Lockport-Batavia Line 112

Rebuild Project

Exhibit 4

Environmental Impact

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EXHIBIT 4: ENVIRONMENTAL IMPACT

4.1 INTRODUCTION

The Applicant[1] proposes to construct, operate, and maintain a Project of approximately 21.7 miles in length extending (west to east) from the City of Lockport, through the Town of Lockport and the Town of Royalton, Niagara County, NY to the Town of Alabama, Genesee County, NY. The location of the portion of Existing Line 112 to be rebuilt as part of the Project is shown on the drawings in Exhibit 2 of this Application. The location of the Project is also shown on Figure 4.1-1 of this Exhibit, from Structure 1-2 to Structure 211.

The Project has been divided into six Segments[2] (Segments 1-5 and Segment 7). The portion of Existing Line 112 from Structure 141 to Structure 159 is identified as Segment 4 Existing. This portion of Existing Line 112 is proposed to be relocated to the portion of the Project right-of-way ("ROW") designated as Segment 4 Relocated. Segment 4 Relocated is located approximately 0.2 miles to the north of Segment 4 Existing in the Town of Alabama within portions of the Tonawanda Wildlife Management Area ("TWMA"). A detailed description of the Project is provided in this Exhibit in Section 4.2 – Project Description.

In the Project, the Applicant proposes: removal of all remaining steel tri-leg towers; replacement of tangent structures with galvanized tubular steel structures directly embedded into native soils; replacement of angle and dead-end structures with steel poles on caisson foundations; and replacement of existing conductor and shield wire. In select locations, Existing Line 112 shares double-circuit towers with Existing Line 111. In these locations, the existing double-circuit lattice tower structures will be replaced with galvanized tubular steel pole double-circuit structures set upon foundations. The Project will require the acquisition of new ROW for Segment 4 Relocated and additional ROW adjacent to the Existing ROW in Segments 3, 5 and 7 to ensure conformance with the Applicant's Transmission Right-of-Way Management Program ("TROWMP").

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[1] In this exhibit, the term "Applicant" and numerous other capitalized terms are defined in the Glossary included in this Application.

[2] Another segment of Existing Line 112, designated as Segment 6, extends approximately 1.9 miles on the site of the Western New York Science and Technology Advanced Manufacturing Park being developed by the Genesee County Economic Development Center, from new Structure 173 ½ to new Structure 184 ½. Segment 6 is not part of the Project. It was the subject of a report to the Commission under 16 NYCCR Part 102 (Case 22-T-0502). The Applicant intends to include as-built drawings of Segment 6 in the EM&CP.

This Exhibit assesses the existing environmental conditions and presents the potential environmental impacts associated with The Applicant's construction, operation and maintenance of the Project, including any potential impacts associated with the removal of the portion of Existing Line 112 in Segment 4 Existing. Field investigations, literature reviews, and agency consultations were conducted to identify and assess existing environmental conditions and potential impacts of the Project.

The Project minimizes impacts on environmental resources, existing and planned land uses, and the surrounding communities to the maximum extent practicable by utilizing a combination of Existing ROW and adjacent expansion only as necessary (Segments 1-3, Segment 5, and Segment 7), and new ROW to implement a re-route of Segment 4 Existing to Segment 4 Relocated that is less impactful to wetlands and the TWMA.

4.2 PROJECT DESCRIPTION

A general description of each Segment and the facilities to be installed and/or removed is provided in Table 4.2-1. The "Cross-Section Drawings" in Exhibit 5 depict Existing Line 112 and Rebuilt Line 112.

4.2.1 Proposed Supplemental Property Rights

The Existing ROW varies in width and is comprised of a combination of fee-owned property and easements. The need to acquire new ROW for the Project occurs within the TWMA (*i.e.,* Structures 141 to proposed Structure 159-1) in Segment 4 Relocated and will generally consist of acquiring operational easement, danger tree rights, and/or access rights in various locations. Expanded property rights adjacent to the Existing ROW also will be necessary for the Project.

Segment 1 will not require any additional property rights, as the structures within this Segment are located entirely within a shared transmission line corridor wholly owned by National Grid.

Segment 2 will not require any additional property rights, as the structures within this Segment are located entirely within a shared transmission line corridor wholly owned by National Grid.

