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BL Companies

Habitat Assessment Report

September 2017
NVCOG Naugatuck River Greenway Thomaston-Watertown

Prepared for:
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Purpose of this Report

In 2014 the Connecticut Department of Energy and Environmental Protection (CTDEEP) Trail Program submitted an application to the CT DEEP Natural Diversity Database (NDDB) to determine potential listed species present in the vicinity of the proposed Naugatuck River Greenway trail throughout Thomaston and Watertown. That inquiry resulted in a response letter dated February 7, 2014, which revealed the possibility of eight Connecticut state-listed species in the vicinity of the Site; five-lined skink (*Eumeces fasciatus*), northern spring salamander (*Gyrinophilus porphyriticus*), timber rattlesnake (*Crotalus horridus*), eastern hognose snake (*Heterodon platirhinos*), smooth green snake (*Liochlorophis vernalis*), eastern box turtle (*Terrapene carolina carolina*), wood turtle (*Glyptemys insculpta*), and alder flycatcher (*Empidonax alnorum*) which are all protected under Connecticut General Statutes (CGS). A copy of the letter can be found in Appendix A, and habitat requirements are detailed in Section 3. The CTDEEP letter (file # 201305046) prompted a meeting with the CTDEEP Wildlife Division on November 14, 2014 to determine the best course of action for avoiding, minimizing, and mitigating impacts to species present. As a result of the listed species potentially present on the site, CT DEEP Wildlife Division recommended that the project area should be surveyed for the listed reptiles and amphibians and record existing habitat conditions present within the project limits. CT DEEP Wildlife also provided recommendations regarding the Alder flycatcher that was previously addressed by others under separate cover.

As recommended in the letter from CTDEEP NDDB, an initial habitat assessment based on cover types was completed for the Thomaston portion of the trail project. The purpose of this report is to detail existing habitat conditions present throughout the Thomaston portion of the project. This report will briefly summarize species habitat needs and likelihood of their presence on-site, as well as outline avoidance, minimization, and mitigation efforts that could be employed.

Project Summary

The project involves approximately 2.25 miles of trail located east of Route 8 and west of the Naugatuck River; railroad tracks also parallel the southern portion of the trail for approximately 1.4 miles. The project limits begin in Thomaston, south of the Water Pollution Control and Authority Facility located at 258 Old Waterbury Road, and continue south to Route 262 (Frost Bridge Road). A location map is included in Appendix B. An existing trail currently runs through this area with various dirt, gravel, and paved portions. Proposed work for this trail includes providing drainage and safety improvements and a uniform trail width, and may include either a new crossing or rehabilitation of the existing trolley bridge structure over Branch Brook in Thomaston.

The proposed impacts to the corridor are still in the Study Phase however, they are expected to be minor in nature. A trail currently exists within the project limits; the substrate varies from dirt, to crushed stone, to paved in some areas. The existing drainage patterns will remain largely intact. The site lies within the Branch Brook sub-regional drainage basin (6910) and Naugatuck River sub-regional drainage basin (6900), part of the Naugatuck Regional basin, and is not located

within a public water supply watershed. The site is not located within an Aquifer Protection Area according to CT DEEP mapping for Thomaston and Watertown dated February 14, 2017. According to the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps for Litchfield County, (effective dates November 5, 1980 and July 5, 1982), 100-year floodplain (Zone A) and 500-year floodplain (Zone B) are mapped within the project site.

USFWS National Wetland Inventory mapping and the National Resource Conservation Service indicate a general lack of wetlands and classify soils as Udorthents-Urban Land soil complex, hinckley loamy sand, rock outcrops, and Suncook loamy fine sand in the vicinity of the trail. Resource mapping is included in Appendix C. Field investigations by a qualified soil scientist identified two perennial watercourses, Branch Brook and the Nauagatuck River, two State wetlands, and four intermittent watercourses in the southern portion.

Site Description

A field investigation by BL Companies scientists was conducted on June 9, 2017 to evaluate cover types on Site. Six distinct habitat types were observed throughout the corridor. These include:

1. Mixed deciduous and evergreen forest with sparse shrub understory
2. Branch Brook
3. Previously cleared areas with open canopy, emergent understory
4. Sparse canopy cover with scrub/shrub understory
5. Shaded riprap or rock outcrop
6. Naugatuck River

A more in-depth description of each habitat type is provided below, and a map depicting the different cover types can be found in Appendix D.

<u>Mixed Deciduous-Evergreen Forest</u>

This canopy cover was observed throughout the corridor in uplands and in state wetlands bordering Branch Brook. Tree canopy composition consists of white pine (*Pinus strobus*), eastern hemlock (*Tsuga canadensis*), sugar maple (*Acer saccharum*), gray birch (*Betula populifolia*), hickories (*Carya* sp.), red oak (*Quercus rubra*), and sweet birch (*Betula lenta*). A scrub-shrub understory is present, but sparse in most areas consisting of saplings of the previously mentioned tree species, ironwood (*Carpinus caroliniana*), red maple (*Acer rubrum*), and spicebush (*Lindera benzoin*). Herbaceous cover varies from sparse to very dense and lush. Common herbaceous vegetation includes New York fern (*Parathelypteris noveboracensis*), garlic mustard (*Alliaria petiolate*), Japanese knotweed (*Polygonum cuspidatum*), wood aster (*Eurybia divaricata*), King Solomon's seal (*Polygonatum biflorum*), and oriental bittersweet (*Celastrus orbiculatus*). A small portion of the forest was noted to lack a shrub layer and instead is densely colonized in the understory by lush Pennsylvania sedge (*Carex pensylvanica*). Soils in this area were noted to be sandy loam with a top layer of organic debris. This canopy cover is depicted as "Mixed Forest" in Appendix D on pages 1-8.

Branch Brook

Branch Brook is a perennial tributary to the Naugatuck River, and is located in the northern portion of the corridor. Branch Brook is classified as a riverine upper perennial unconsolidated bottom permanently flooded (R3UBH) waterbody by the USFWS National Wetland Inventory. The watercourse is approximately 30-feet wide on average with a cobble and gravel substrate and riffle and pool complex throughout. Water depth during the investigation was approximately 12-inches, however some pooled areas appeared to be deeper, and areas of riffles were noted to be shallower. The banks were noted to be incised and eroded in some areas, with sparse vegetation including sycamore (*Platanus occidentalis*), sugar maple, eastern hemlock, spicebush, wood aster, and Japanese Knotweed. The brook is mostly shaded, with very little open canopy present over the watercourse. Detritus and aquatic vegetation was noted in some areas, and crayfish presence was also observed. Branch Brook is depicted on page 1 of Appendix D.

Previously Cleared Areas with Open Canopy

A small area of predominantly open canopy along Route 8 is present in the northern portion of the corridor, and additional open canopy is present in the southern portion of the corridor as the trail approaches Frost Bridge Road (Route 262). In the northern section, the trail is present immediately east of Route 8 where vegetation appears to have been cleared for construction and maintenance associated with Route 8. The trail substrate in this area consists of gravel and sand, with some riprap present along the western edge of the trail. Some evergreen canopy cover is present from the forest east of the trail, however the tree canopy still remains largely open with very little scrub-shrub or herbaceous vegetation present. Open canopy due to past clearing is also present in the southern portion of the trail; a small amount of tree canopy is also present from the adjacent forest to the west of the trail in this area, but the canopy is still predominantly open. Japanese knotweed and oriental bittersweet are dominant in these areas. This canopy cover is depicted as “Previously Cleared” in Appendix D on pages 1, 2, 8, and 9.

Sparse Canopy Cover with Scrub-Shrub Understory

This cover type is characterized by sparse forest composed of gray birch with a scrub-shrub understory consisting of red maple saplings, red oak saplings, white ash (*Fraxinus Americana*) sapling, birch, sumac (*Rhus* sp.), maple-leaved viburnum (*Viburnum acerifolium*), New York fern, goldenrod (*Solidago* sp.), and Japanese knotweed. Large boulders and rocks were also noted in this area. This habitat type is predominantly present east of the trail along the edge of the Naugatuck River, but is also present in smaller patches west of the trail and east of Route 8. This habitat type slowly transitions to the shaded riprap and rock outcropping as the trail progresses south. This cover type is depicted as “Sparse Canopy” in Appendix D on pages 1, 2, 3, 4, 8, and 9.

Shaded Riprap and Rock Outcrops

In the northern reaches of the corridor, the western portion of the trail is stabilized with riprap. As the trail continues south, the riprap transitions to rocks and boulder, and eventually a rock outcrop. These areas are predominantly shaded by gray birch, white pine, eastern hemlock, red maple, red oak, ironwood, and yellow birch (*Betula allegheniensis*). Shrub understory is present in the form of saplings, witch hazel (*Hamamelis virginiana*), and mountain laurel (*Kalmia latifolia*). Striped maple (*Acer pensylvanicum*) was also noted in these shaded areas near the rock outcrops; it should be noted that this species prefers microhabitats that are cool and moist habitats, and often found in consistently shaded areas. This habitat is depicted as "Rock Slope" in Appendix D on pages 2 and 3.

Naugatuck River

The Naugatuck River runs parallel to the east of the trail. On average, the river is approximately 100 feet wide, and several feet deep. The Naugatuck River flows south, and is classified as a riverine upper perennial unconsolidated bottom permanently flooded (R3UBH) waterbody by the USFWS National Wetland Inventory. Trees, shrubs, and boulders line the edges of the river. The river lies largely outside of the 100-foot trail corridor; however, it is an important resource for wildlife. This habitat is depicted in Appendix D on pages 1 through 4.

Potentially Affected Species

Potential species presence was determined based on the different habitats observed during the June 2017 site investigation. The section below details the seven reptiles and amphibian species of concern identified by NDDB, their required habitat, and whether appropriate habitat was observed throughout the Thomaston portion of the site. Potential habitat for any species identified as possibly present within the corridor is depicted on the map in Appendix E. Photos from the site investigation is included in Appendix F. A separate study was completed by Jeremy Leifert, the Land Use Administrator for the Town of Thomaston to determine the potential presence of the alder flycatcher throughout the trail corridor, and is included in Appendix G.

Connecticut state-listed species identified as potentially being present in the vicinity of the Site included: five-lined skink (*Eumeces fasciatus*), northern spring salamander (*Gyrinophilus porphyriticus*), timber rattlesnake (*Crotalus horridus*), eastern hognose snake (*Heterodon platirhinos*), smooth green snake (*Liochlorophis vernalis*), eastern box turtle (*Terrapene carolina carolina*), wood turtle (*Glyptemys insculpta*), and alder flycatcher (*Empidonax alnorum*)

The habitat investigation occurred on June 9, 2017, weather conditions were in the mid-70s and mostly sunny. Conditions that day were warm enough that reptiles would be active or out basking, but not so hot that they would be seeking shade and hidden away from view.

Five-Lined Skink (*Eumeces fasciatus*)

The five-lined skink is a state threatened species that relies on steep rocky slopes with patchy tree cover, and abundant rotting logs and loose rock slabs. As a reptile, they rely on their surroundings for heat, and require sunlight for basking. While riprap and steep rock outcroppings are present throughout the northwestern portion of the corridor, they face the east, which limits the amount of sun they receive, and they are fairly well shaded, and would likely not allow the skinks the appropriate habitat for basking. Furthermore, the presence of striped maple in the shaded rock outcrop indicates that these areas are cooler microhabitats, and are likely not suitable for skinks. Based on lack of appropriate habitat, it has been concluded that the skink is likely not present within the project corridor.

Northern Spring Salamander (*Gyrinophilus porphyriticus*)

The northern spring salamander is a state threatened species that requires cold, well-oxygenated springs, brooks, or seeps, and is often found in steep, rocky ravines. This species of salamander is highly intolerant of disturbance, and is an indicator of high-quality waters.

