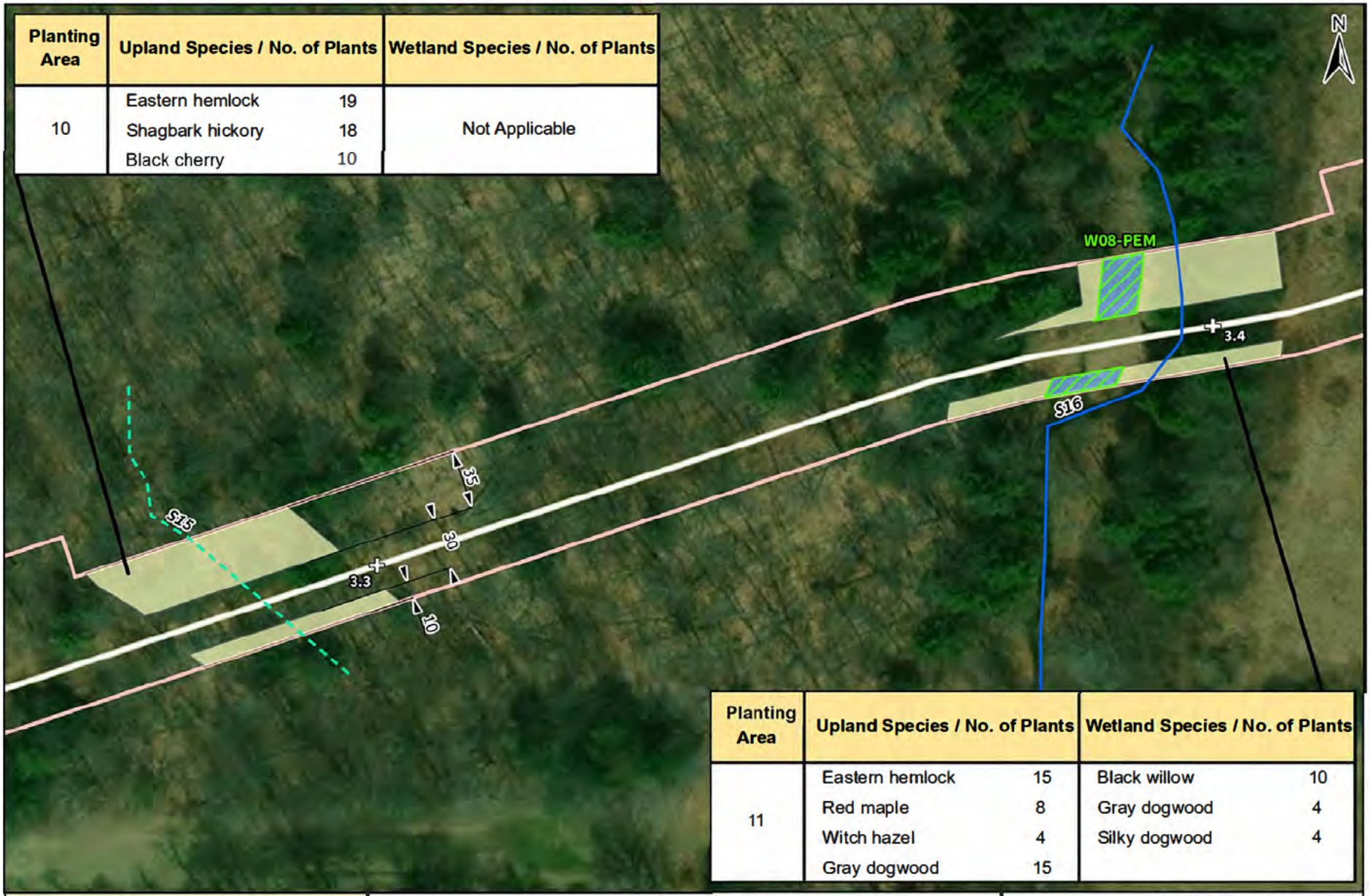
Meters
0 15 30 60

Cartographer: JULIE.GIBSON

NOT FOR CONSTRUCTION

Date: 6/19/2025 5:24 PM

Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants
10	Eastern hemlock	19	Not Applicable
	Shagbark hickory	18	
	Black cherry	10	



Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants	
11	Eastern hemlock	15	Black willow	10
	Red maple	8	Gray dogwood	4
	Witch hazel	4	Silky dogwood	4
	Gray dogwood	15		

Legend

- Milepost
- Limit of Disturbance
- Pipeline Centerline
- Ephemeral Stream
- Perennial Stream

Wetland Classification: PEM

Planting Type: Wetland Riparian; Upland Riparian

All dimensions are measured in feet

Feet: 0, 50, 100, 200

Basemap: ESRI, USGS Topographic (2023)

Meters: 0, 15, 30, 60

Figure S4.B
Tioga Pathway Project
Riparian Planting Areas
S15, S16
Potter County, Pennsylvania

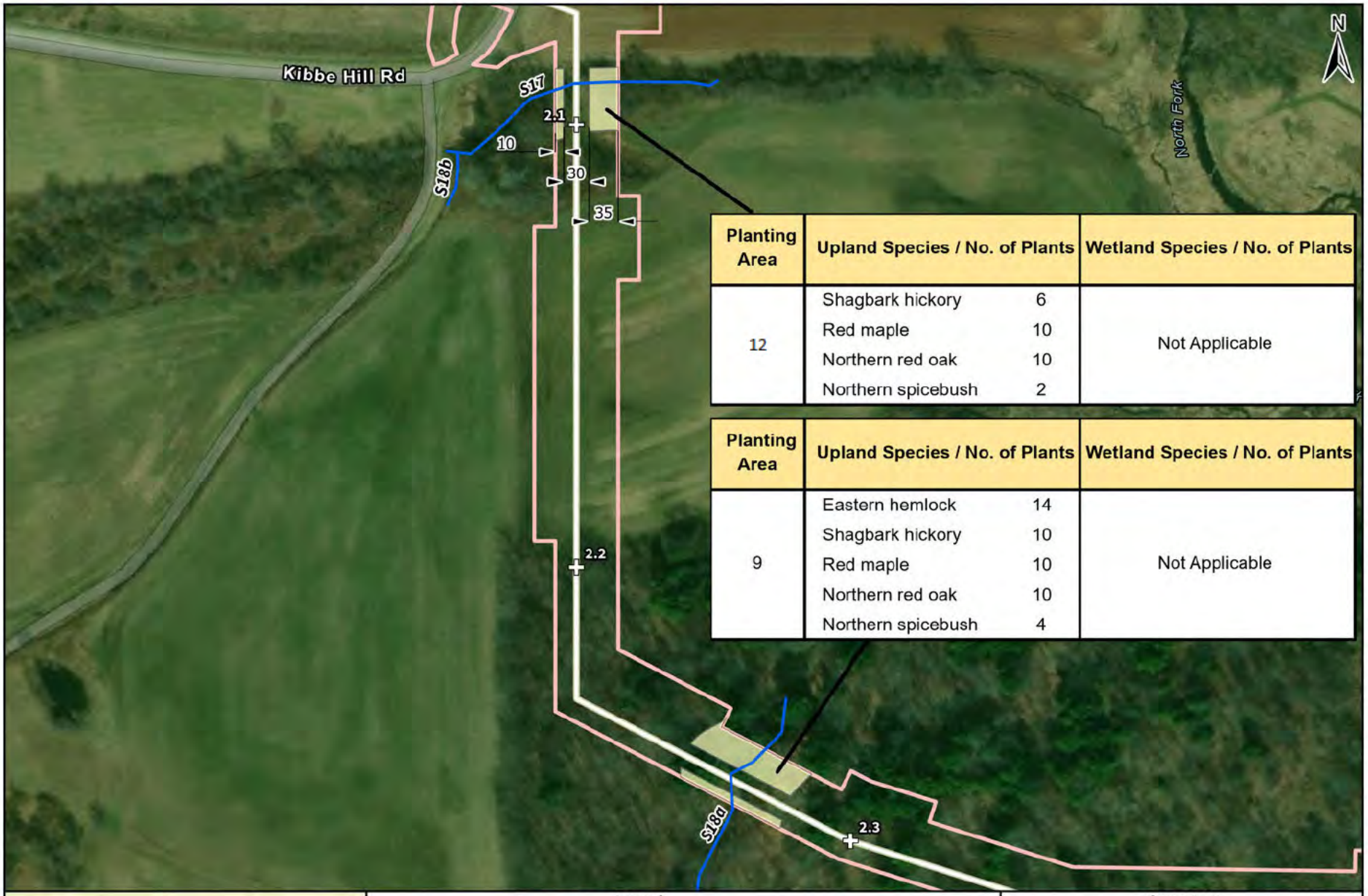
Prepared For: National Fuel Supply Corporation