Segment 3 will require the acquisition of 40 feet of operational easement for the first 0.35 miles and an additional 60 feet of operational easement for the remaining 1.84 miles, along with danger tree rights. The structures within this Segment are located in a ROW easement held by National Grid, with additional property rights adjacent to the Existing ROW to be acquired to ensure conformance with the Applicant's TROWMP.

Segment 4 Existing will not require any additional property rights, as most of the structures within this Segment will be removed. At the (New York State Department of Environmental Conservation's ("NYSDEC") request, National Grid will retire in-place select existing steel tri-leg structures to allow for avian nesting.

Segment 4 Relocated, a proposed approximately 2.2-mile reroute, will require the acquisition of a new 100 feet wide ROW consisting of operational easement for its entire length, along with danger tree rights.

Segment 5 will require the acquisition of 60 feet of operational easement in addition to danger tree rights. The structures within this segment are located in a ROW easement held by National Grid, with additional property rights adjacent to the Existing ROW to be acquired to ensure conformance with the Applicant's TROWMP.

Segment 7 will require the acquisition of 60 feet of operational easement in addition to danger tree rights. The structures within this segment are located in a ROW easement held by National Grid, with additional property rights adjacent to the Existing ROW to be acquired to ensure conformance with the Applicant's TROWMP. Structures 190 to Structure 197 are located within the John White Wildlife Management Area ("JWWMA").

For purposes of clarification within this Exhibit, the Applicant owns a combination of fee and easement rights over the length of the Project. New easements of the following types will be required:

1. Operational (Gross) Easement: The perpetual right, privilege and easement to construct, reconstruct, relocate, extend, repair, maintain, operate, inspect, patrol, and, at National Grid's pleasure, remove any poles or lines of poles or both, supporting structures, cables, cross-arms, overhead and underground wires, guys, guy stubs, insulators, transformers, braces, fittings, foundations, anchors, lateral service lines, communications facilities, and other fixtures and appurtenances, with rights for ingress and egress, clearing and trimming.

2. Danger Tree Easement: The perpetual right to remove trees (all or any portion thereof) which are adjacent to an existing easement area or fee property that, in the opinion of National Grid, may jeopardize the integrity or safe and reliable operation of the National Grid Facilities.

Table 4.2-1 below provides a general summary and description of National Grid's existing property rights and the new property rights needed for the Project.

Table 4.2-1 General Summary and Description of National Grid's Existing Property Rights and the New Property Rights Needed for the Project