The Naugatuck River does not provide the habitat required by this species; the perennial waterbody is relatively deep, and did not appear to have the appropriate substrate of rocks and cobbles required by the salamander. Furthermore, the Naugatuck River is a Class B surface water indicating that it is not a high-quality surface water required by this salamander species. Branch Brook also did not appear to be appropriate habitat for the salamander as it is a relatively large, gently sloping perennial watercourse, rather than the steep, rocky ravines and feeder streams preferred by the salamanders. However, Branch Brook does have a rock and cobble substrate, therefore, rocks and cobbles in Branch Brook were overturned during the investigation, and no salamanders were observed. While their presence cannot be precluded, it is unlikely that these salamanders inhabit Branch Brook; potential habitat is depicted on page 1 of Appendix E. However, no direct impacts to Branch Brook are currently anticipated. Special attention to proper erosion and sedimentation control is recommended for this area as design progresses.

Timber Rattlesnake (*Crotalus horridus*)

The timber rattlesnake is a state endangered species that requires upland deciduous forest with steep rocky slopes and ledges and a nearby water supply. According to CTDEEP, this species requires upland habitat and is rarely found below 500 feet above sea level. Muck like the skinks, timber rattlesnakes also require access to sunlight for basking.

While the appropriate rock outcroppings and ledges are present in the northwest portion of the trail corridor, the outcrops face east and receive little sunlight, and they are highly shaded. The presence of striped maple indicates a cooler microclimate in these shaded outcrops, and would likely not be favored by the rattlesnake. The nearest waterbody to these preferred rock outcrops is the Naugatuck River, and would require a steep descent down the rock face to access the water. Furthermore, the trail is located below 400 feet in elevation, and the timber rattlesnake is

known to prefer habitat exceeding 500 feet above sea level. The rock outcrops, ledges, and riprap were inspected for evidence of rattles snakes in the form of snakes themselves and skin sheds, however none were observed. No evidence of their presence was observed, and based on the lack of appropriate habitat, no timber rattlesnakes are believed to be within the project limits.

Eastern Hognose Snake (*Heterodon platirhinos*)

The eastern hognose snake is a species of special concern in Connecticut. This species requires loose, sandy, gravelly soil, and underground passages created by small mammals through fields, areas adjacent to forests, and open forests. This species is adapted to edge, disturbed, and early successional habitats, and is not likely found in densely forested areas.

A large portion of the project corridor is located in dense forests, shaded rock outcrops, or areas of loamy soils, however a small area of loose sandy soil and disturbed edge habitat was observed in the northwest portion of the trail as it approaches Route 8. In this area, the canopy is open with mixed deciduous and evergreen forest to the east; soils were notably sandy and gravelly adjacent to the roadway. As the trail continues south, the forest to the east becomes narrower as the Naugatuck River flows southwest towards the trail, eventually paralleling the corridor. A small pond is present to the east of the trail and may provide habitat for frogs and toads, which are a major food source for the hognose snake. Potential habitat stretches approximately 700 linear feet from where the trail approaches Route 8 to the river bend, depicted on pages 1 and 2 of Appendix E. However, it is extremely narrow as the west is limited by Route 8, and the east is limited by dense forest and/or the Naugatuck River. No small burrows, hognose snakes, or skin sheds were observed in this area.

Smooth Green Snake (*Liochlorophis vernalis*)

The smooth green snake is a special concern species in Connecticut. Habitat for this species include moist, open habitats such as old fields, meadows, pastures, fens, coastal grasslands, and edges of wetlands. Less common habitat includes sparsely forested areas such as mountaintop balds, and undisturbed areas are preferred.

No meadows, old fields, pastures, fens, or grasslands are present within the corridor. The areas classified as “open canopy” present in the northern and southernmost section of the trail do not appear to support a large amount of grassland or meadow vegetation species, and therefore would not provide suitable habitat for this species of snake. Furthermore, no snakes or skin sheds were observed during the investigation. Therefore, no smooth green snakes are believed to inhabit the project corridor.

Eastern Box Turtle (*Terrapene carolina carolina*)

The eastern box turtle is a species of special concern in Connecticut. Appropriate habitat for this species include low lying areas, generally below 700 feet in elevation, such as deciduous

woodlands or old fields that provide protective cover but also afford them the opportunity to bask. They are also often found in forested areas, as well as early successional or disturbed habitat. This species is water-dependent and will remain close to waterbodies or wetlands for drinking water, refuge from heat, and hibernation.

Overall, the project corridor lacks the appropriate wetlands required by the box turtle, however Branch Brook may provide potential aquatic habitat for the species. Appropriate upland habitat may be present within the mixed deciduous-evergreen forest; however, the dense canopy cover may not allow in enough sunlight for necessary basking. A small pond with open canopy cover was noted outside of the project limits, east of the trail within the mixed forest; this area may provide the necessary forested habitat with enough sunlight and access to water. It should be noted that no turtles were observed in this area or within the project limits. Given the wide variety of habitats in which they can be found, and possible appropriate habitat present, the eastern box turtle could be potentially present within the vicinity of the project. Potential habitat is depicted on pages 1 and 2 of Appendix E.

Wood Turtle (*Glyptemys insculpta*)

Wood turtles are a special concern species in Connecticut. This species relies both on terrestrial habitat in the spring and summer, and retreats to aquatic hibernation sites in the fall and through winter. Appropriate terrestrial habitats include riparian forests, wetlands, sandy floodplains, and early successional fields. Aquatic habitats required for hibernation include rivers and large streams which generally have moderate flow, sandy or gravelly substrate, and muddy banks.

The project corridor largely lacks appropriate wetlands and early successional habitat required by the wood turtle during the spring and summer. However, riparian forest is present east of the trail along Branch Brook and the Naugatuck River. Appropriate aquatic habitat required for hibernation may be present within the Naugatuck River, as it is a larger waterbody with moderate flow. The substrate of the River was not visible at the time of the investigation, however NWI mapping classifies the waterway as having an unconsolidated bottom, which includes cobble-gravel, sand, mud, and organics, which are preferred by this species. While no turtles were observed during the investigation, appropriate habitat is present in the vicinity of the project, and therefore wood turtles should be considered potentially present. Potential habitat is depicted on each page of Appendix E.

Conclusion

Based on the habitat requirements for each of the seven (7) species assessed, four (4) species were determined to be potentially present within the vicinity of the project. These species include the northern spring salamander, eastern hognose snake, eastern box turtle, and wood turtle. While potential habitat is present, it should be noted that no evidence of any of these species was observed during the June 2017 investigation. However, their presence will be assumed, and appropriate precautions will be taken during the design and construction of the trail.

No direct impacts to Branch Brook are currently anticipated, therefore no adverse impacts to the spring salamander are currently expected. Widening of the trail may have impacts to several cover types including the mixed deciduous-evergreen forest, previously cleared areas with open canopy, and sparse canopy cover with scrub-shrub understory. Work in these areas could have potential impacts on the hognose snake, box turtle, and wood turtle. To avoid adversely impacting these species, the construction foreman will be made aware of the potential species presence within the project limits and will be educated on appropriate methods for relocating each species if encountered. Best management practices (BMP's) will be implemented during construction including the use of wildlife-friendly jute erosion and sedimentation controls, sweeps for the three species each day before construction begins, and BMPs for each species will be kept on-site.

The remaining three species, the five-lined skink, timber rattlesnake, and smooth green snake, were determined to not likely be present within the trail corridor. Both the five-lined skink and the timber rattlesnake require rocky outcrops and ledges with sun exposure for basking. While rock outcrops, ledges, and riprap slopes are present within the corridor, they are highly shaded and would likely not provide enough sunlight for necessary basking. Finally, the smooth green snake requires meadows, fields, or pastures, which are not present within the trail corridor. Therefore, it has been determined that these species are not likely present.

Preparer

Rachael Hyland, WPIT, Certified Associate Ecologist

Ms. Hyland holds a Bachelor's degree in Ecology and Evolutionary Biology and has 4 years of experience in environmental sciences. Her specialty lies in ecological assessments and animal identification, specifically Connecticut species of reptiles, amphibians, and mammals including notable experience with bats. Ms. Hyland is also trained in wetland and upland plant identification and has assisted in federal and state delineations throughout Connecticut, Ohio, Virginia, Massachusetts, Rhode Island, and Alabama. Ms. Hyland's responsibilities include assisting with wetland delineations, permitting, performing environmental site assessments, vernal pool surveys, agency coordination, ecological assessments, wetland monitoring, and the preparation of client reports. Ms. Hyland is a Wetland Professional in Training with the Society of Wetland Scientists and has completed Basic Wetland Delineator Training with the Institute for Wetland Education and Environmental Research, and has completed numerous plant identification classes. Additionally, Ms. Hyland is a Certified Associate Ecologist through the Ecological Society of America.

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Connecticut Department of
ENERGY & ENVIRONMENTAL PROTECTION

Bureau of Natural Resources
Wildlife Division
Natural History Survey – Natural Diversity Data Base

February 7, 2014

Ms. Sarah Battistini
DEEP Trails Program RTP
79 Elm Street
Hartford, CT 06106

Regarding: Naugatuck River Greenway: Thomaston-Watertown Design and Construction of Trailhead and Trail - Natural Diversity Data Base 201305046

Dear Ms. Battistini:

In response to your request for a Natural Diversity Data Base (NDDB) Review of State Listed Species for the Naugatuck River Greenway, our records indicate extant populations of species documented on or within the vicinity of the site:

Five-lined skink (*Eumeces fasciatus*) Protection Status: Threatened Species

The state-threatened common five-lined skink is the only lizard native to Connecticut. Skink populations are found in four widely separated areas in western Connecticut. The small size and fragmented nature of skink populations leaves them vulnerable to ecological catastrophes.

The preferred habitat of the five-lined skink includes steep, rocky areas with open ledge, patchy tree and shrub cover, and an abundance of rotten logs and loose rock slabs. These habitats are usually adjacent to moist deciduous forests.

Although five-lined skinks spend much of their time under rocks and other shelter, they will bask in sunny spots on logs or rocks. Rock climbers at several sites in Connecticut often see them running along cliffs. The lizards are primarily terrestrial, but will climb dead trees to find insects.

Skinks hibernate singly or in small groups from October through mid-March in decaying logs, under large rocks, or underground, below the frost line.

Northern spring salamander (*Gyrinophilus porphyriticus*) Protection Status: Threatened Species

Northern spring salamanders require cold, clean, well-oxygenated springs, brooks or seepage areas. Their favored habitat is heavily forested steep rocky ravines. Any activities that decrease the forest canopy thereby increasing the water temperature, may affect these cold water salamanders. Shade trees and shrubs should be maintained or restored along the stream banks. If there are drainages in this area that are well-oxygenated and heavily forested, they may be suitable habitat for this species.

Timber Rattlesnake (*Crotalus horridus*) Protection Status: Endangered Species

Timber rattlesnakes are actively foraging in Connecticut between April 1 and October 31, and hibernate the other months of the year. Populations of this reptile have declined dramatically in

recent years, and the timber rattlesnake is a protected species in this state therefore the taking or killing of this reptile is prohibited. (Connecticut General Statute Sec. 26-306-4, effective Feb 1992)

Recommendation: A person knowledgeable in timber rattlesnakes should be onsite at all times to monitor the presence of the snake. If a snake is found, a person with experience handling timber rattlesnakes should relocate it no more than ¼ mile away out of the work zone to prevent the animal from being harmed or killed. Please report any sightings of live or dead rattlesnakes. Information can be emailed to Jenny Dickson at jenny.dickson@ct.gov.

Eastern hognose snake (*Heterodon platirhinos*) Protection Status: Species of Special Concern

Eastern hognose snakes are a species that has been declining due to loss of suitable habitat. They favor sandy areas with well drained gravelly soils. The active period for these snakes is April through November. Therefore, they will be more visible at this time.

Smooth green snake (*Liochlorophis vernalis*) Protection Status: Species of Special Concern

The smooth green snake favors meadows and moist grassy fields along forest edges where their coloration can camouflage them. It has been negatively impacted by the loss of suitable habitat.

Eastern box turtle (*Terrapene carolina Carolina*) Protection Status: Species of Special Concern

Eastern box turtles inhabit old fields and deciduous forests, which can include power lines and logged woodlands. They are often found near small streams and ponds. The adults are completely terrestrial but the young may be semiaquatic, and hibernate on land by digging down in the soil from October to April. They have an extremely small home range and can usually be found in the same area year after year. Eastern box turtles have been negatively impacted by the loss of suitable habitat. Some turtles may be killed directly by construction activities, but many more are lost when important habitat areas for shelter, feeding, hibernation, or nesting are destroyed. As remaining habitat is fragmented into smaller pieces, turtle populations can become small and isolated.