Prepared By: TETRA TECH

Cartographer: JULIE.GIBSON

NOT FOR CONSTRUCTION

Date: 6/19/2025 5:24 PM



Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants
12	Shagbark hickory	6	Not Applicable
	Red maple	10	
	Northern red oak	10	
	Northern spicebush	2	

Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants
9	Eastern hemlock	14	Not Applicable
	Shagbark hickory	10	
	Red maple	10	
	Northern red oak	10	
	Northern spicebush	4	

Legend

- Milepost
- Limit of Disturbance
- Pipeline Centerline
- Perennial Stream

Planting Type

- Upland Riparian

All dimensions are measured in feet

Figure S4.B
Tioga Pathway Project
Riparian Planting Areas
S17, S18a
Potter County, Pennsylvania

Prepared For: National Fuel Supply Corporation

Prepared By: TETRA TECH

Feet: 0 50 100 200

Basemap: ESRI, USGS Topographic (2023)

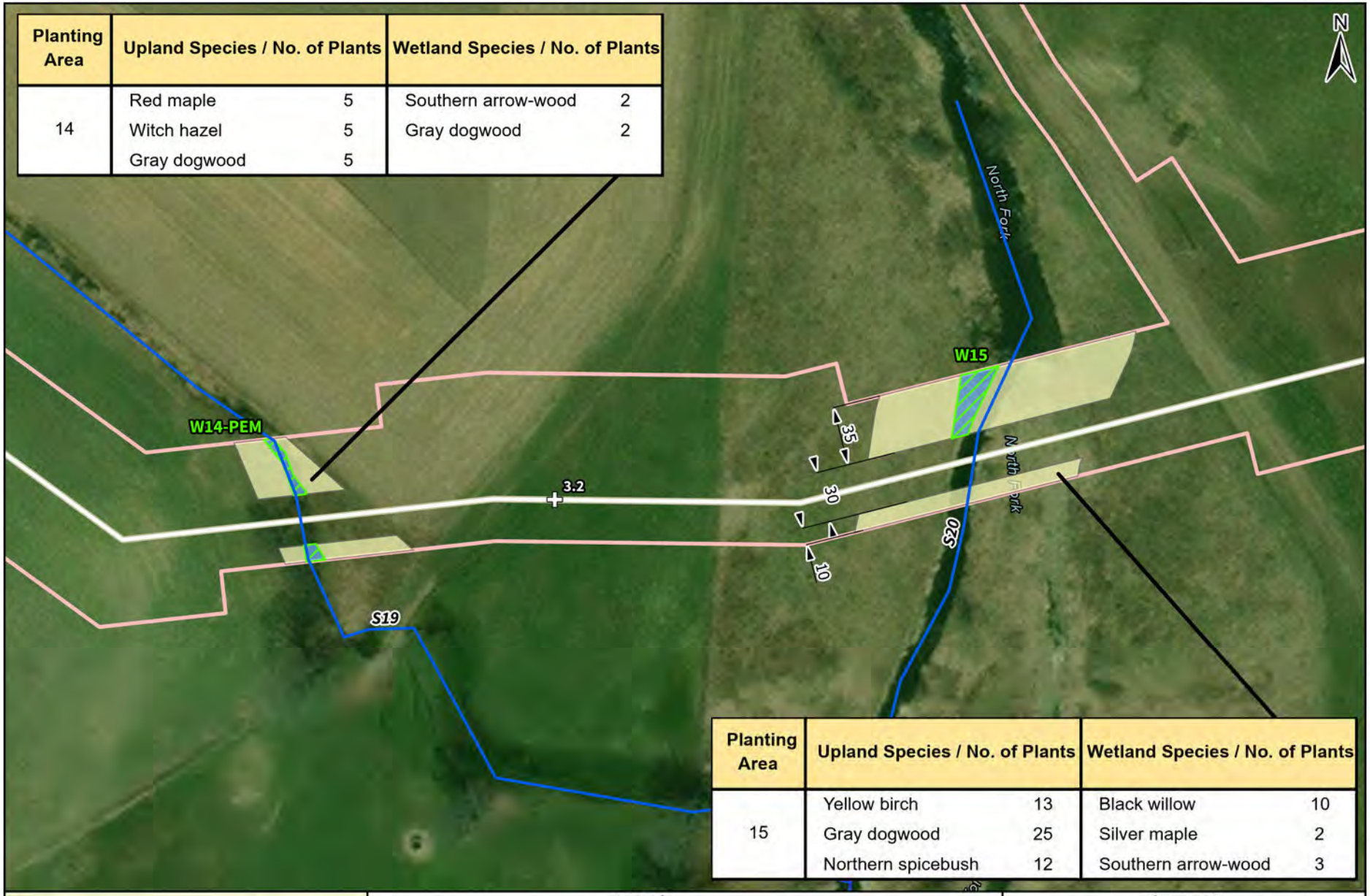
Meters: 0 15 30 60

Cartographer: JULIE.GIBSON

NOT FOR CONSTRUCTION

Date: 6/19/2025 5:24 PM

Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants	
14	Red maple	5	Southern arrow-wood	2
	Witch hazel	5	Gray dogwood	2
	Gray dogwood	5		



Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants	
15	Yellow birch	13	Black willow	10
	Gray dogwood	25	Silver maple	2
	Northern spicebush	12	Southern arrow-wood	3

Legend

- Milepost
- Limit of Disturbance
- Pipeline Centerline
- Perennial Stream

Wetland Classification
- PEM

Planting Type
- Wetland Riparian
- Upland Riparian

All dimensions are measured in feet

Feet: 0, 50, 100, 200

Basemap: ESRI, USGS Topographic (2023)

Meters: 0, 15, 30, 60

Figure S4.B
Tioga Pathway Project
Riparian Planting Areas
S19, S20
Tioga County, Pennsylvania