Segment	Length	Existing T-Line Facilities	Proposed T-Line Facilities	Existing Property Rights	Property Rights to be Acquired	General Land Use Characterization and Nearby Local Landmarks
1	± 0.43 miles Existing Str. 1-2 to Existing Str. 6	Existing Line 112 on steal tri-pole and double circuit lattice or box steel structures	• Rebuild Existing Line 112 with galvanized tubular steel structures. • Rebuild on existing centerline from Str. 1-2 to Str. 6	Fee-owned strip and easement of varying width (up to 200'+).	• None	Segment 1 is an existing ROW leading east out from Structure 1-2 paralleled by other transmission lines (including the Lines 113/114, 107, 108, and 111 lines.) The Project ROW crosses the Erie Canal, the Erie Canalway Trail, NYSEG 35.5 kV lines, Bear Ridge Rd., and Lockport Bypass (Rt 93). Adjacent land uses are mostly industrial, commercial, public services and vacant land.
2	± 10.85 miles Existing Str. 6 to Existing Str. 119	Existing Line 112 on steel tri-leg towers	• Rebuild Existing Line 112 with galvanized tubular steel structures. • Rebuild on existing centerline from Str. 6 to Str. 119.	Fee-owned strip and easement of varying width (up to 200'+).	• None	Segment 2 is an existing ROW paralleled by other transmission lines (including the Lines 113/114 and the 107, 108, and 111 lines.) The Project ROW crosses Londonaire Dr. S Transit Rd. (Rt 78), Snyder Dr., Locust St. Ext., Beattie Ave., Bowmiller Rd., Wynkoop Rd., Oak Ln., Akron Rd., Singer Rd., Gasport Rd., Ward Rd., Royalton Center Rd., Arnold Rd., and Lewiston Rd. Adjacent land uses are mostly commercial, residential, and agricultural.
3	± 2.19 miles Existing Str. 119 to Existing Str. 141	Existing Line 112 on steel tri-leg towers	• Rebuild Existing Line 112 with single-circuit wood pole delta davit arm structures and galvanized tubular steel structures. • Rebuild on existing centerline from Str. 119 to Str. 141.	Easement of varying width (22'-40').	• 40' from Mile 11.39 to Mile 11.82 • 22' and 38' on either side from Mile 11.82 to Mile 13.58 • Acquire danger tree rights as needed.	Segment 3 is an existing ROW solely occupied by the Existing Line 112. The Project ROW crosses Griswold Rd. and Lewiston Rd. Adjacent land uses are mostly residential, agricultural and Conservation Lands and Public Parks. Some structure reorganization will occur in the vicinity of existing Str. 118 and Str. 119 which will temporarily affect active agricultural land.
4 Existing	± 1.75 miles Existing Str. 141 to Existing Str. 159-1. This segment is the removal of the existing Line 112 from its present location.	Existing Line 112 on steel tri-leg towers	• None – Remove Existing Line 112	Easement of varying width (40'-80').	• None	Segment 4 Existing is an existing ROW solely occupied by Existing Line 112. The Project ROW crosses Meadville Rd. Adjacent land uses are mostly residential and agricultural and Conservation Lands and Public Parks.
4 Relocated	± 2.2 miles Existing Str. 141 to Proposed Str. 159.	None	• New Relocation of the Line 112 with galvanized tubular steel structures.	None	• Easement of 100' width. Acquire danger tree rights as needed.	Segment 4 Relocated will be within a newly acquired ROW. Adjacent land uses include residential, agricultural and the TWMA.
5	± 1.45 miles Proposed Str. 159-1 to New Str. 173 ½	Existing Line 112 on steel tri-leg towers	• Rebuild Existing Line 112 with single-circuit wood pole delta davit arm structures and galvanized tubular steel H-frame structures. • Rebuild on existing centerline from Str. 159-1 to new Str. 173 ½.	Easement of varying width (20'-40').	• 20' and 40' on either side from Mile 15.78 to Mile 17.23 • Acquire danger tree rights as needed.	Segment 5 is an existing ROW solely occupied by the Existing Line 112. The Project ROW crosses Judge Rd. Adjacent land uses are mostly residential and agricultural.
7	± 2.58 miles New Str. 184 ½ to Existing Str. 211	Existing Line 112 on steel tri-leg towers	• Rebuild Existing Line 112 with wood pole delta davit arm structures and galvanized tubular steel structures. • Rebuild on existing centerline from new Str. 184 ½ to Str. 211.	Easement of varying width (20'-40').	• 20' and 40' on either side from Mile 19.10 to Mile 21.68 • Acquire danger tree rights as needed.	Segment 7 is an existing ROW solely occupied by the Existing Line 112. The Project ROW crosses Alleghany Rd., Judge Rd., Kenyon Ave., and Wight Rd. Adjacent land uses are mostly residential, agricultural and the JWWMA

4.2.2 Construction of Overhead Transmission Lines

The Project will entail several distinct construction activities that typically progress in a linear and orderly manner from one point to another along the entire length of the Project ROW. The following describes the major construction activities that will occur on the Project.

4.2.2.1 Right-of-Way Vegetation Management

The Existing ROW has long been maintained by the Applicant in accordance with its TROWMP and for the most part is best described as having a well-established cover of herbaceous and shrub communities or agricultural land. Where the Existing ROW traverses residential areas, there are certain locations where residential lawns and landscape plantings have been established. Most areas adjacent to the Existing ROW consist of a mix of sapling and pole size tree species and brush interspersed with areas of larger diameter mature tree species. Segments 1 and 2 of the Project ROW are located in the interior of a transmission ROW that also includes National Grid's Lines 107, 108, 111, 113, and 114 (between the Lockport Substation and Structure 119 near Johnson Road) for approximately 11 miles; therefore, minimal tree clearing is expected on this portion of the Project.

The Project will require the acquisition of expanded ROW on Segments 3, 5 and 7 as well as new ROW on Segment 4 Relocated where some removal of vegetation will be necessary. Within the Project ROW in these Segments trees and shrubs will be mowed or cleared to provide unimpeded and safe access to proposed structure work sites. Clearing will be kept to a minimum to protect soil stability, natural vegetation and adjacent resources, including wildlife habitat, while preventing interference of vegetation with the Rebuilt Line 112. Shrubs and low growing vegetation will be retained if they do not interfere with construction activities or the operational integrity of the line. Certain trees that are determined to pose a reliability hazard to the transmission line facility and are located adjacent to the Existing ROW or the new and expanded ROW areas will also be removed. In areas where residential landscape plantings are present, each tree will be evaluated for removal based on species, growth rate, and location on or near the Project ROW. Cut material will be either chipped or removed from the Project ROW except in some wetland areas where vegetation may be dropped and lopped to minimize disturbance. No cut or chipped material will be left on the Project ROW in residential areas.