Wood turtle (*Glyptemys insculpta*) Protection Status: Species of Special Concern

Wood turtles require riparian habitats bordered by floodplain, woodland or meadows. They hibernate in the banks of the river in submerged tree roots. Their summer habitat includes pastures, old fields, woodlands, powerline cuts and railroad beds bordering or adjacent to streams and rivers. This species has been negatively impacted by the loss of suitable habitat.

Recommendations for skinks, salamanders, snakes, and turtles: The DEEP Wildlife Division recommends that a herpetologist survey the area for skinks, salamanders, snakes, and turtles. A report summarizing the results of such survey should include (1) the survey dates, (2) descriptions of the habitat and component species, (3) notes on the presence/absence of species, (4) detailed maps of the area surveyed including the location and extent of species, (5) a management plan to protect these species, and (6) a statement/résumé indicating the herpetologist's qualifications. The report should be sent to: Jenny Dickson (jenny.dickson@ct.gov) for review and approval prior to the project being conducted.

Alder flycatcher (*Empidonax alnorum*) Protection Status: Species of Special Concern

Alder flycatchers utilize thickets of tall shrubby vegetation in close proximity to streams or open water. The breeding season for this bird is approximately May through August and it is during this period that they are most susceptible to disturbances in their feeding and nesting habitat.

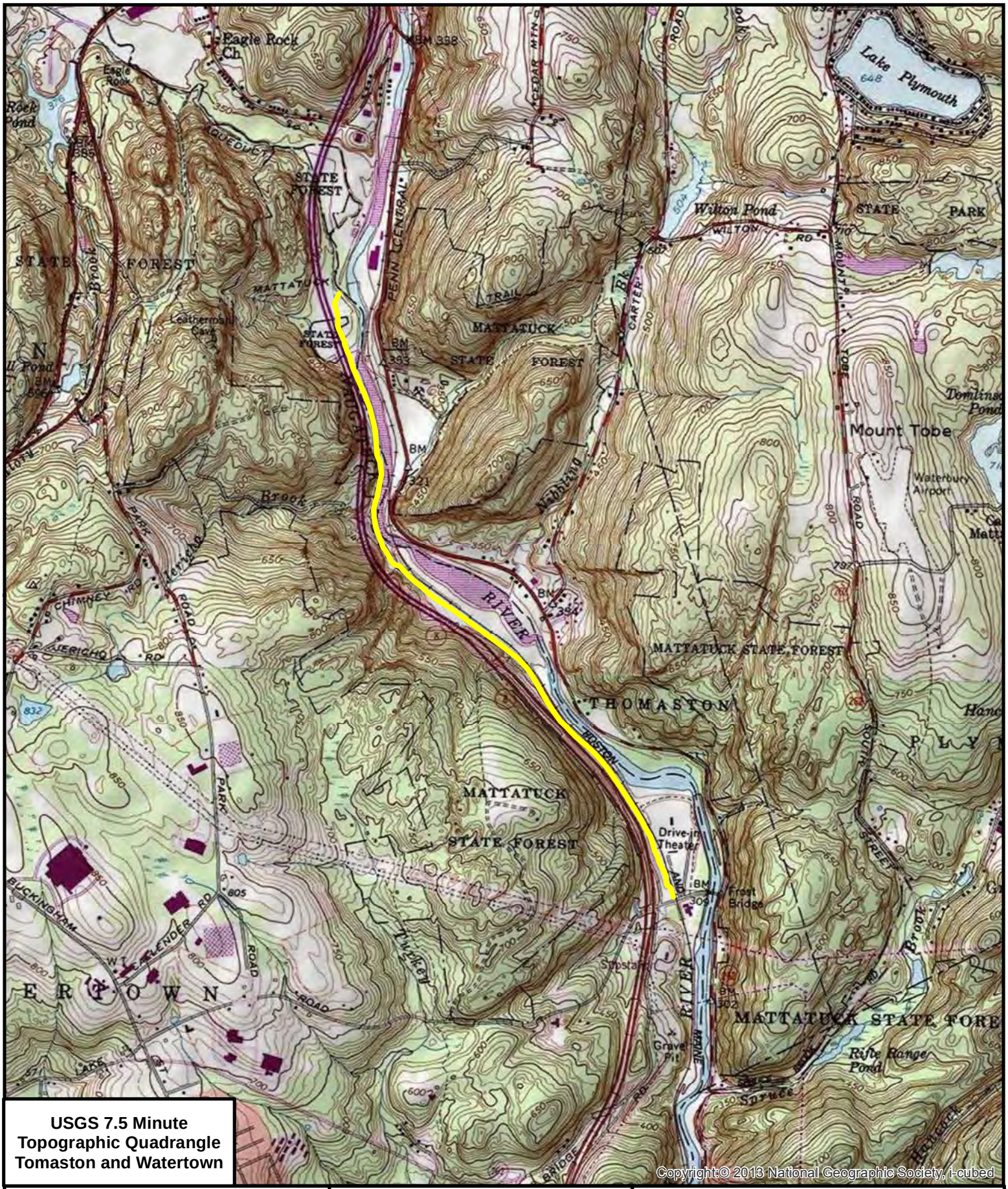
Recommendations: Work should be conducted outside of the breeding season, and particular caution should be to protect areas with alder or similar thickets in wetland areas.

The Natural Diversity Data Base includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substituted for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available. If the project is not implemented within 12 months, then another Natural Diversity Data Base review should be requested for up-to-date information.

Please be advised that this is a preliminary review and not a final determination. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEEP for the proposed site.

Thank you for consulting the Natural Diversity Data Base. If you have any additional questions, I can be contacted by email at Elaine.Hinsch@po.state.ct.us.

Sincerely,
/s/
Elaine Hinsch
Program Specialist II
Wildlife Division



USGS 7.5 Minute Topographic Quadrangle Tomaston and Watertown

Legend

Trail

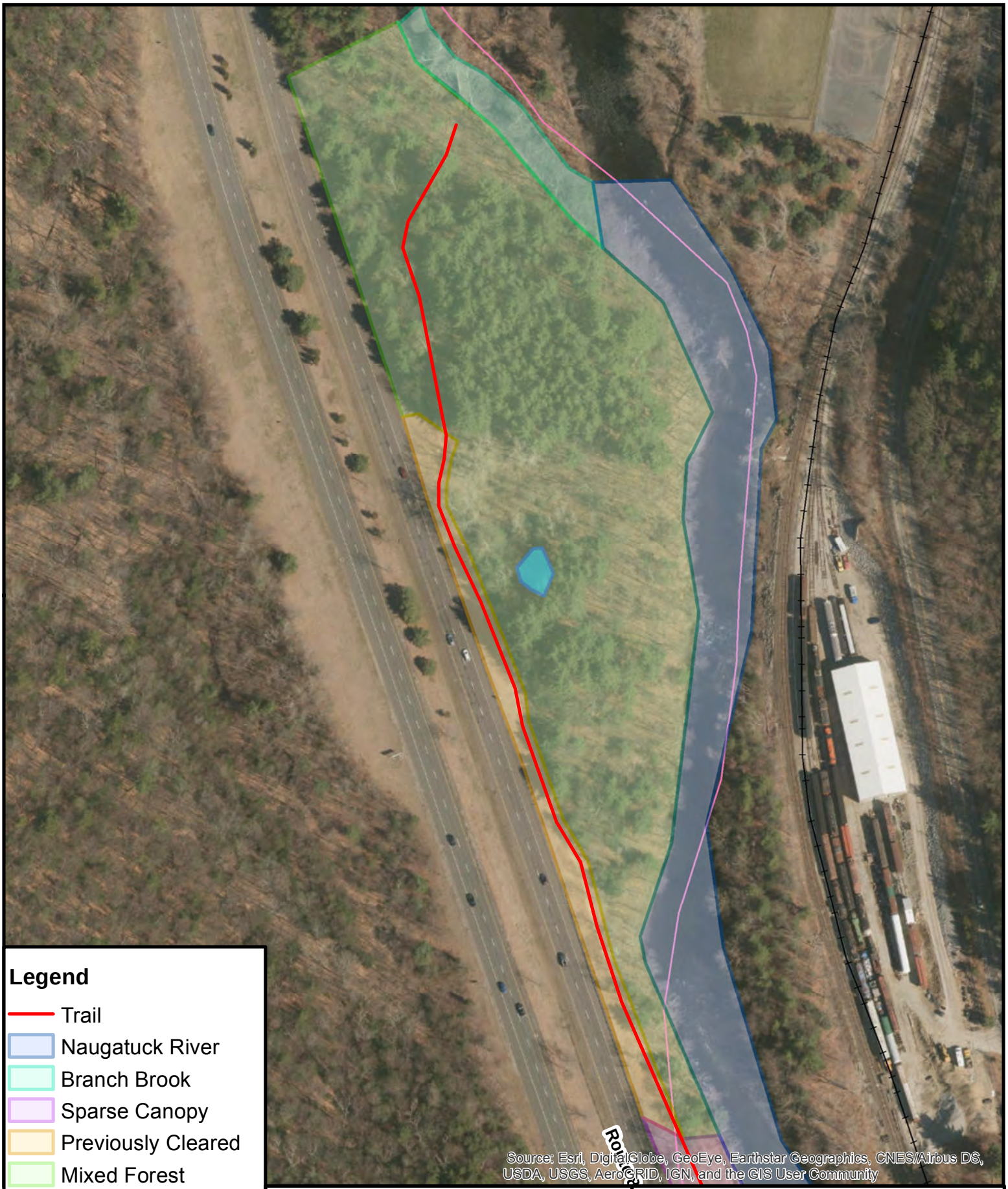
N

0 875 1,750 3,500 Feet

Naugatuck Valley Greenway
Proposed Trail Design
Thomaston and
Watertown, CT

BL Companies
Architecture
Engineering
Environmental
Land Surveying

Topographic Location Map



Naugatuck Valley Greenway
Proposed Trail Design
Thomaston and
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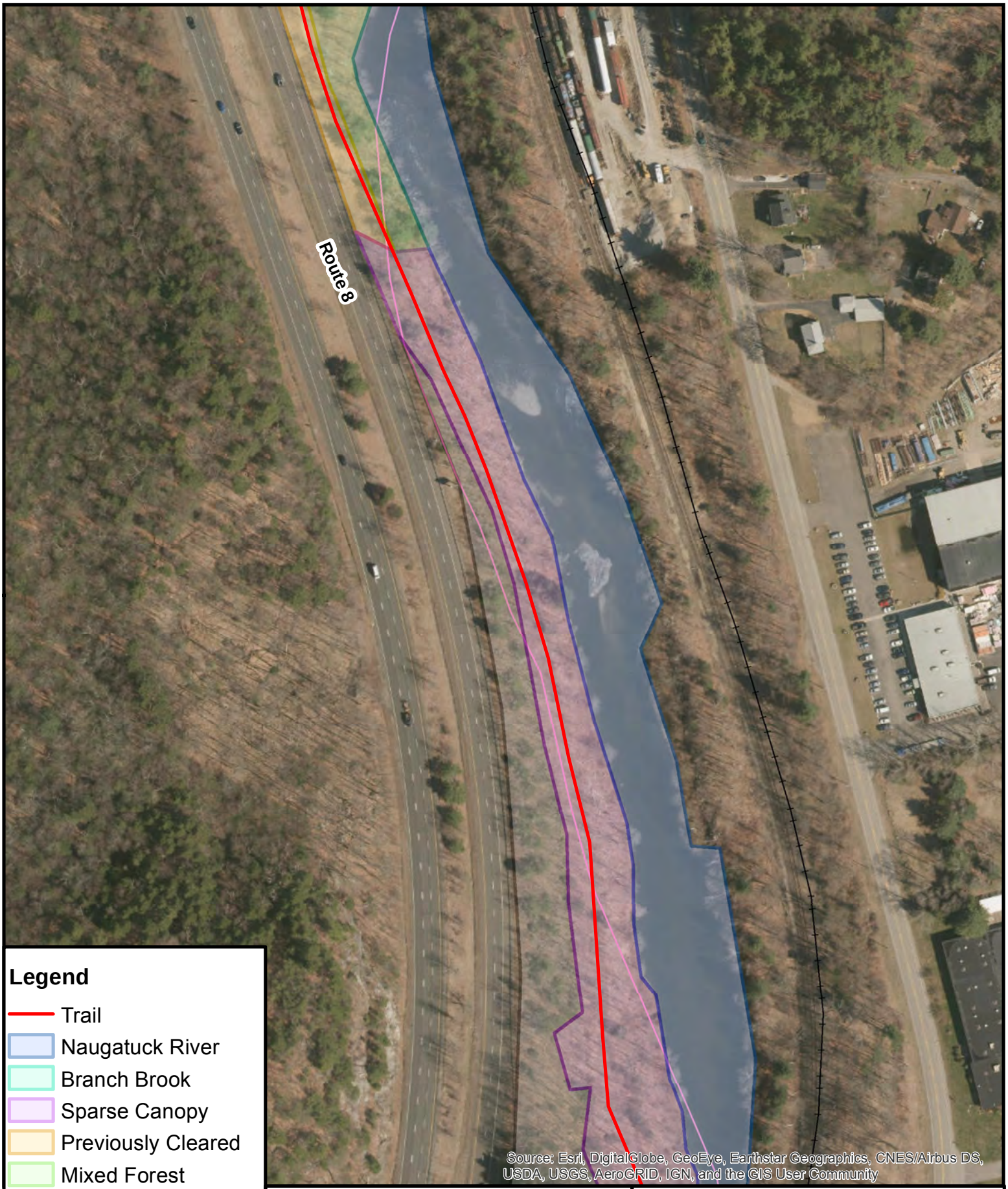
Architecture
Engineering
Environmental
Land Surveying
BL Companies