Prepared For: National Fuel Supply Corporation

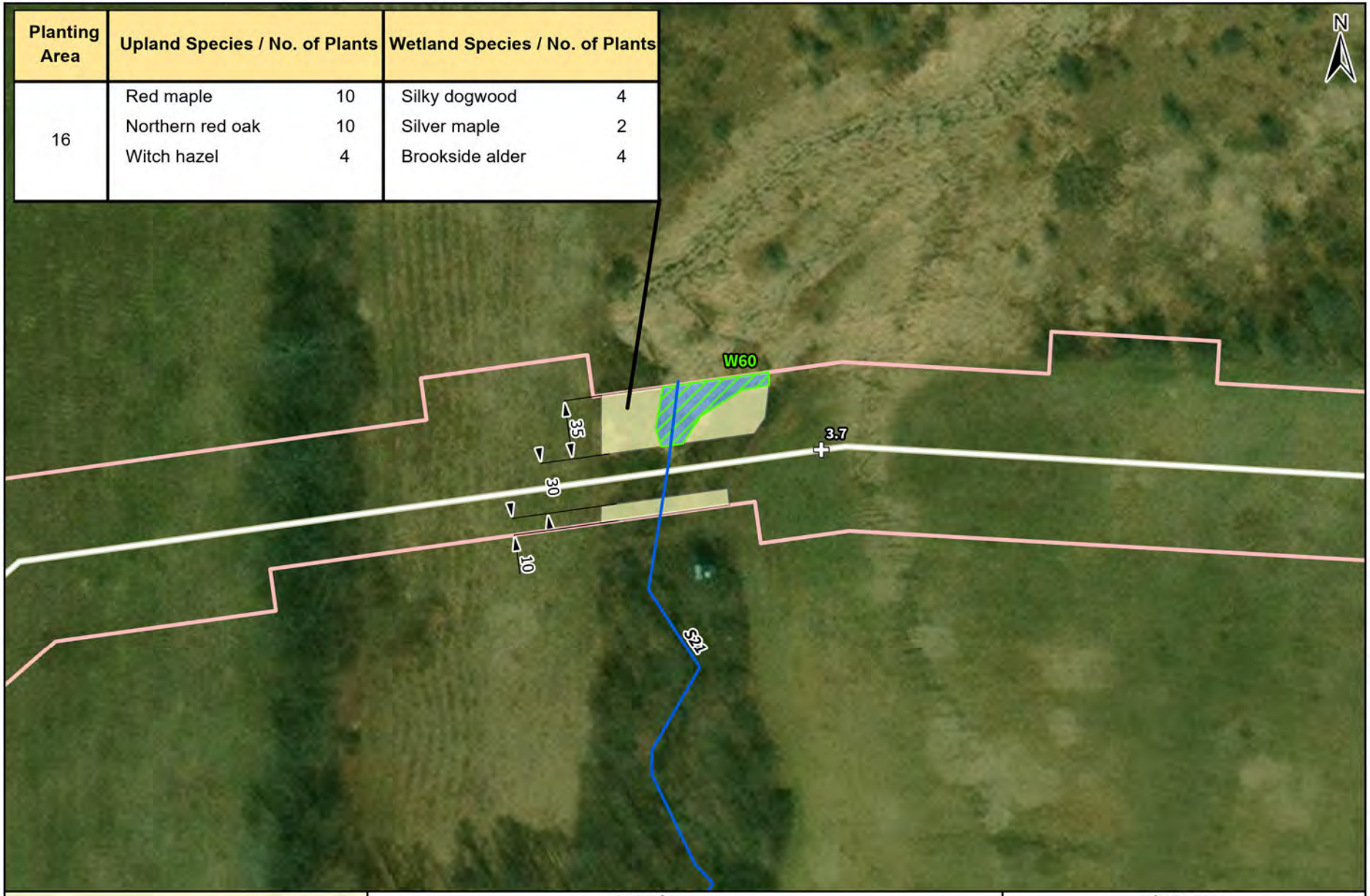
Prepared By: TETRA TECH

Cartographer: JULIE.GIBSON

NOT FOR CONSTRUCTION

Date: 6/19/2025 5:24 PM

Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants	
16	Red maple	10	Silky dogwood	4
	Northern red oak	10	Silver maple	2
	Witch hazel	4	Brookside alder	4



Legend

- Milepost
- Limit of Disturbance
- Pipeline Centerline
- Perennial Stream

Wetland Classification
- PEM

Planting Type
- Wetland Riparian
- Upland Riparian

All dimensions are measured in feet

Figure S4.B
Tioga Pathway Project
Riparian Planting Areas
S21
Tioga County, Pennsylvania

Prepared For: National Fuel Supply Corporation

Prepared By: TETRA TECH

Feet: 0 50 100 200

Basemap: ESRI, USGS Topographic (2023)

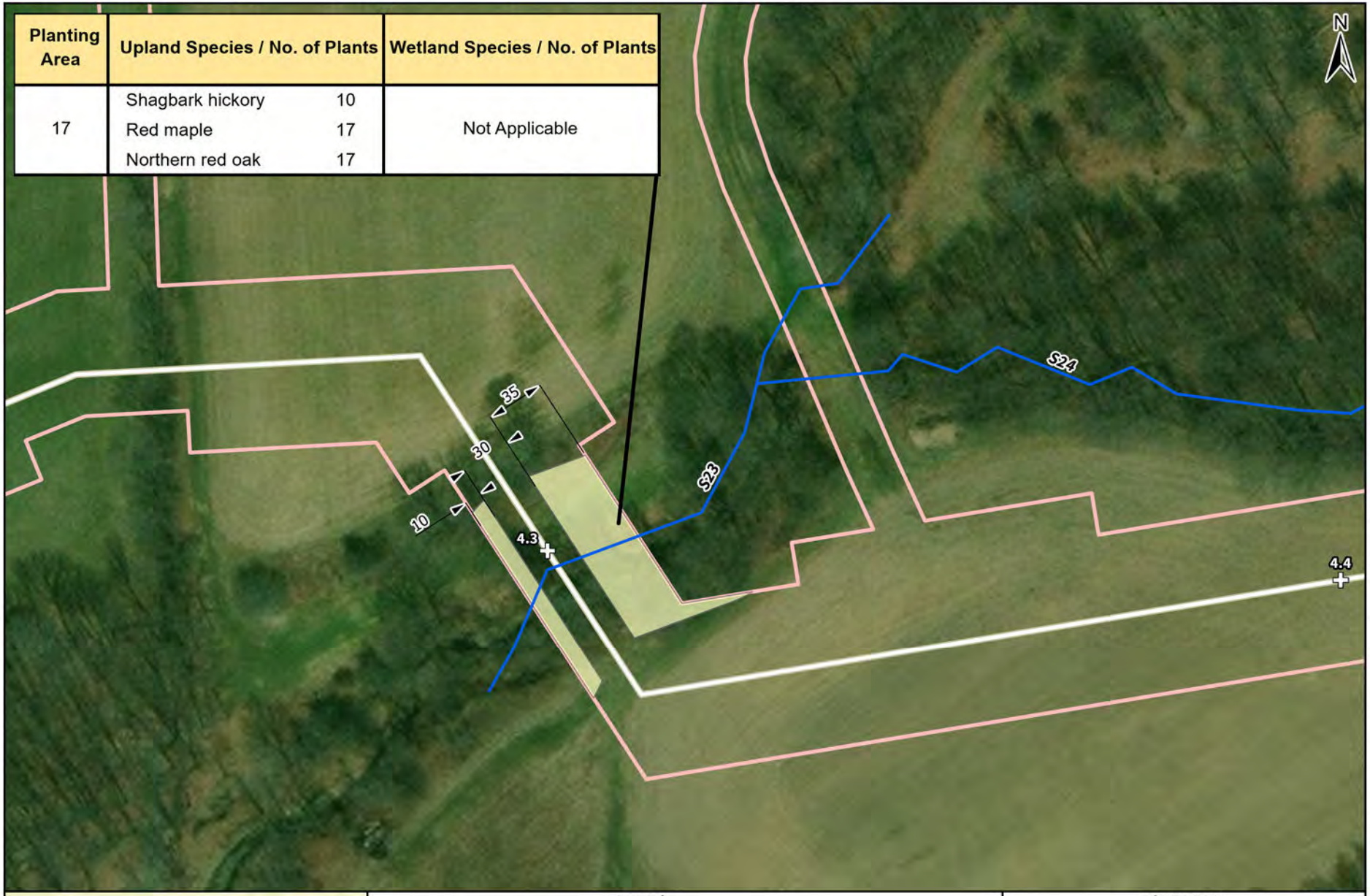
Meters: 0 15 30 60

Cartographer: JULIE.GIBSON

NOT FOR CONSTRUCTION

Date: 6/19/2025 5:24 PM

Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants
17	Shagbark hickory	10	Not Applicable
	Red maple	17	
	Northern red oak	17	



Legend

- Milepost
- Limit of Disturbance
- Pipeline Centerline
- Perennial Stream

Planting Type

- Upland Riparian

All dimensions are measured in feet

Figure S4.B
Tioga Pathway Project
Riparian Planting Areas
S23
Tioga County, Pennsylvania

Prepared For: National Fuel Supply Corporation

Prepared By: TETRA TECH

Page Number: 10 of 22

Feet: 0, 50, 100, 200

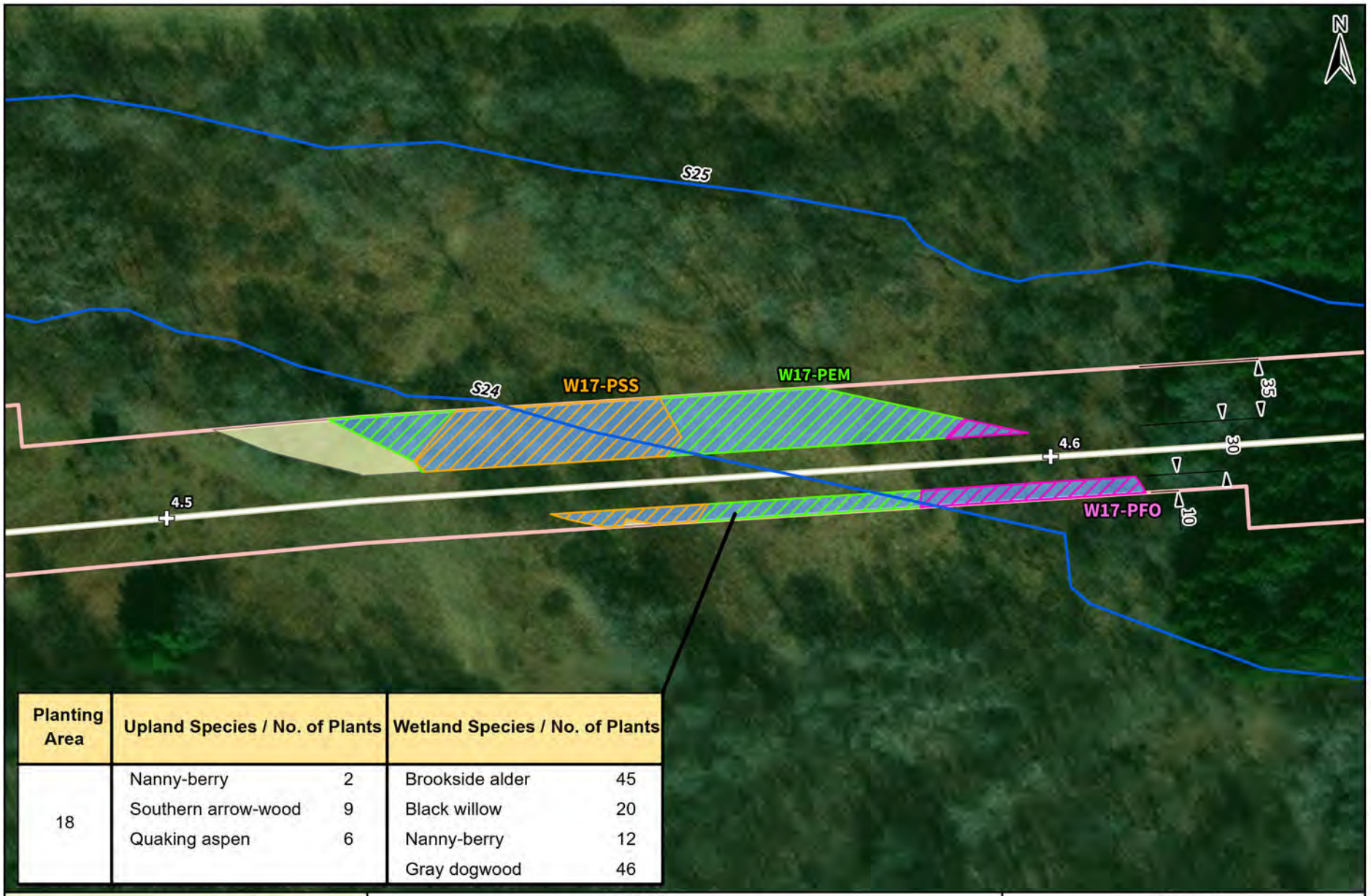
Basemap: ESRI, USGS Topographic (2023)