The site-specific clearing and vegetation management techniques, as well as the slash disposal techniques, to be used for the construction of the Project will be set forth in the Environmental Management and Construction Plan ("EM&CP").

Upon completion of construction, the Project ROW will be maintained under National Grid's TROWMP, resulting in the same herbaceous and shrub cover type that presently occurs on the Existing ROW.

4.2.2.2 Access

Beginning at the point of entry to the Project ROW at each public way, access will be established to allow for the movement of workers and heavy equipment to reach all structures, including existing structures to be rebuilt, new structures and structures that are scheduled for removal. Dead-end structures and non-tangent structures will require foundations. On Segment 4 Existing, where the only activity will be the removal of existing structures, it is anticipated that the use of tracked equipment and construction matting will minimize the need for most, if not all, road improvements.

Where access is needed in the vicinity of the TWMA, existing access roads will be utilized to the maximum extent possible. These existing roads are often located on berms and upland areas but may still require the use of matting.

Where the Existing ROW traverses commercial or industrial areas, there are existing paved and gravel surfaces, parking lots and travel lanes that offer good access to the structure locations. These existing features will be used to the fullest extent practicable in order to minimize potential adverse impacts on the environment during construction.

The Applicant intends to construct permanent access roads ("PARs") in some areas where NYSDEC regulated wetlands and agricultural fields are not present. The proposed locations of PARs and temporary access roads for use during construction, both on and off-ROW, are shown on the Exhibit 2 figures.

The locations of proposed PARs are based primarily on factors such as the avoidance of environmentally sensitive resource areas (*i.e.,* wetlands, residential areas, culturally sensitive areas, and active agricultural fields); facilitation of future maintenance and storm restoration work; minimization of potential erosion problems; and maximization of the use of existing roadways. In

addition, with permission from affected landowners, off-ROW access may be prescribed in certain other locations to avoid or minimize impact to sensitive site conditions such as heavily timbered areas, steep slopes, streams, wetlands, and agricultural operations.

Mitigation measures such as the use of tracked equipment, low-ground-pressure equipment, and mats will be prescribed on a site-by-site basis in agricultural fields and environmentally sensitive areas. In addition, erosion and sediment control measures designed to maintain and protect soil and water resources both during and after construction will be utilized for all areas where soil disturbance occurs.

The location of all access roads, both on and off-ROW, and all mitigation measures and erosion and sediment control measures will be confirmed during final design and provided in the EM&CP. In addition, all erosion and sediment control measures will be prescribed in accordance with the NYSDEC State Pollutant Discharge Elimination System ("SPDES") General Permit for Discharges from Construction Activity (Permit GP-0-20-001), and the most current version of the NYSDEC "*New York State Standards and Specifications for Erosion and Sediment Control*" also known as the "Blue Book". Per these same standards, a Stormwater Pollution Prevention Plan ("SWPPP") will be prepared for the Project. See Exhibit 8 – Other Pending Filings, for more information.

4.2.2.3 Structure Design and Installation

The Project consists of replacing the existing steel tri-leg towers with new wood pole delta structures and galvanized tubular steel structures set on reinforced concrete caisson foundations or directly embedded. Additionally, the existing insulators, hardware, conductor and shield wire will be replaced.

The Applicant proposes to reconductor the Project portions of Existing Line 112, which features a number of different conductor types (as outlined in Exhibit 2), with 795 kcmil ACSR "Drake" (26/7) conductor, with a non-specular finish. This will bring the Rebuilt Line 112 to current National Grid 115kV standards. The Applicant also proposes to install fiber optic ground wire ("OPGW') in the shield wire position.

Detailed descriptions of the structures to be used are located in Exhibit 2, Exhibit 5, and Exhibit E-1. In addition, the "Cross-Section Drawings" in Exhibit 5 show the detailed centerline position of the existing and proposed structures on the Project ROW.