Canopy Cover Type Map



Legend

- Trail
- Naugatuck River
- Branch Brook
- Sparse Canopy
- Previously Cleared
- Mixed Forest
- Rock Slope
- Pond
- Town Line
- Railroad

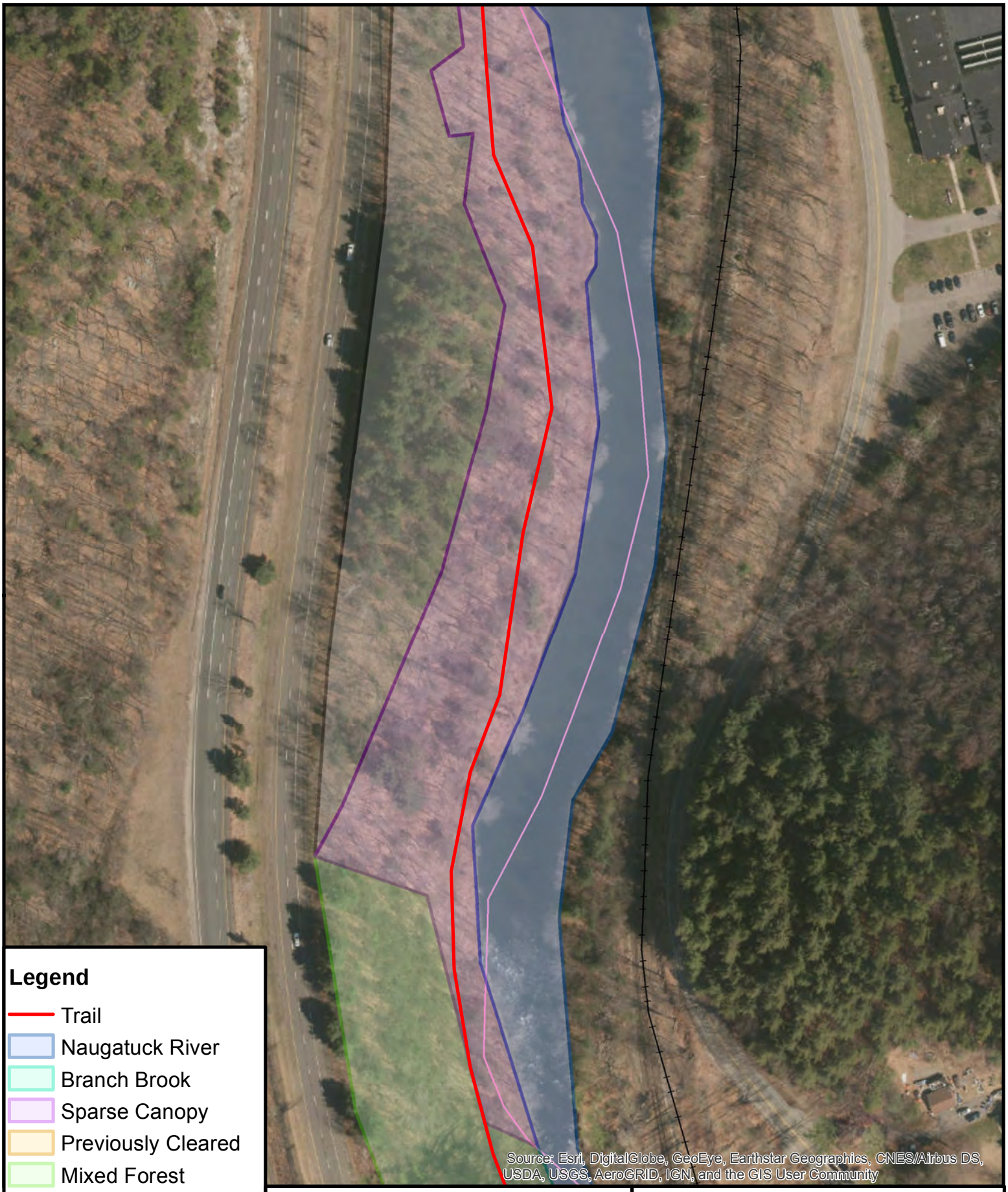
N

0 80 160 320 Feet

Naugatuck Valley Greenway
Proposed Trail Design
Thomaston and
Watertown, CT

BL Companies
Architecture
Engineering
Environmental
Land Surveying

Canopy Cover Type Map



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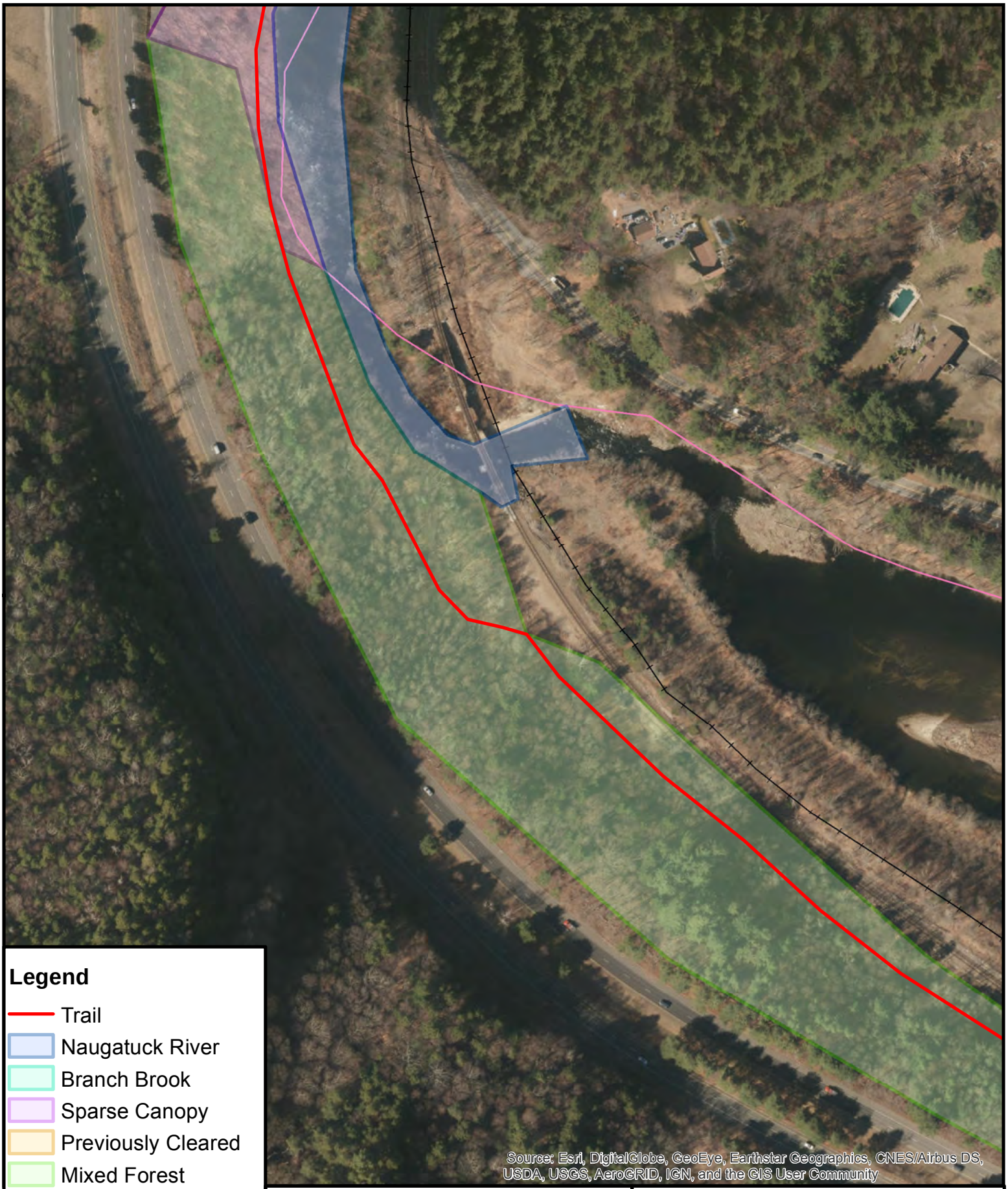

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Canopy Cover Type Map

Legend

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N

0 87.5 175 350 Feet

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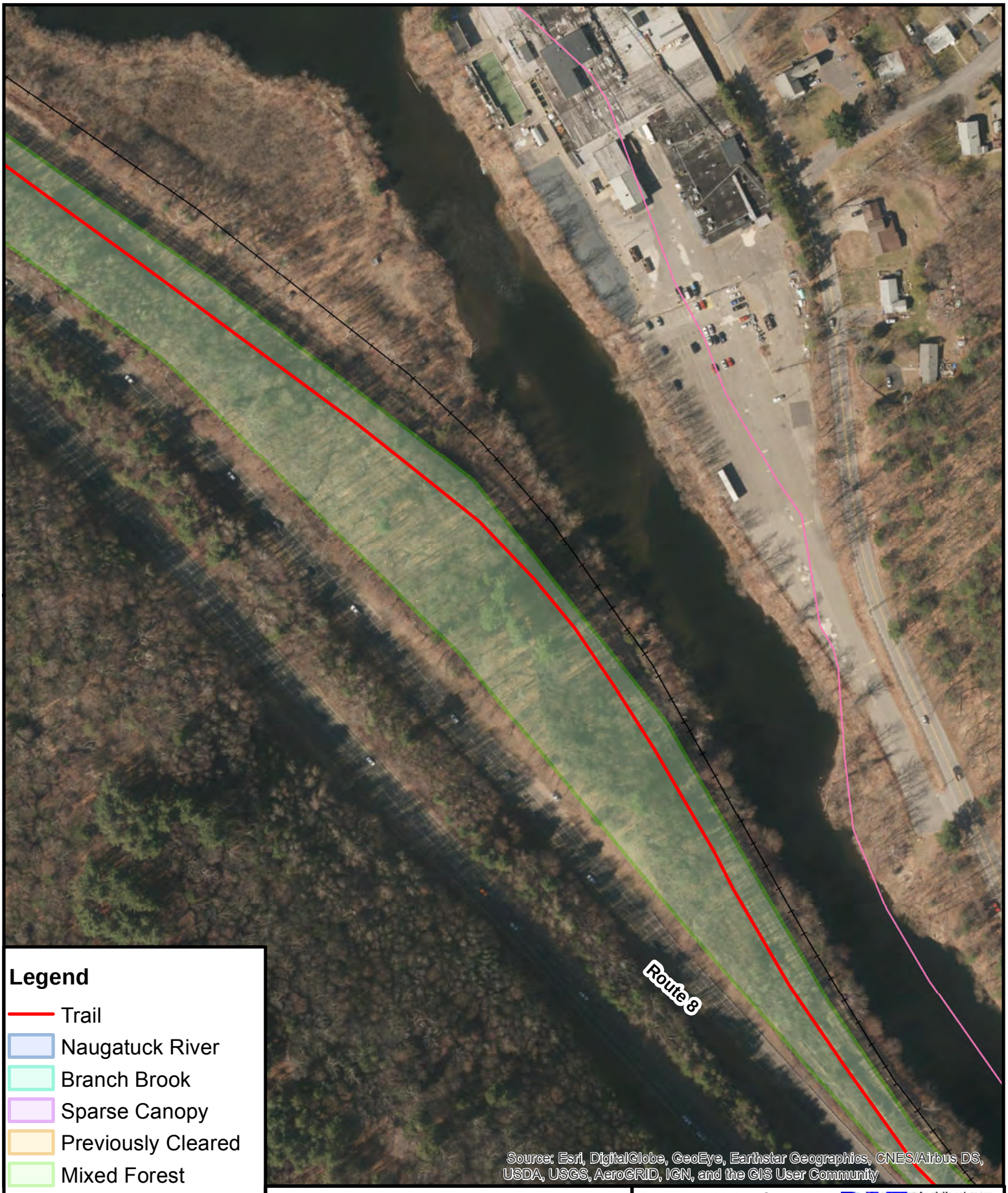