Meters: 0, 15, 30, 60

Cartographer: JULIE.GIBSON

NOT FOR CONSTRUCTION

Date: 6/19/2025 5:24 PM



Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants	
18	Nanny-berry	2	Brookside alder	45
	Southern arrow-wood	9	Black willow	20
	Quaking aspen	6	Nanny-berry	12
			Gray dogwood	46

Legend

- Milepost
- Limit of Disturbance
- Pipeline Centerline
- Perennial Stream

Wetland Classification
- PEM
- PFO
- PSS

Planting Type
- Wetland Riparian
- Upland Riparian

All dimensions are measured in feet

Feet: 0, 50, 100, 200

Basemap: ESRI, USGS Topographic (2023)

Meters: 0, 15, 30, 60

Figure S4.B
Tioga Pathway Project
Riparian Planting Areas
S24
Tioga County, Pennsylvania

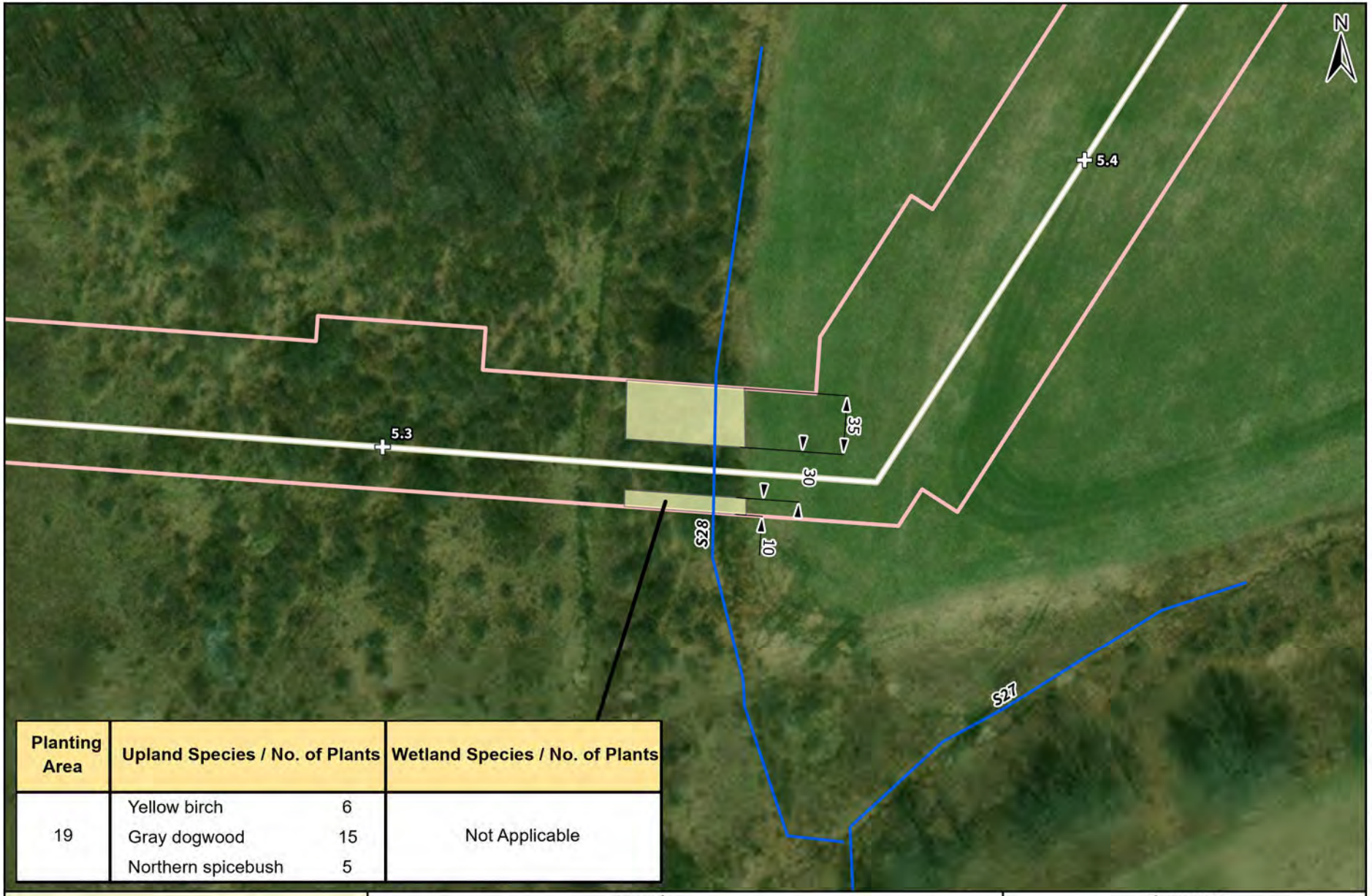
Prepared For: National Fuel Supply Corporation

Prepared By: TETRA TECH

Cartographer: JULIE.GIBSON

NOT FOR CONSTRUCTION

Date: 6/19/2025 5:24 PM



Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants
19	Yellow birch	6	Not Applicable
	Gray dogwood	15	
	Northern spicebush	5	

Legend

- Milepost
- Limit of Disturbance
- Pipeline Centerline
- Perennial Stream

Planting Type

- Upland Riparian

All dimensions are measured in feet

Feet: 0, 50, 100, 200

Basemap: ESRI, USGS Topographic (2023)

Meters: 0, 15, 30, 60

Figure S4.B
Tioga Pathway Project
Riparian Planting Areas
S28
Tioga County, Pennsylvania