Once materials are delivered to the construction marshalling yards or staging areas, the primary construction activities at each new structure location will be excavation, foundation installation, structure assembly, and structure erection.

Transmission line structures typically will be located as far from public road, stream, and river crossings as practical to minimize construction-related effects on these areas and to facilitate the establishment of vegetative buffer strips of compatible species at these locations. In addition, the placement of transmission line structures in wetland areas and on steep slopes, heavily timbered areas, high points or ridge lines will be avoided where possible to preserve the natural landscape and minimize the risk of conflict with any present or known future planned land use. Transmission line structures will not be located within any identified archaeological sites.

4.2.2.4 Structure Installation in Wetland Areas

Structures will be located in a manner to avoid wetland areas to the extent practicable. When it is necessary to locate structures within the limits of a wetland, special construction methods and environmental procedures will be employed to minimize adverse environmental effects and protect the individual benefits and functions of the wetland. Wetlands will be individually reviewed to determine the best method of access to each structure and to prescribe the appropriate mitigation measures such as the use of tracked equipment, low-ground-pressure equipment, mats and/or scheduling construction during dry or frozen conditions. In wetlands, temporary construction work pads made of mats will be placed at each structure location to provide a level and stable work area to set up and operate the equipment necessary for the installation and erection of the new structures. Details regarding the size and location of each work area as well as the mitigation measures that will be used to minimize impacts on the wetland will be provided in the EM&CP.

4.2.2.5 Direct Embed

The primary structure type for the Project's tangent and minor angle structure replacements is a steel single circuit davit arm structure, which will be typically installed as direct bury. The direct bury method typically consists of setting the steel pole into a 12-gauge corrugated metal pipe (commonly referred to as a culvert) and backfilling. The hole for the installation is typically done by auguring. Upon setting the pole within the metal pipe, crushed stone backfill will be placed in the space remaining between the pole and the inside surface of the pipe and tamped at no greater

than 12-inch intervals. The purpose of the corrugated metal pipe is to provide a grounding system for the structure, ensure the excavation can be held open until the pole base is set, as well as to provide a foundation of suitable character to support the structure. Diameters of these culverts will range from 3 to 4 feet, depending upon the base diameter of the pole. The tangent and minor angle braced-post steel pole structures will also be directly embedded into native soils.

Typically, for structures in wetlands, temporary construction mats will be utilized for access and work pads to minimize ruts and soil compaction and the potential for erosion and sedimentation impact. In upland areas, mats will be used as necessary; however, in some locations only minor grading may be necessary to create a level and stable work pad. Construction matting may be used in upland areas where the Project ROW traverses residential or agricultural areas in order to minimize disturbance to the area.

Upon completion of construction, all work areas will be returned to approximate pre-construction conditions, unless otherwise requested by the landowner. Disturbed areas will be seeded and mulched and excess soil will be transferred to an upland area in the Project ROW or to an approved off-site, upland location.

4.2.2.6 Reinforced Concrete Foundations

It is anticipated that concrete caisson foundations will be used on most angle and all dead-end structures. The concrete foundation construction method typically involves the excavation of an 8- to 12-foot diameter hole to accommodate a 6- to 10-foot diameter caisson foundation. Holes are typically excavated to a depth of 15 to 50 feet to accommodate a permanent casing, rebar cage assembly, and anchor bolt clusters. Caisson foundations may be excavated with a large drilling machine, a tire-mounted backhoe, or track excavator. Erosion and sediment control measures will be prescribed as necessary to prevent runoff from reaching sensitive resources (e.g., wetlands and streams) adjacent to the work site.

If concrete foundations must be located in wetlands, excavated topsoil and subsoil will be segregated and temporarily stockpiled on construction matting or geo-textile fabric. Once the culvert form is placed in the excavated hole, native soil backfill will be placed around the foundation and the segregated topsoil will be spread over the disturbed areas and mulched. Excess soil will be permanently removed from the wetland and spread in appropriate upland areas within the Project ROW and seeded and mulched to prevent erosion.

If it appears that the initial excavation of a pier area or the pouring of the cement mixture into the caisson form will result in a discharge of water, specific dewatering procedures will be employed. Water will be pumped through a temporary portable geotextile filter bag or into a dewatering basin, which will trap and retain the sediment prior to the water discharging from the Project. Down gradient receiving areas must be well vegetated or otherwise stable to prevent erosion. Dewatering basins will be sized to prevent discharge water from overtopping the basin, include a dispersion method and shall be located as far from wetland areas as practical. Additional details regarding these methods can be found in the standard erosion and sediment control details to be included in the EM&CP.