Legend

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- Branch Brook
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- Previously Cleared
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N

0 90 180 360 Feet

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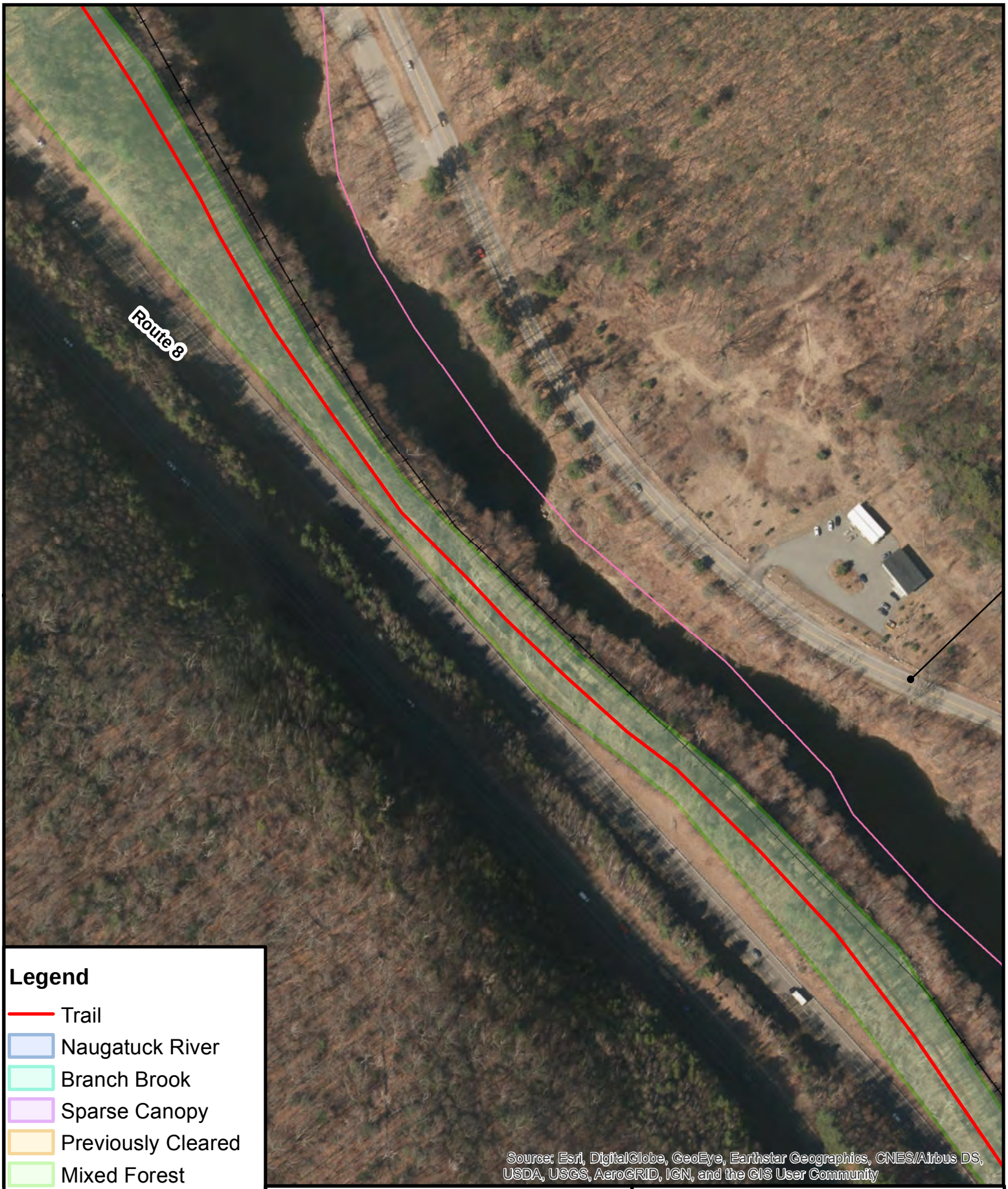
Canopy Cover Type Map



Legend

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- Naugatuck River
- Branch Brook
- Sparse Canopy
- Previously Cleared
- Mixed Forest
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- Pond
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N

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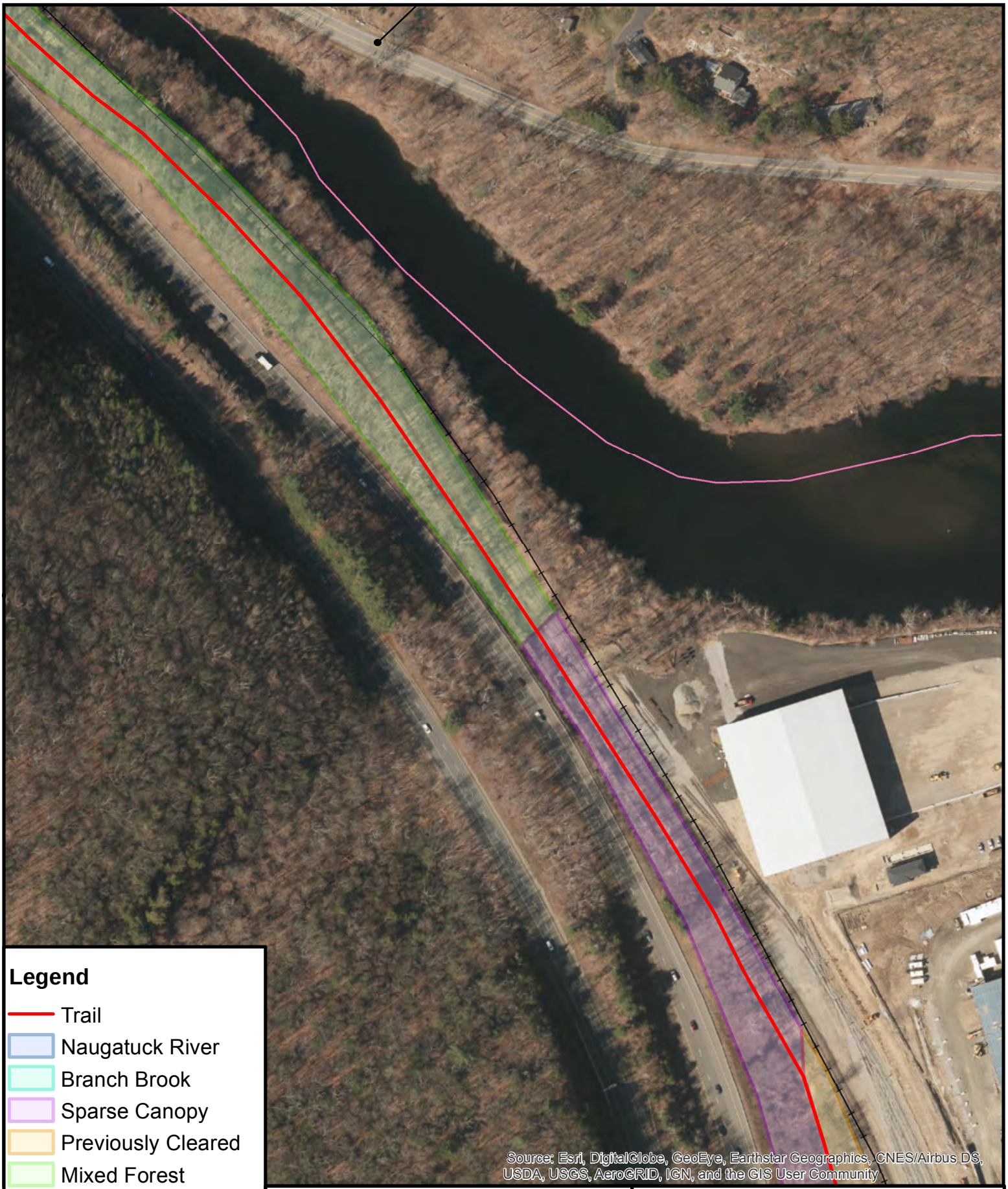

Legend

- Trail
- Naugatuck River
- Branch Brook
- Sparse Canopy
- Previously Cleared
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N

0 90 180 360 Feet

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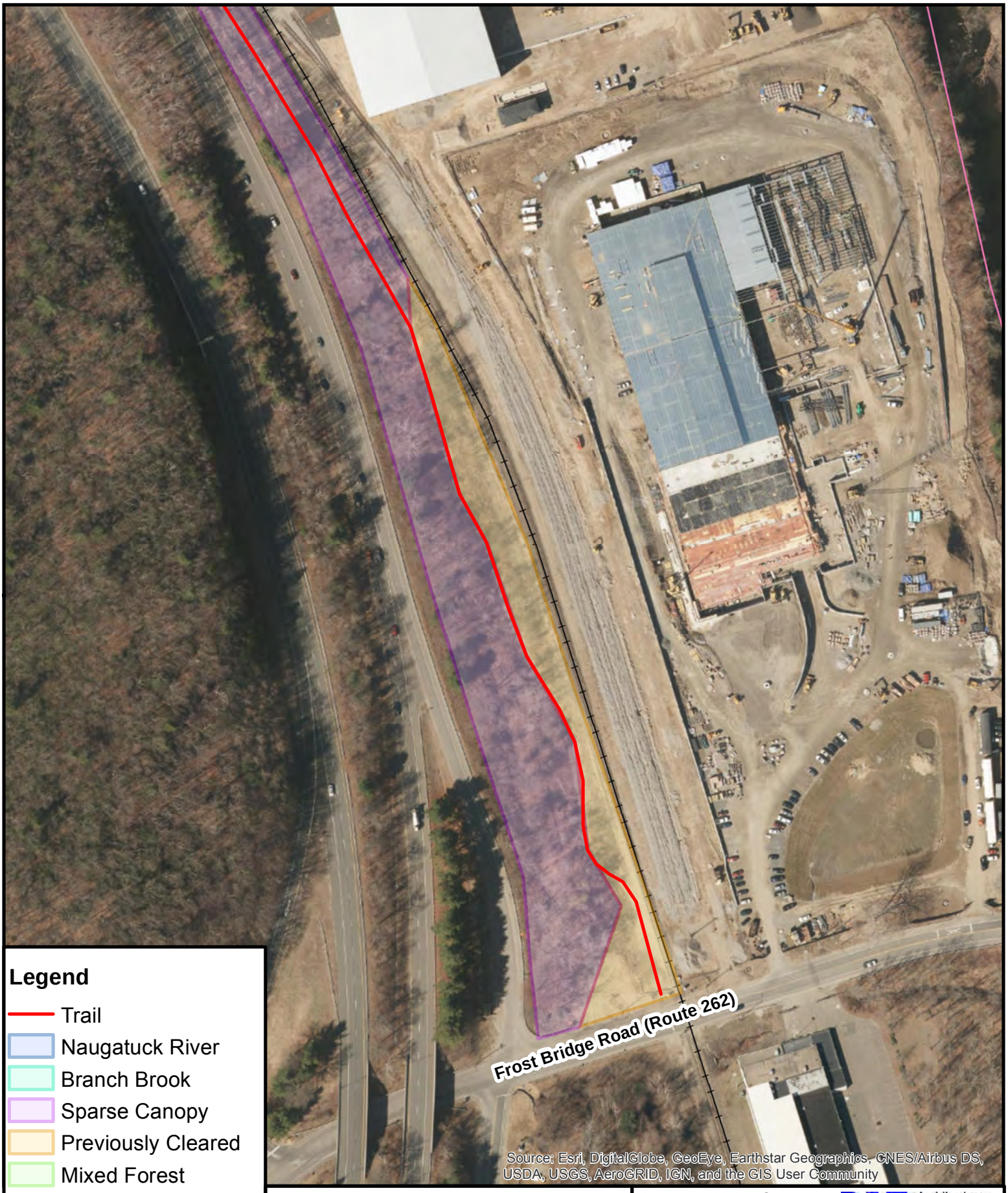