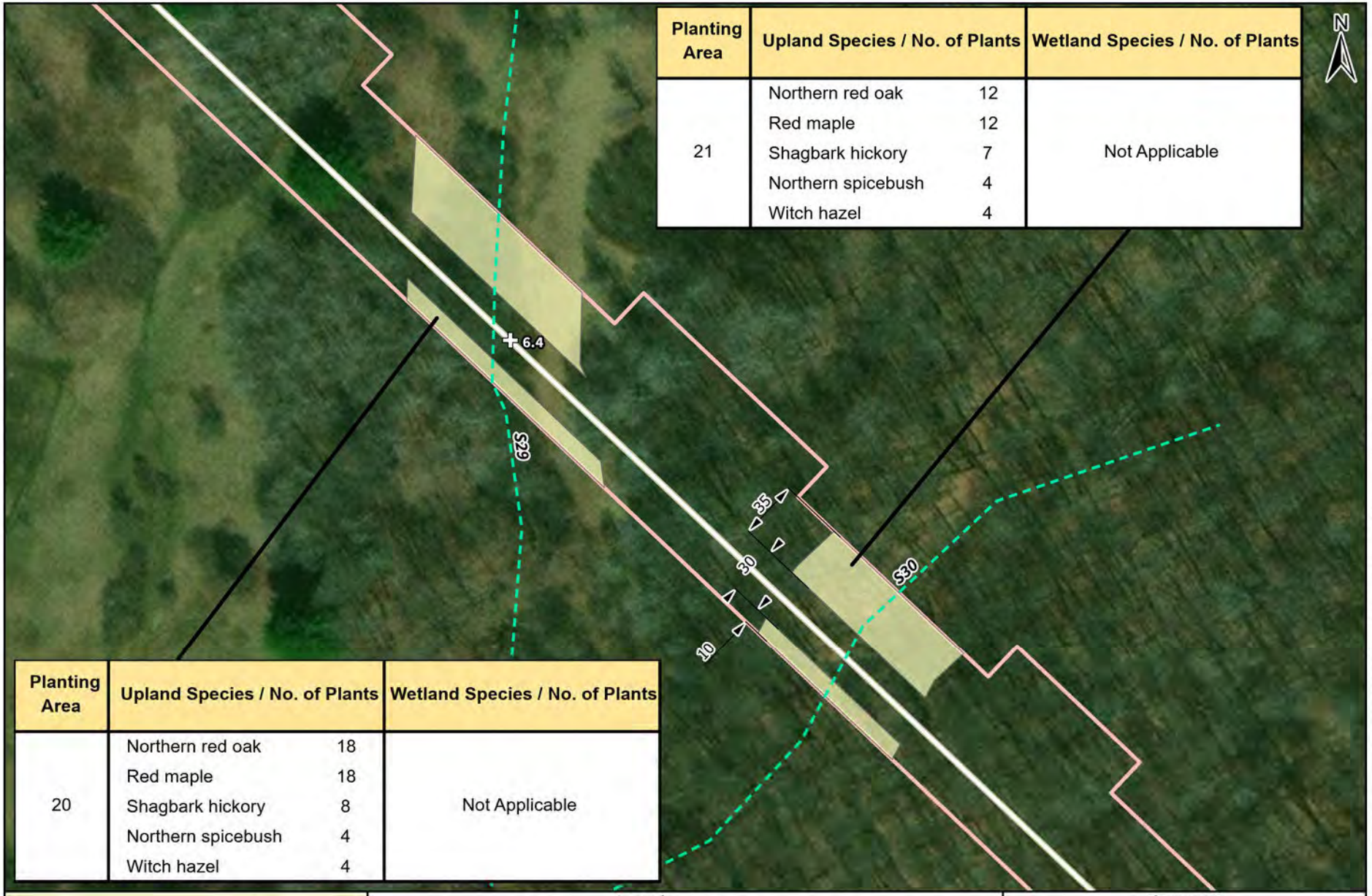
Prepared For: National Fuel Supply Corporation

Prepared By: TETRA TECH

Cartographer: JULIE.GIBSON

NOT FOR CONSTRUCTION

Date: 6/19/2025 5:24 PM



Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants
21	Northern red oak	12	Not Applicable
	Red maple	12	
	Shagbark hickory	7	
	Northern spicebush	4	
	Witch hazel	4	

Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants
20	Northern red oak	18	Not Applicable
	Red maple	18	
	Shagbark hickory	8	
	Northern spicebush	4	
	Witch hazel	4	

Legend

- Milepost
- Limit of Disturbance
- Pipeline Centerline
- Ephemeral Stream

Planting Type
- Upland Riparian

All dimensions are measured in feet

Feet
0 50 100 200

Basemap: ESRI, USGS Topographic (2023)

Meters
0 15 30 60

Figure S4.B
Tioga Pathway Project
Riparian Planting Areas
S29, S30
Tioga County, Pennsylvania

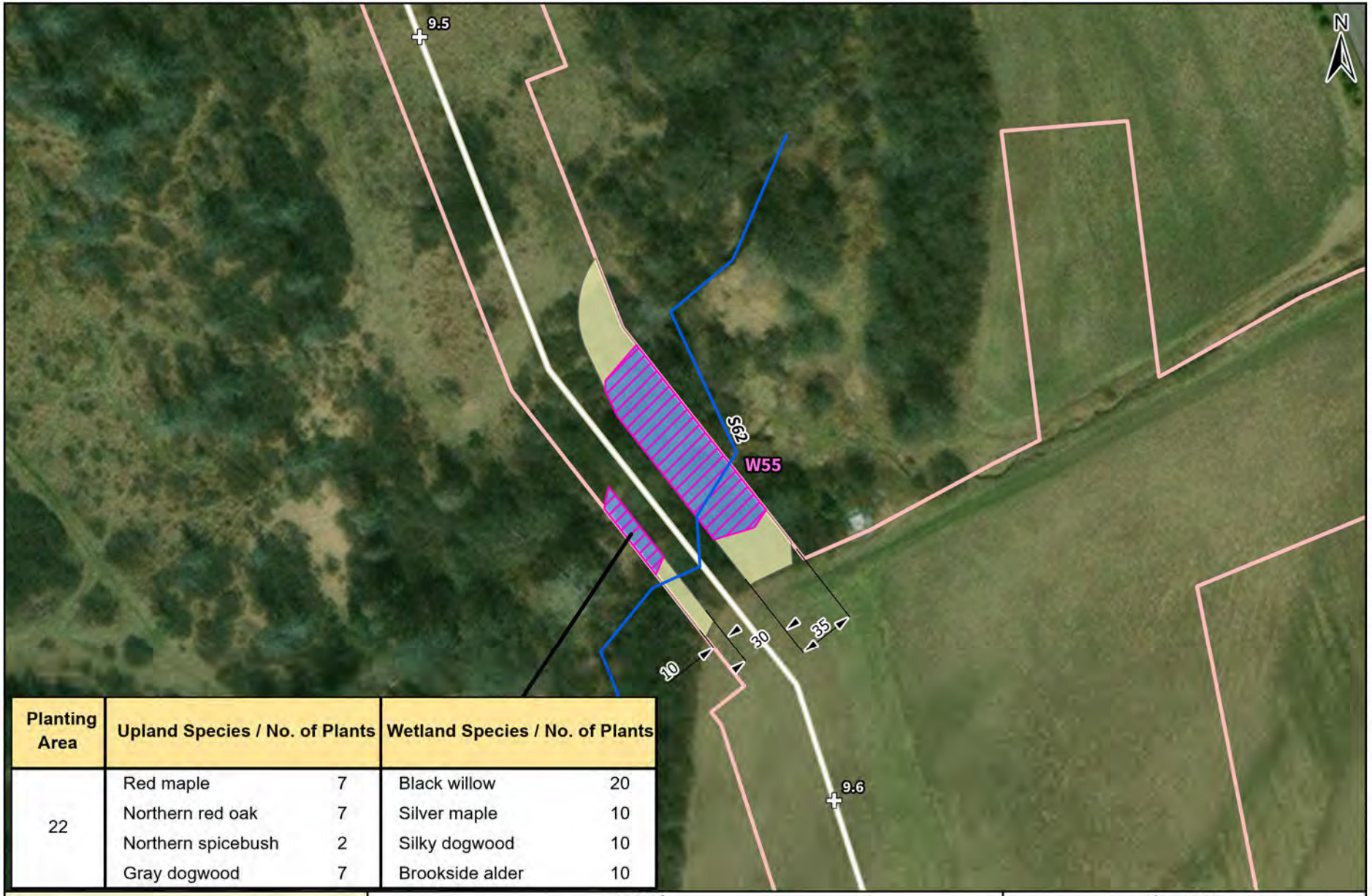
Prepared For: National Fuel Supply Corporation

Prepared By: TETRA TECH

Cartographer: JULIE.GIBSON

NOT FOR CONSTRUCTION

Date: 6/19/2025 5:24 PM



Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants	
22	Red maple	7	Black willow	20
	Northern red oak	7	Silver maple	10
	Northern spicebush	2	Silky dogwood	10
	Gray dogwood	7	Brookside alder	10

Legend

- Milepost
- Limit of Disturbance
- Pipeline Centerline
- Perennial Stream

Wetland Classification
- PFO

Planting Type
- Wetland Riparian
- Upland Riparian

All dimensions are measured in feet

Feet: 0, 50, 100, 200

Basemap: ESRI, USGS Topographic (2023)

Meters: 0, 15, 30, 60

Figure S4.B
Tioga Pathway Project
Riparian Planting Areas
S62
Tioga County, Pennsylvania