After the cement mixture has been poured, has cured and the steel poles have been set, disturbed areas will be finish-graded, seeded appropriately for summer or winter conditions, and mulched. In wetland areas where grades have the potential to cause erosion, an approved wetland seed mix and straw mulch will be cast over disturbed soils to provide rapid germination of vegetation and prevent the introduction of undesirable upland or invasive plant species in wetlands.

4.2.2.7 Conductor Stringing

After the structures are erected, insulators will be installed and conductor and OPGW will be strung using a lead line and puller/tensioner machine. In sensitive environmental areas, low ground pressure equipment/UTV will be used to install lead lines. Conductors will be pulled through stringing blocks by the tensioning equipment that is staged at appropriate structure locations. During conductor stringing, temporary guard structures will be placed at all highway, hiking trail, and canal crossings, and near existing utility lines to ensure public safety and the continued operation of other utility equipment.

For the most part, conductor stringing sites will be designated at selected structure sites on the Project ROW. In some areas it may be necessary to acquire temporary property rights beyond the Project ROW in order to allow for the proper set-up and operation of the mechanized pulling equipment and conductor reels.

All conductor stringing sites will be identified in the EM&CP. Wetlands and other sensitive environmental sites will be avoided to the extent possible when locating such sites. If they cannot be avoided, temporary mats or other appropriate protective measures will be implemented, as specified in the EM&CP.

4.2.2.8 Structure Removal

The removal of existing structures will take place throughout the Project wherever they are no longer needed, except in select locations on Segment 4 Existing where NYSDEC has requested that select structures be retired in-place for avian nesting. Both wood pole structures and steel structures will be removed from the ROW.

Where steel structures are to be removed, they will be cut off at 18 inches below grade in all areas except agricultural fields where they will be cut off at least 48 inches below grade. All concrete will also be removed to the depths specified above. The scrap steel will be transported to the nearest ROW street crossing location that is accessible by truck for pickup. Scrap steel will be sized, placed into open containers, and delivered to National Grid approved recycling facilities, which are notified in writing that the steel may contain coatings containing lead. Dislodged pieces of coatings will be containerized and appropriately disposed separately. National Grid's Investment Recovery department will facilitate the reuse or recycling of all steel or metal components to be removed, including conductor, cable, wire, etc., as well as the old insulators. Concrete waste will be removed from the ROW and transported to a concrete salvage facility, if available, or it will be transported to a licensed construction and demolition disposal facility or solid waste landfill.

Where wood pole structures and any applicable anchors are to be removed, the pole butts will be removed unless the removal would likely cause an adverse environmental impact. They will then be transported to the nearest ROW road crossing that is accessible by truck for subsequent pick up and transport for disposal to a licensed landfill or incinerator. In sensitive areas such as wetlands or near stream banks where pulling the pole could cause significant ground disturbance, the pole butt may be cut at ground level and left in place. All steel or metal components, including conductor, cable, wire, etc., as well as the old insulators will be collected for reuse or recycling as directed by National Grid's Investment Recovery department.

For structure removal, existing access roads will be utilized wherever possible and will be improved only as required to provide safe and effective equipment access to each structure location where removal is scheduled. For the most part, access for structure removal will be on the same access used for the installation of the new structures. Within Segment 4 Existing (where no structures are being installed), it is anticipated that the use of smaller tracked equipment or low-

ground-pressure equipment and/or construction matting will minimize the need for most if not all road improvements.

All holes or cavities created by the removal of old facilities will be filled to the same level as the adjacent area plus 6 to 12 inches of additional soil to allow for settling, and all disturbed areas will be seeded and mulched.

4.2.2.9 Clean-up and Restoration

Clean-up and restoration activities will be conducted along the entire Project ROW as required as a result of structure construction or removal activities. Clean-up and restoration activities include, but are not limited to, the removal of all equipment and construction debris from the Project ROW; re-grading; removal of temporary erosion and sediment controls; restoration of wetlands and stream banks; temporary or permanent seeding and mulching for erosion control; reseeding or restoration of agricultural fields; tree and shrub plantings in vegetative buffer strips; and removal of temporary access roads and stream or wetland crossings. The specific restoration measures to be implemented will depend on the location and site-specific condition of the Project ROW, as set forth in the EM&CP, and will be implemented under the supervision of the Environmental Monitor.