Legend

- Trail
- Naugatuck River
- Branch Brook
- Sparse Canopy
- Previously Cleared
- Mixed Forest
- Rock Slope
- Pond
- Town Line
- Railroad

N

0 85 170 340 Feet

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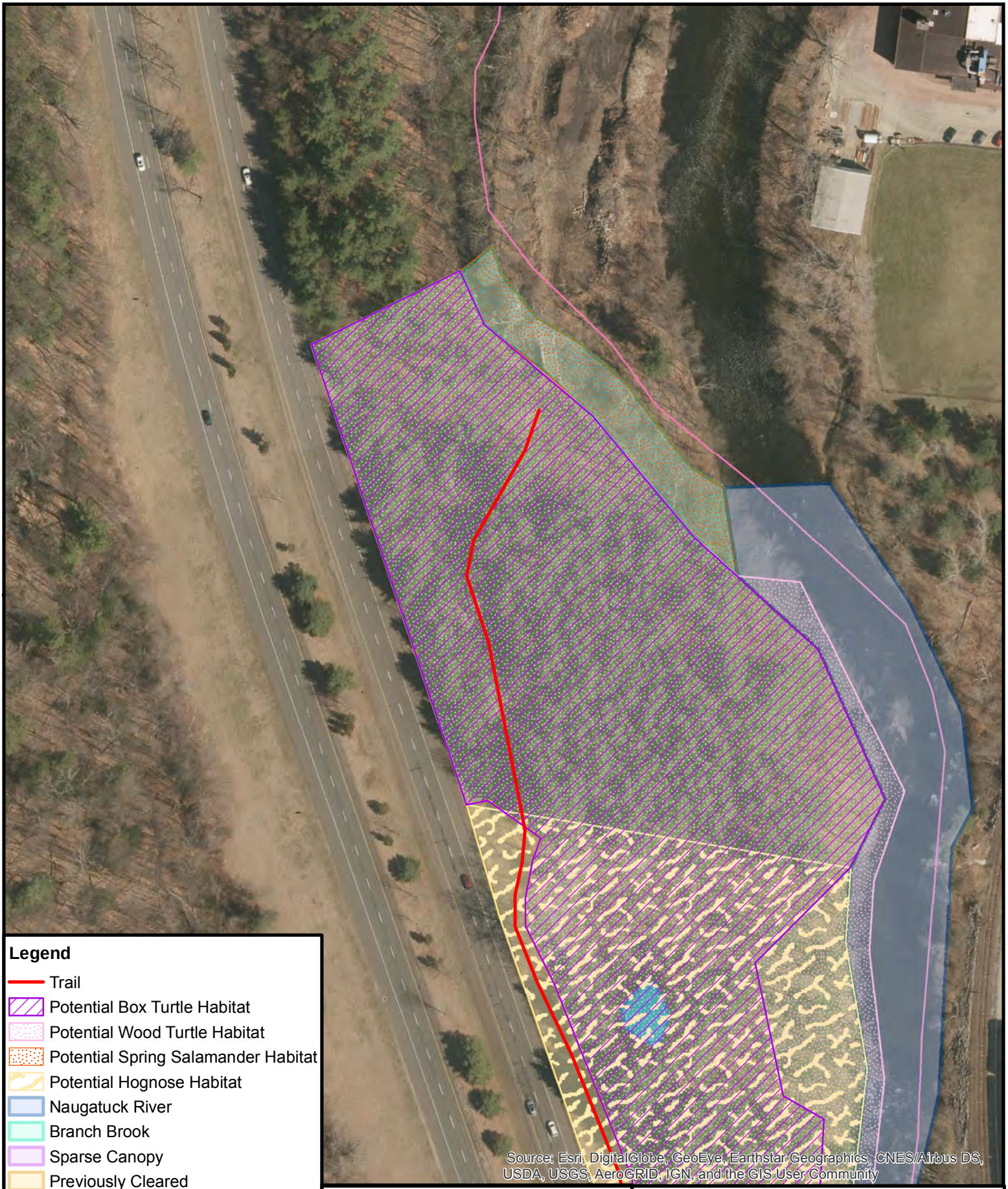
Canopy Cover Type Map



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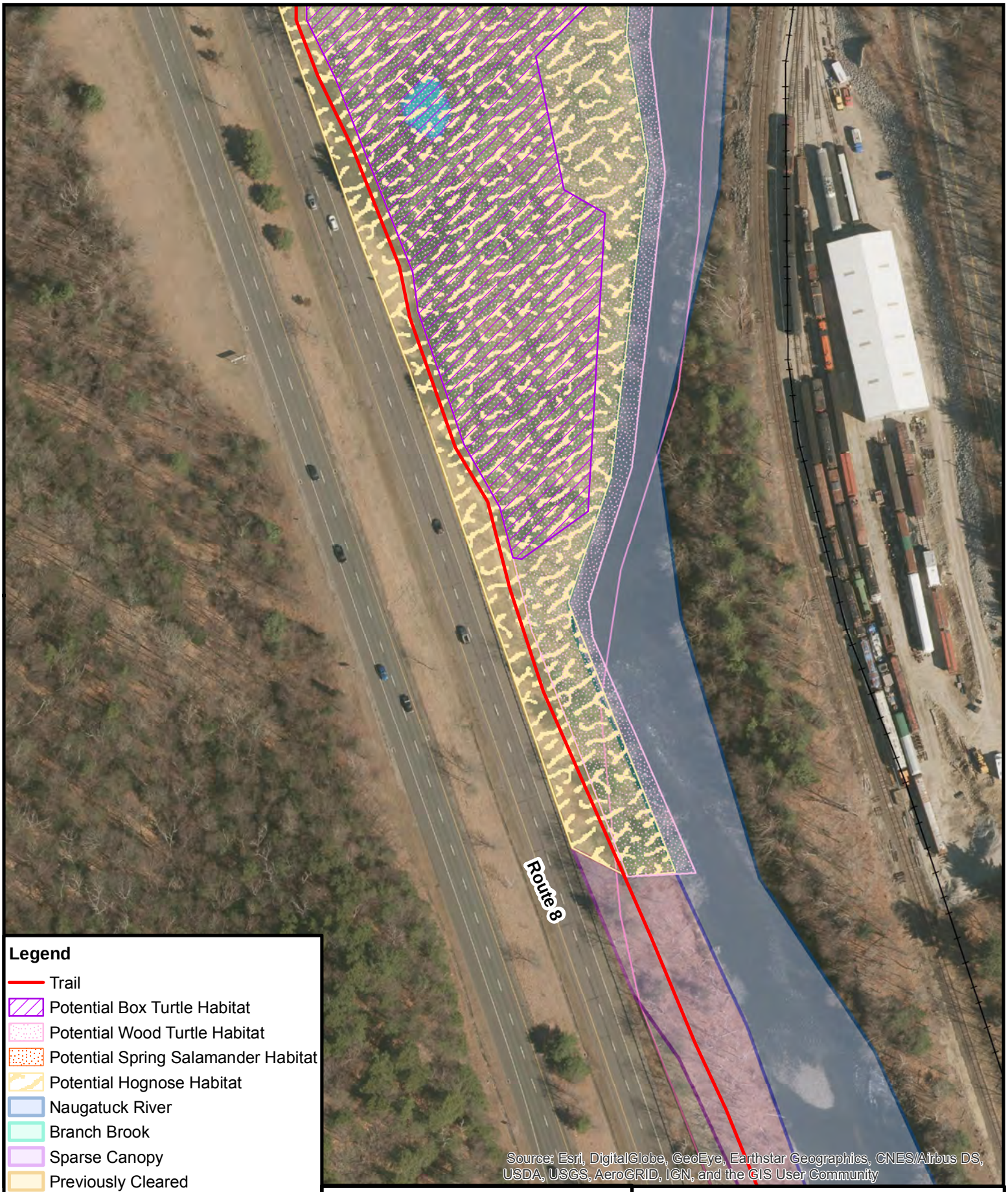
Potential Habitat Map



Legend

- Trail
- Potential Box Turtle Habitat
- Potential Wood Turtle Habitat
- Potential Spring Salamander Habitat
- Potential Hognose Habitat
- Naugatuck River
- Branch Brook
- Sparse Canopy
- Previously Cleared
- Mixed Forest
- Rock Slope
- Pond
- Town Line
- Railroad

N

0 45 90 180 Feet

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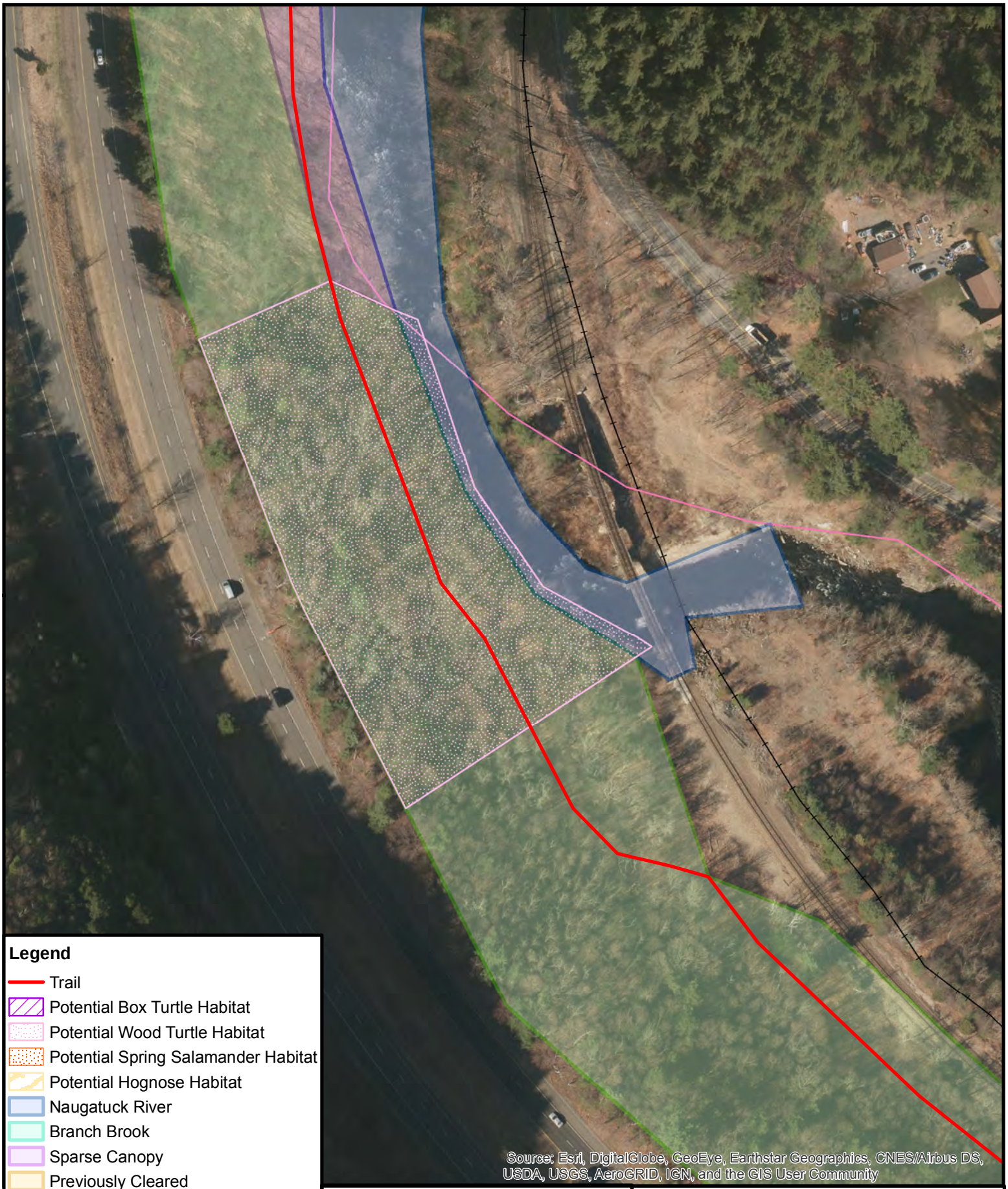
Potential Habitat Map



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Potential Habitat Map

Photo 1: View of Branch Brook from the existing trolley bridge.