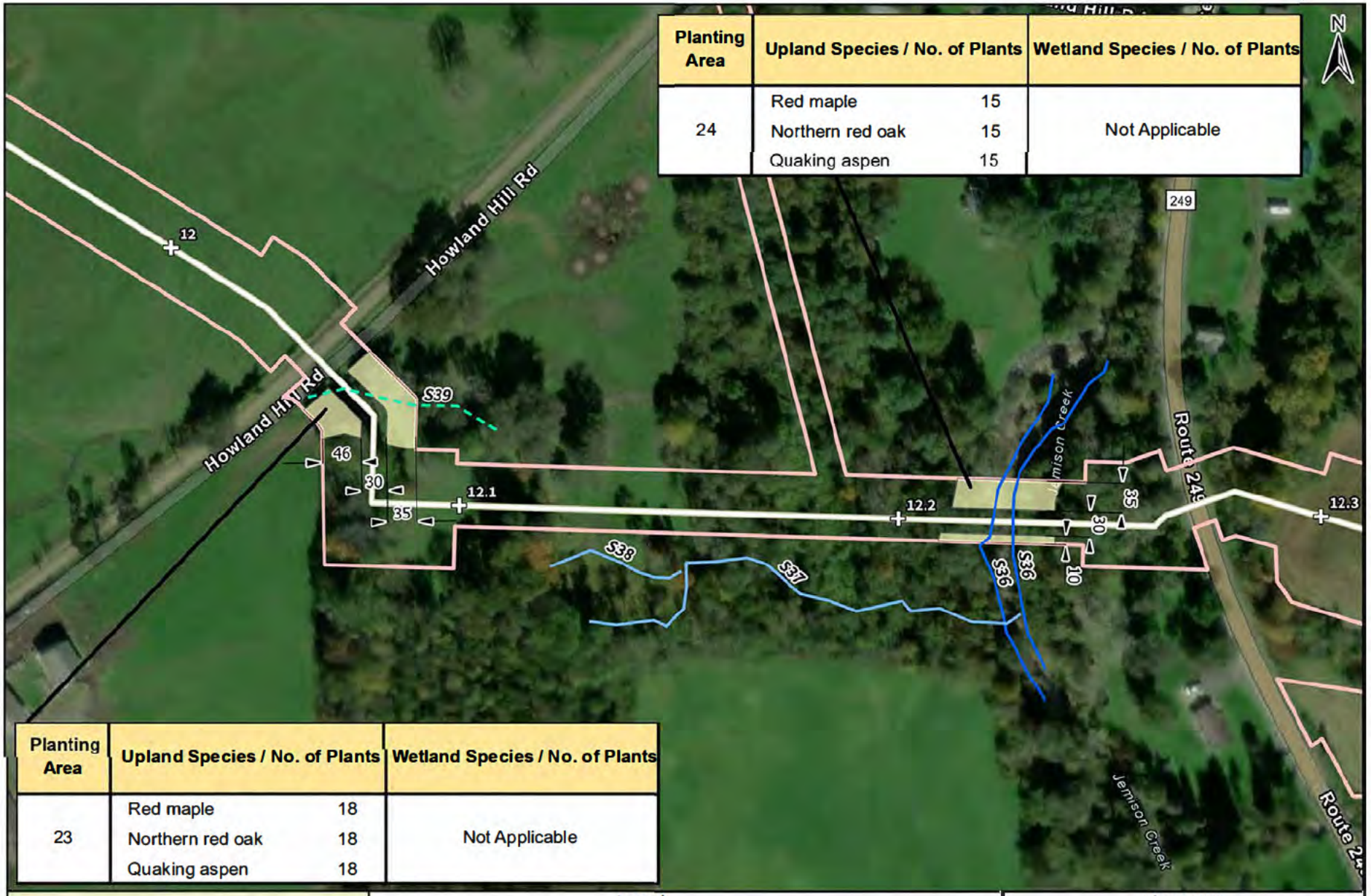
Prepared For: National Fuel Supply Corporation

Prepared By: TETRA TECH

Cartographer: JULIE.GIBSON

NOT FOR CONSTRUCTION

Date: 6/19/2025 5:25 PM



Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants
24	Red maple	15	Not Applicable
	Northern red oak	15	
	Quaking aspen	15	

Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants
23	Red maple	18	Not Applicable
	Northern red oak	18	
	Quaking aspen	18	

Legend

- Milepost
- Limit of Disturbance
- Pipeline Centerline
- Ephemeral Stream
- Perennial Stream

Planting Type
- Upland Riparian

All dimensions are measured in feet

Feet
0 50 100 200

Basemap: ESRI, USGS Topographic (2023)

Figure S4.B
Tioga Pathway Project
Riparian Planting Areas
S36, S39
Tioga County, Pennsylvania

Prepared For: National Fuel Supply Corporation

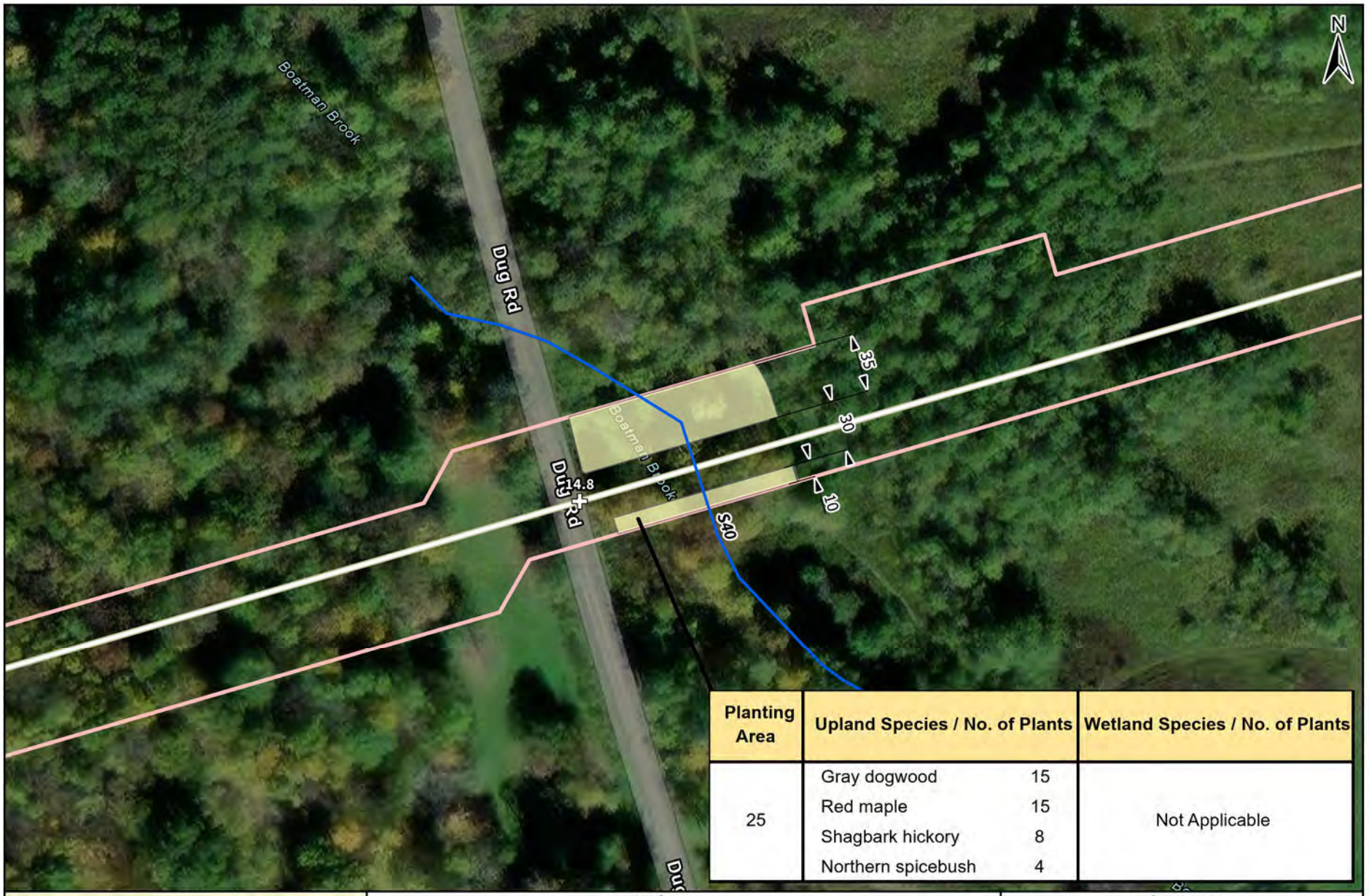
Prepared By: TETRA TECH

Meters
0 15 30 60

Cartographer: JULIE.GIBSON

NOT FOR CONSTRUCTION

Date: 6/19/2025 5:25 PM



Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants
25	Gray dogwood	15	Not Applicable
	Red maple	15	
	Shagbark hickory	8	
	Northern spicebush	4	

Legend

- Milepost
- Limit of Disturbance
- Pipeline Centerline
- Perennial Stream

Planting Type

- Wetland Riparian
- Upland Riparian

All dimensions are measured in feet

Feet: 0, 50, 100, 200

Basemap: ESRI, USGS Topographic (2023)