4.2.2.10 Construction Coordination and Environmental Management and Construction Plans

The Applicant will plan and coordinate construction activities in the development of its EM&CP. Construction coordination includes but is not limited to: the designation of appropriate work areas; the development of traffic control plans; the identification of tree and brush clearing methods and slash disposal techniques; and structure assembly sites and conductor pulling sites. The advance planning of the Project by way of preparing an EM&CP will assure that safe traffic conditions on public roads are maintained; tree removal, brush clearing and slash disposal is properly conducted; work in residential areas, wetlands and other sensitive areas is conducted using best management practices; equipment operation and construction activities are limited to designated areas; and, appropriate erosion and sediment control measures are applied.

4.2.2.11 Construction Marshalling Yards or Staging Areas

During construction, it will be necessary to establish and utilize areas that will serve as location(s) for construction-related facilities such as:

- Office trailers;
- Personnel parking, portable sanitary facilities, and telephones;
- Material, equipment and vehicle storage; and
- Minor equipment and vehicle maintenance.

These areas, referred to as construction marshalling yards or staging areas, will be strategically placed at selected locations along or adjacent to the Project ROW or at selected off-ROW locations. These sites will normally be located adjacent to existing public roads where material deliveries can be efficiently conducted and sensitive areas such as wetlands, residential areas, known archaeological sites, and habitats that support rare, threatened, and endangered plants and animals will be avoided. Typically, an already developed area that requires minimal site improvements would be targeted for selection. Each area will be of sufficient size to accommodate the materials to be delivered and will serve as a major storage yard for poles, hardware, and conductors delivered from outside the region. Arrangements may be made with landowners to use locally available and developed commercial properties thereby minimizing the amount of site preparation and improvement work that would be needed. If such properties or sites are not available, the establishment of marshalling yards or staging areas could require vegetation clearing, removal and stockpiling of topsoil, site grading, spreading of gravel cover, fencing, and installation of temporary utilities. Additional vegetation clearing and grading for site access may also be required. After completion of construction, the marshalling yards and staging areas will be restored to conditions comparable to those that existed before construction, unless National Grid agrees to an affected landowner request otherwise.

4.3 LAND USE

In accordance with New York State Public Service Law ("PSL") §122(1)(c) and 16 New York Codes, Rules and Regulations ("NYCRR") §86.5(b)(2)(iv), this section evaluates existing land uses in the Project ROW, and whether the Project preserves the natural landscape and minimizes changes or excessive conflict with any present or known future planned uses.

4.3.1 Existing Land Use

Land uses within one mile of the Project ROW were identified from Geographic Information System ("GIS") data obtained from Niagara and Genesee counties. This parcel-based file identifies land uses by individual tax parcels. Each parcel is designated a property type classification code as defined by the New York State Office of Real Property Services ("NYSORPS"). This classification structure consists of numeric codes in nine main series (100-900) which define the land use applicable to each parcel, unless the parcel use is undesignated or open water. An initial broad designation of the target parcel's land use is indicated by the first digit in the coding system (1-9). These initial descriptive categories are:

- Agricultural (100) - Property used for the production of crops or livestock.
- Residential (200) - Property used for human habitation. Living accommodations such as hotels, motels, and apartments are in the Commercial category - 400.
- Vacant Land (300) - Property that is not in use, is in temporary use, or lacks permanent improvement.
- Commercial (400) - Property used for the sale of goods and/or services.
- Recreation & Entertainment (500) - Property used by groups for recreation, amusement, or entertainment.
- Community Services (600) - Property used for the wellbeing of the community.
- Industrial (700) - Property used for the production and fabrication of durable and nondurable man-made goods.
- Public Services (800) - Property used to provide services to the general public.
- Wild, Forested, Conservation Lands & Public Parks (900) - Reforested lands, preserves, and private hunting and fishing clubs.

Following each of the nine land use categories are more specific descriptions of divisions, indicated by the second digit marker of the coding system. Furthermore, where applicable, a tertiary level of classification can be applicable in the form of subdivisions, indicated by a third digit of the coding system. However, for the purposes of general land use discussions within this

Application, each parcel was defined by its initial general land use description as indicated by the first digit in the classification coding sequence (1-9), unless undesignated, or as water.