Photo 2: General view of forest along the existing trail.

BL Companies Architecture Engineering Environmental Land Surveying	15L4864	**Naugatuck River Greenway** **Thomaston/Watertown, CT**	**FIGURE 1**

Photo 3: View existing forest and grassy understory along the eastern portion of the trail.

Photo 4: View of the Naugatuck River from the eastern portion of the trail.

BL Companies Architecture Engineering Environmental Land Surveying	15L4864	**Naugatuck River Greenway** **Thomaston/Watertown, CT**	**FIGURE 2**

Photo 5: View of rock outcropping along the western portion of the trail.

Photo 6: View of unnamed watercourse in the southern portion of trail.

BL Companies Architecture Engineering Environmental Land Surveying	15L4864	**Naugatuck River Greenway** **Thomaston/Watertown, CT**	**FIGURE 3**

Photo 7: View of gravel portion of the trail in Watertown.

Photo 8: View of forest and riprap along thee western portion of the trail.

Thomaston – Watertown Naugatuck River Greenway Project

Breeding Bird Survey and Habitat Evaluation

Spring/Summer 2015

Jeremy Leifert – Town of Thomaston, Land Use Administrator

January 2016

Table of Contents

I. Introduction

As part a regional trails planning initiative to design and construct a greenway from Derby, CT north to Torrington, CT along the Naugatuck River, the towns of Thomaston and Watertown, CT formed local groups to cooperatively plan a trail route and secure funding to design and construct sections of trail through their respective towns. As part of an application for grant funding under the Recreational Trails Program (RTP) administered by the Connecticut Department of Energy and Environmental Protection (DEEP), a Natural Diversity Database (NDDB) review is required due to historical records of several endangered, threatened and special concern species within the planned project area.

This report summarizes a survey of avian species in a 2,000 foot section of the proposed trail from Route 262 (Frost Bridge Road) in Watertown north to Old Waterbury Road in Thomaston (Figure 1). Of specific concern in the surveys was the Alder Flycatcher (*Empidonax alnorum*), a species of special concern in Connecticut that prefers shrubby habitat near streams, ponds, and open wetlands. The purpose of this survey was (1) to identify the presence of any Alder Flycatchers during the breeding season (2) identify prime habitats typically preferred by the Alder Flycatcher and (3) identify any other endangered, threatened, special concern bird species or species of Greatest Conservation Need (GCN).

II. Site Description

The project site is situated between the CT-Route 8 highway and the Naugatuck River, following both in a north-south direction for the duration of the approximate 2,000 foot section of trail. The trail begins on Old Waterbury Road in Thomaston on the bank of the Naugatuck River and traverses southward through open areas around the perimeter of the Thomaston Water Pollution Control Facility. It traverses a historic trolley bridge near the confluence of Branch Brook and the Naugatuck River and then enters forested areas containing both a mix of red maple forest and mixed hemlock-hardwood forest. The trail continues between the Naugatuck River and the Route 8 Highway, eventually following the existing Naugatuck Railroad rail line as it crosses to the west side of the river. The trail opens into riparian shrubland habitat close to the Naugatuck River, then moves away from the river into mixed hardwoods for the southern portion of the route. Much of the existing trail along this portion of the route is heavily used as an off-road vehicle trail and contains large patches of invasive plants, predominantly Japanese Knotweed (*Fallopia japonica*). The trail proceeds along the rail line and the river before terminating at Frost Bridge Road (CT Route 262) in Watertown.

III. Methods

A. Background Research

The following sources were reviewed for information regarding the status and life history of the Alder Flycatcher and other GCN or listed species:

- Atlas of Breeding Birds in Connecticut, 1994
- Draft 2015 Connecticut Wildlife Action Plan

- www.allaboutbirds.com – The Cornell Lab of Ornithology

Research was also conducted for past area survey work or observations in the vicinity of the study area to compare potential landscape changes or environmental pressures that may affect the study area.

B. Point Count Surveys

Breeding bird point counts were conducted during late May and June to survey for the presence of breeding birds within the study area. The methodology for the point counts is as follows:

- Points were evenly distributed along the linear trail at intervals of approximately 300-350 meters, resulting in 12 survey points (Figure 2).
- Each point was surveyed twice with a two week minimum separation between visits.
- Each point was surveyed for 10 minutes for all birds detected (observed or heard) within 50 meters of the survey points. Birds detected but outside 50 meters were also noted.
- Notes were added for behavioral observations such as breeding behavior
- Surveys were conducted between the hours of 6:00 am and 9:00 am.
- Additional data was gathered, including: GPS point locations or survey points, start time, temperature, weather data, species detected, detection times and locations, and special notes.
- General notes were also recorded, included dominant habitat types, the presence of invasive plants and other miscellaneous notes and field observations.

C. Habitat Mapping

Habitat maps were created for the survey route, generally using the Route 8 highway and Naugatuck River as boundaries (Figure 3). Mapping for certain areas extended to areas across the river in locations where the river narrowed or the proposed trail was close to the river. The habitat maps were split into six different habitat types:

1. Mixed Hardwoods – Habitat dominated (> 50%) by hardwood species, such as maple, oak and ash, but with no greater than a 30% composition of softwood species
2. Softwood/Hardwood – Forest habitat with greater than a 30% composition of softwood species, such as pine or hemlock
3. Riparian Woodland – floodplain and lowland areas consisting of tree species generally greater than 20 feet in height
4. Scrub/Shrub – early successional upland areas consisting of tree and shrub species generally less than 20 feet in height
5. Riparian Scrub/Shrub – early successional floodplain and lowland areas consisting of tree and shrub species generally less 20 feet in height
6. Open/Maintained/Developed – developed areas of maintained lawn, buildings and asphalt and similiar

IV. Results

The following is a summary of the species and number of individuals detected within 50 meters of the points during the survey periods:

Gray Catbird – 35
Yellow Warbler – 32
Red Eyed Vireo – 29
American Redstart – 20
Song Sparrow – 19
Black Capped Chickadee – 11
Tufted Titmouse – 11
Ovenbird – 11
Veery – 9
Baltimore Oriole – 9
House Wren – 8
European Starling – 8
Common Yellowthroat – 8
American Robin – 7
Northern Waterthrush – 6
American Goldfinch – 6
Eastern Towhee – 5
Chestnut-Sided Warbler – 5
Blue Jay – 4
Mourning Dove – 4
Chipping Sparrow – 4
Downy Woodpecker – 4
House Finch – 3
American Crow – 3
Black and White Warbler – 3
Tree Swallow – 2
Scarlet Tanager – 2
Common Merganser – 2
Broad Winged Hawk – 1
Eastern Wood Pewee – 1
Eastern Phoebe – 1
Killdeer – 1
Northern Mockingbird – 1
Hooded Merganser – 1
Blue-Gray Gnatcatcher – 1
House Sparrow – 1
Red-Bellied Woodpecker – 1
Prairie Warbler – 1
Common Grackle – 1
White-Breasted Nuthatch – 1

V. Conclusions/Recommendations

A. State Listed Species

While historical records show the presence of the Alder Flycatcher within the vicinity of the project area, none were detected in this survey. Small pockets of the Alder's preferred breeding and nesting habitat - shrub and alder thickets along riparian zones - are present along the study route. Presently, habitat fragmentation and disturbance due to the adjacent highway as well as off-road vehicle use on the existing trail negatively affect the likelihood of successful nests is the vicinity of the trail.

One state special concern species, the Broad-Winged Hawk (*Buteo platypterus*), was detected within the project area. As Broad-Winged Hawks tend to avoid nesting in areas with excessive human disturbances, such as the adjacent Route 8 highway and off-road vehicle disturbance along the project route, the project area is unlikely to support a successful nest.

B. Species of Greatest Conservation Need (GCN)

The list of detected species was reviewed for species of Greatest Conservation Need (GCN) as listed in the latest Connecticut Wildlife Action Plan. The Plan categorizes species of conservation concern as "important", "very important" or "most important".

One species listed as "most important", the Prairie Warbler (*Setophaga discolor*) was detected. As a bird of shrubland and early successional forest along forest edges, the habitat within the survey area appears to be marginal when compared to the preferred breeding and nesting habitat of this species. Efforts should be made to preserve the small pockets of shrubby edge habitat areas near the project site.

Several "very important" species were detected within the project area. These include the Chestnut-Sided Warbler (*Setophaga pensylvanica*), Eastern Towhee (*Pipilo erythrophthalmus*) and Scarlet Tanager (*Piranga olivacea*).

Additionally there were six different species listed as "important" that were detected during the surveys: Baltimore Oriole (*Icterus galbula*), Black and White Warbler (*Mniotilta varia*), Eastern Wood Pewee (*Contopus virens*), Northern Waterthrush (*Parkesia noveboracensis*), Ovenbird (*Seiurus aurocapilla*) and Veery (*Catharus fuscescens*).

The majority of these species utilize a mix of edge habitat and interior forest habitat with varying preferences for understory density for breeding and nesting. Minimizing removal of existing trees and shrubs is recommended to preserve existing habitat and provide cover.

C. Habitat Management Recommendations

As the majority of the habitats throughout the study area are relatively similar mixed hardwood stands with the exception of a few patches of softwood/hardwood forest and riparian scrub/shrubland, a generalized habitat management plan for the entire site that preserves existing forest and shrub cover while controlling invasive plants should be developed. Although the patches of Japanese Knotweed present along the proposed trail seem to provide ample cover for breeding and nesting birds, especially the Gray Catbird, any trail construction efforts should include invasive plant control and substitution with native shrub plantings to preserve the habitat. Any construction plan should attempt to avoid further landscape fragmentation for those species dependent on larger tracts, such as the Ovenbird. Any excessive clearing and removal of trees and shrubs along the survey route should be avoided and may have a reasonable likelihood of affecting potential nesting locations for the GCN species within the project area. Steps should also be taken during trail construction to preserve the existing hemlock-hardwood forest patches along the proposed trail area for breeding and nesting Scarlet Tanagers. Minimizing deciduous tree removal or understory disruption is advised for breeding and nesting habitat for these species. Any trail construction efforts should take place outside of the typical nesting season. Control of off-road vehicle use through proper enforcement is likely to increase potential nesting success.

VI. References

1. **The Atlas of Breeding Birds of Connecticut.** 1994. State Geological and Natural History Survey of Connecticut. Edited by Louis R. Bevier. Illustrations by Michael DiGiorgio.