Meters: 0, 15, 30, 60

Figure S4.B
Tioga Pathway Project
Riparian Planting Areas
S40
Tioga County, Pennsylvania

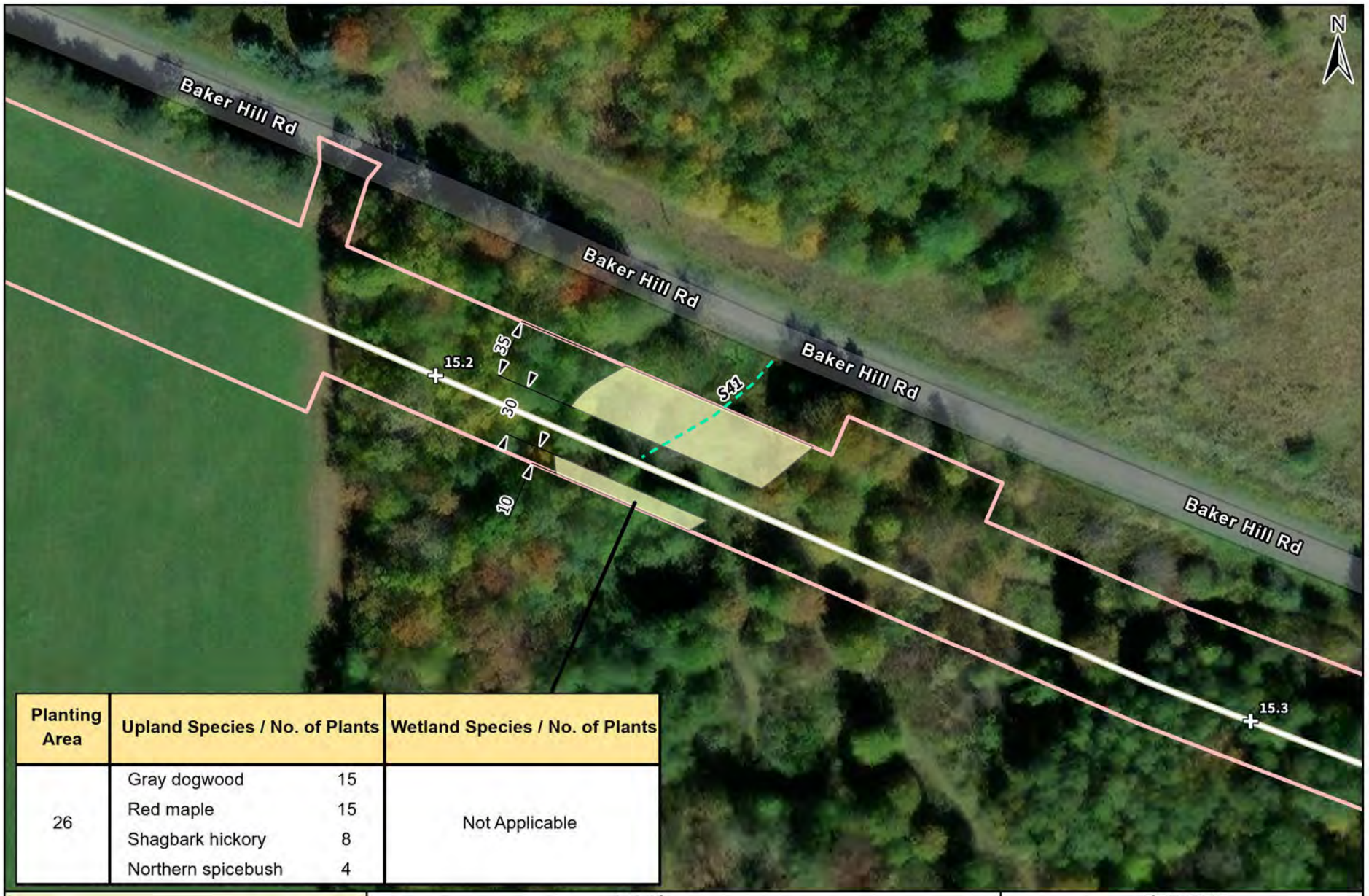
Prepared For: National Fuel Supply Corporation

Prepared By: TETRA TECH

Cartographer: JULIE.GIBSON

NOT FOR CONSTRUCTION

Date: 6/19/2025 5:25 PM



Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants
26	Gray dogwood	15	Not Applicable
	Red maple	15	
	Shagbark hickory	8	
	Northern spicebush	4	

Legend

Milepost
Limit of Disturbance
Pipeline Centerline
Ephemeral Stream

Planting Type
Upland Riparian

All dimensions are measured in feet

Figure S4.B
Tioga Pathway Project
Riparian Planting Areas
S41
Tioga County, Pennsylvania

Prepared For: National Fuel Supply Corporation

Prepared By: TETRA TECH

Feet: 0, 50, 100, 200

Basemap: ESRI, USGS Topographic (2023)

Meters: 0, 15, 30, 60

Cartographer: JULIE.GIBSON

NOT FOR CONSTRUCTION

Date: 6/19/2025 5:25 PM

Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants	
27	Gray dogwood	1	Black willow	10
	Red maple	1	Brookside alder	1
	Northern red oak	1	Silky dogwood	2
	Yellow birch	1	Southern arrow-wood	2

Legend

- Milepost
- Limit of Disturbance
- Pipeline Centerline
- Intermittent Stream

Wetland Classification
- PEM

Planting Type
- Wetland Riparian
- Upland Riparian

All dimensions are measured in feet

Feet: 0, 50, 100, 200

Basemap: ESRI, USGS Topographic (2023)

Meters: 0, 15, 30, 60

Figure S4.B
Tioga Pathway Project
Riparian Planting Areas
S45
Tioga County, Pennsylvania

Prepared For: National Fuel Supply Corporation

Prepared By: TETRA TECH

Cartographer: JULIE.GIBSON

NOT FOR CONSTRUCTION

Date: 6/19/2025 5:25 PM

Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants
28	Gray dogwood	5	Not Applicable
	Red maple	4	
	Shagbark hickory	4	
	Northern spicebush	2	

Legend

- Milepost
- Limit of Disturbance
- Pipeline Centerline
- Perennial Stream

Planting Type

- Upland Riparian

All dimensions are measured in feet

Feet: 0, 50, 100, 200

Basemap: ESRI, USGS Topographic (2023)

Meters: 0, 15, 30, 60

Figure S4.B
Tioga Pathway Project
Riparian Planting Areas
S47
Tioga County, Pennsylvania

Prepared For: National Fuel Supply Corporation

Prepared By: TETRA TECH

Cartographer: JULIE.GIBSON

NOT FOR CONSTRUCTION

Date: 6/19/2025 5:25 PM

Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants	
29	Eastern hemlock	20	Silver maple	14
	Red maple	37	Black willow	15

Legend

- Milepost
- Limit of Disturbance
- Pipeline Centerline
- Ephemeral Stream
- Perennial Stream

Wetland Classification
- PFO

Planting Type
- Wetland Riparian
- Upland Riparian

All dimensions are measured in feet

Figure S4.B
Tioga Pathway Project
Riparian Planting Areas
S48, S49
Tioga County, Pennsylvania