2. **Connecticut's Wildlife Action Plan, 2015 Revision. Connecticut Department of Energy and Environmental Protection. October 28, 2015. Web. Retrieved December 4, 2015.** www.ct.gov/deep/cwp/view.asp?a=2723&q=329520&deepNav_GID=1719

3. **All About Birds. The Cornell Lab of Ornithology. Web. Retrieved December 4, 2015.** www.allaboutbirds.org

4. **Connecticut Wildlife: Biodiversity, Natural History and Conservation.** 2004. Geoffrey A. Hammerson. Lebanon, NH. University Press of New England.

Appendix I: Figures

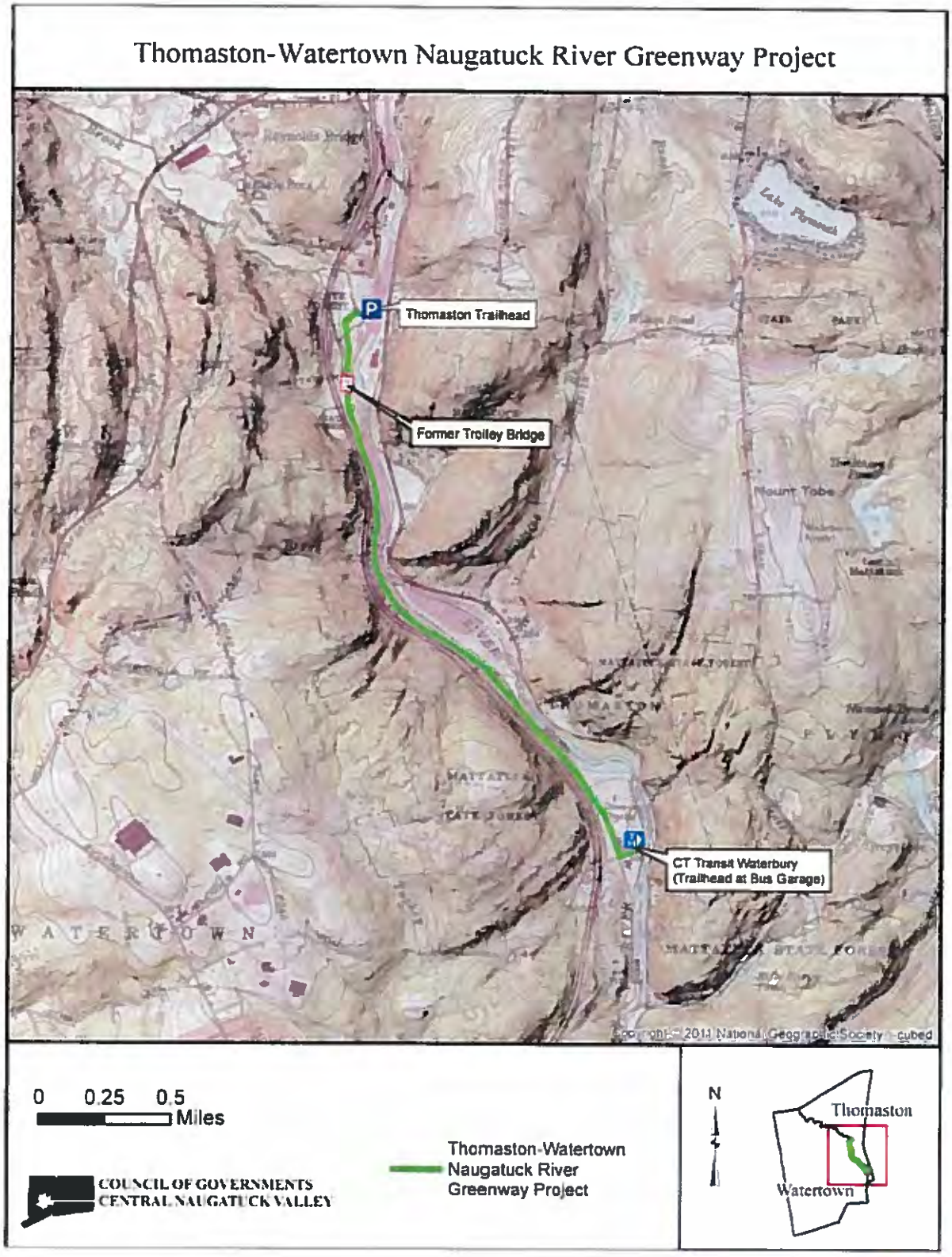

Figure 1: Proposed Trail Location Map

Figure 2a: Point Locations #1 through #4

Figure 2b: Point Locations #5 through #8

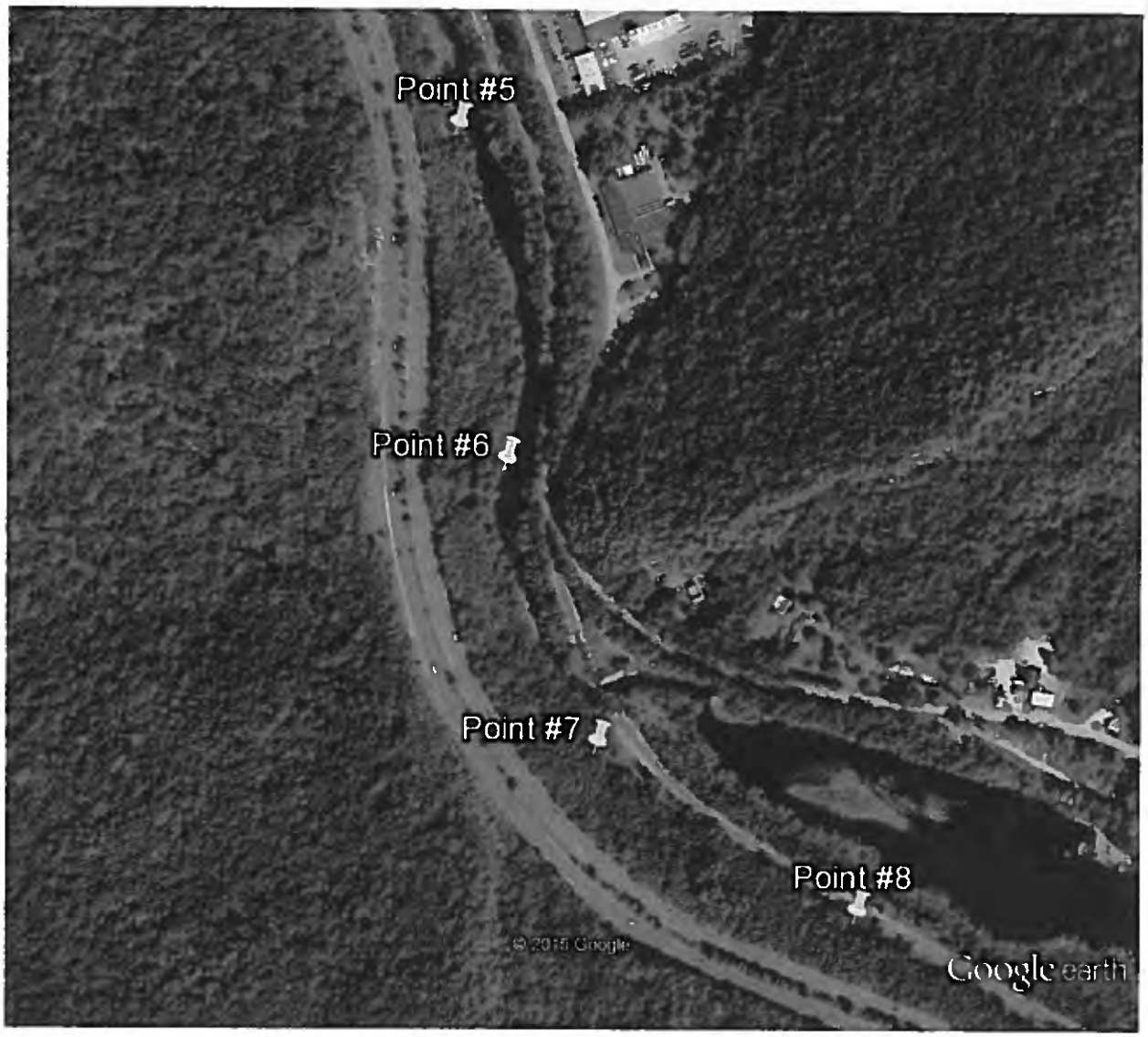

Figure 2c: Point Locations #9 through #12

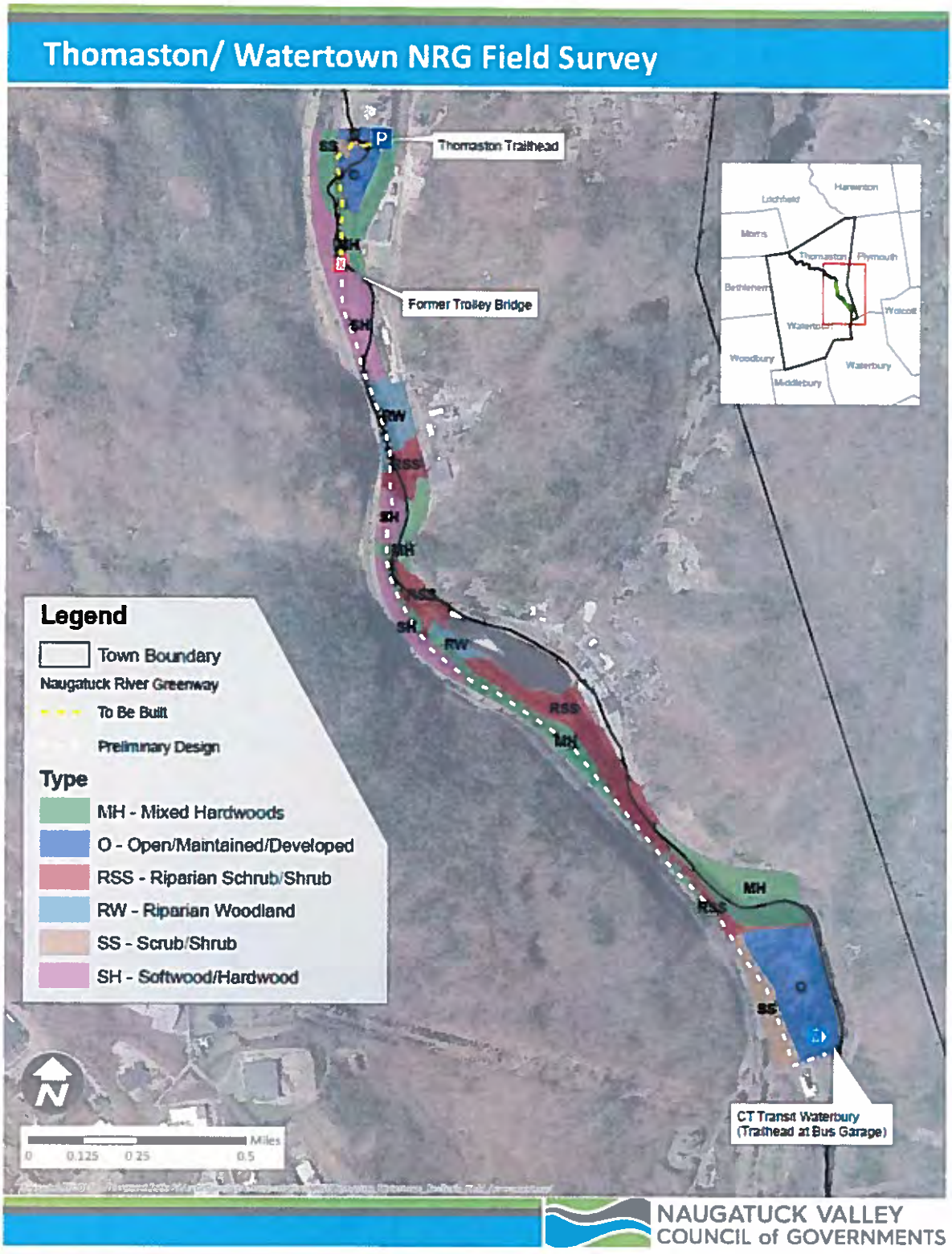

Figure 3: General Cover Map