Prepared For: National Fuel Supply Corporation

Prepared By: TETRA TECH

Feet: 0, 50, 100, 200

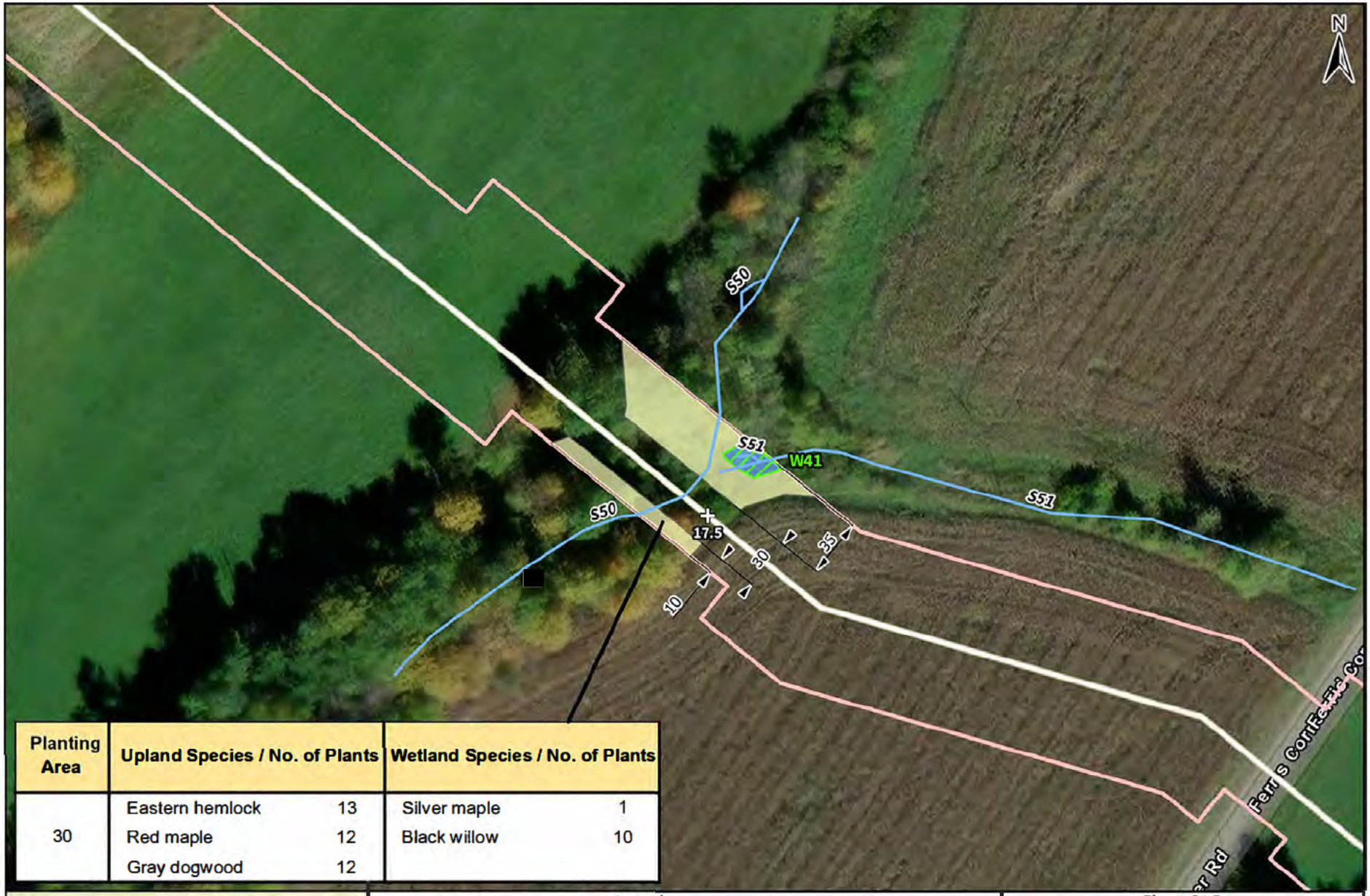
Basemap: ESRI, USGS Topographic (2023)

Meters: 0, 15, 30, 60

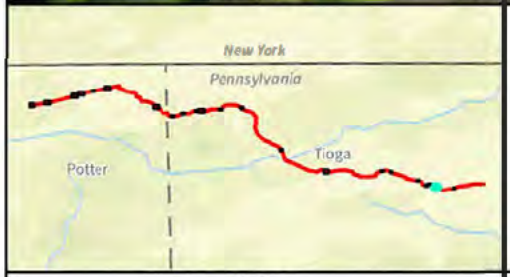
Cartographer: JULIE.GIBSON

NOT FOR CONSTRUCTION

Date: 6/19/2025 5:25 PM



Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants	
30	Eastern hemlock	13	Silver maple	1
	Red maple	12	Black willow	10
	Gray dogwood	12		



Legend

- Milepost
- Limit of Disturbance
- Pipeline Centerline
- Intermittent Stream

Wetland Classification
- PEM

Planting Type
- Wetland Riparian
- Upland Riparian

All dimensions are measured in feet

Figure S4.B
Tioga Pathway Project
Riparian Planting Areas
S50, S51
Tioga County, Pennsylvania

Prepared For: National Fuel Supply Corporation

Prepared By: TETRA TECH

Feet: 0, 50, 100, 200

Basemap: ESRI, USGS Topographic (2023)

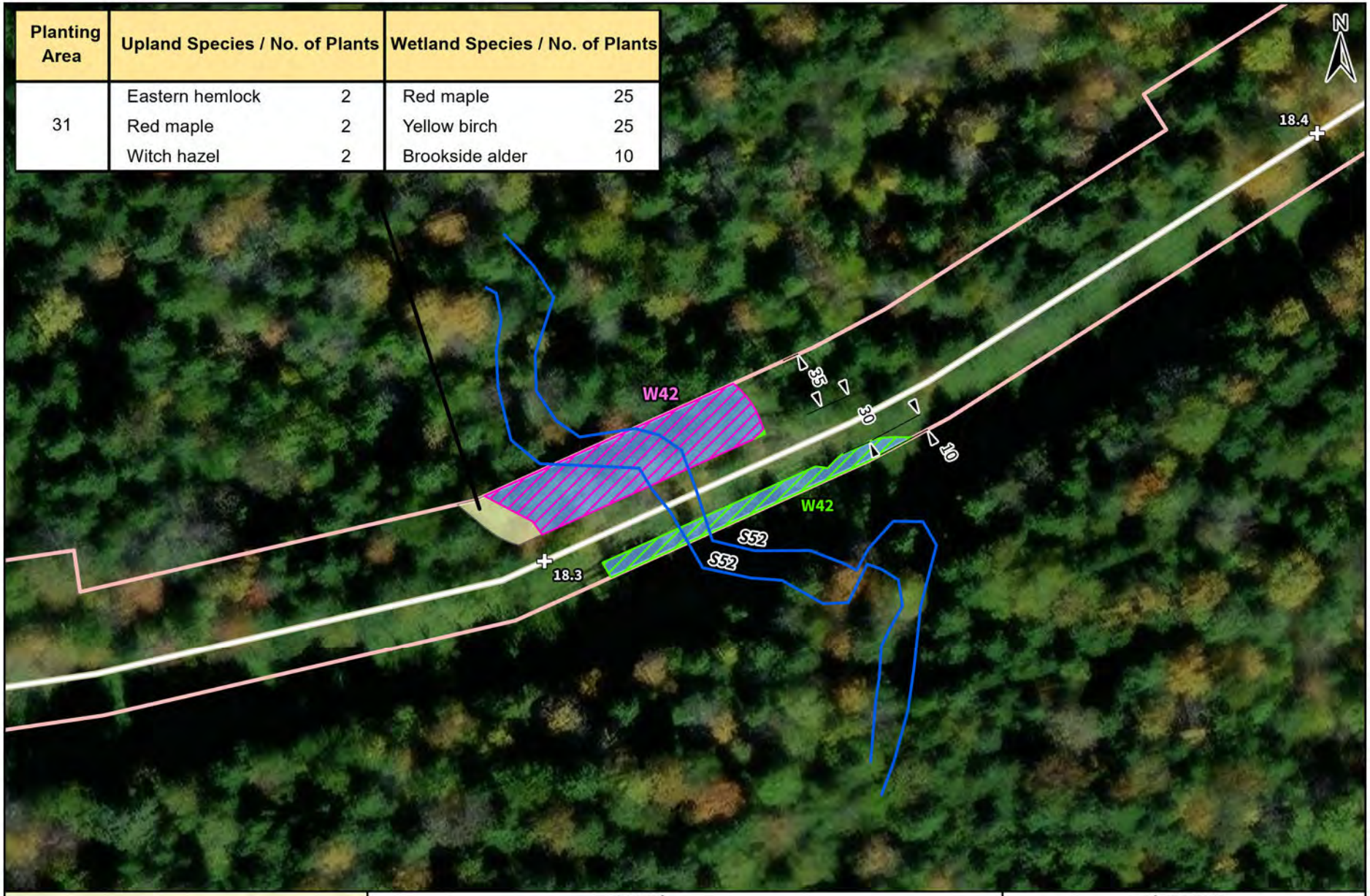
Meters: 0, 15, 30, 60

Cartographer: JULIE.GIBSON

NOT FOR CONSTRUCTION

Date: 6/19/2025 5:25 PM

Planting Area	Upland Species / No. of Plants		Wetland Species / No. of Plants	
31	Eastern hemlock	2	Red maple	25
	Red maple	2	Yellow birch	25
	Witch hazel	2	Brookside alder	10



Legend

- Milepost
- Limit of Disturbance
- Pipeline Centerline
- Perennial Stream

Wetland Classification
- PEM
- PFO

Planting Type
- Wetland Riparian
- Upland Riparian

All dimensions are measured in feet

Figure S4.B
Tioga Pathway Project
Riparian Planting Areas
S52
Tioga County, Pennsylvania

Prepared For: National Fuel Supply Corporation

Prepared By: TETRA TECH

Feet: 0, 50, 100, 200

Basemap: ESRI, USGS Topographic (2023)

Meters: 0, 15, 30, 60

Cartographer: JULIE.GIBSON

NOT FOR CONSTRUCTION

Date: 6/19/2025 5:25 PM