Table 4.3-1 and Figure 4.3-1 depict the type, acreage and percentages of existing land uses found within one mile of the Project ROW.

Table 4.3-1 Land Use within 1 Mile of the Project ROW

Land Use	Acres	Percent
Agricultural	16492.05	36.40
Residential	12513.70	27.62
Vacant Land	5911.83	13.05
Commercial	1519.92	3.35
Recreation & Entertainment	304.36	0.67
Community Services	328.92	0.73
Industrial	842.46	1.86
Public Services	1370.72	3.03
Wild, Forested, Conservation Lands & Public Parks	2020.63	4.46
Undesignated	2704.47	5.97
Water	1295.95	2.86
TOTAL	**45305.00**	**100**

Within one mile of the Project, agricultural land is the most prevalent adjacent land use at over one third of the total one-mile study area. Agricultural properties are directly adjacent to the line for a majority of the Project ROW in Segments 2, 3, 4 Existing, 4 Relocated, 5, and 7. Residential land use is the second most common land use at approximately one quarter of the total one-mile study area. Vacant land makes up 13.05 percent of the total land uses within the one-mile study area. These lands are currently not in use by the landowner, in temporary use, or lack permanent improvement. Some environmental constraints, including the presence of wetlands on properties, can hinder future improvement to specific parcels and so undevelopable lands could fall under this general land use description as well. Wild, Forested, Conservation Lands & Public Parks land uses make up approximately 4.5 percent of the total land uses within the one mile study area. These areas are mostly associated with the WMA's near Segments 3 and 4 Relocated. However, not all of the WMA's located within the Project were classified correctly by Niagara

and Genesee County GIS data as Wild, Forested, Conservation Lands & Public Parks. Instead, some of these lands located in Segments 3, 4 Existing, 5, and 7 have been classified as agriculture by the counties. Public services land use accounts for approximately 3.0 percent of the total land uses within the one mile study area. These areas are largely attributed to the various electric transmission corridors near the Project ROW. Approximately 6 percent of parcels within the dataset, and included in the one mile study area, were not assigned a classification code and were labeled for purposes of the Application as undesignated. Commercial land uses (3.35 percent of the land uses within the one-mile study area) are concentrated more heavily along the western part of Segment 2 as the Project passes through more of an urbanized setting within the Town of Lockport. Recreation and entertainment, industrial, and community service land uses are located mainly in Segment 1 and the western part or Segment 2 within the one-mile area and combined make up slightly more than 2 percent in the total study area.

Table 4.3-2 shows the percentages of individual land use cover types immediately adjacent (within 100 feet of the edge of the Project ROW) in each Segment:

Table 4.3-2 Adjacent Land Use to the Project (within 100 feet of the ROW)

Land Use	Segment						
	1	2	3	4 Existing	4 Relocated	5	7
Agriculture	-	13.15	53.07	81.82	87.07	75.15	49.77
Residential	-	15.82	9.83	-	0.52	24.85	45.04
Vacant Land	23.35	9.30	5.92	-	-	-	0.11
Commercial	4.71	1.34	-	-	-	-	-
Recreation & Entertainment	-	0.60	-	-	-	-	-
Community Services	-	-	-	-	-	-	-
Industrial	-	-	-	-	-	-	-
Public Services	58.09	57.50	4.98	-	-	-	-
Wild, Forested, Conservation Lands & Public Parks	-	-	24.58	-	1.83	-	-
Water	3.60	0.03	-	17.33	3.42	-	2.54
Undesignated	10.25	2.26	1.60	0.86	7.16	0.01	2.53

Notes:
1. Some properties throughout Niagara and Genesee County were assigned the overall classification of Agriculture; however, some have additional sub-classification codes such as “fish, game and wildlife preserves.” Thus, some of the land associated with the WMA’s for Segments 3, 4 Existing, 4 Relocated, 5 and 7 are under the general classification of Agriculture rather than Wild, Forested, Conservation Lands and Public Parks.

4.3.1.1 Existing Land Use Segment by Segment

Segment 1

Segment 1 (See Figure 2-5, Sheets 1-3) is an existing ROW beginning at Structure 1-2 in the City of Lockport and continues east to Structure 6 in the Town of Lockport (approximately 0.43 miles). The Project crosses the Erie Canal, the Erie Canalway Trail, NY State Route 93, as well as several New York State Electric and Gas 115kV transmission lines in this segment. The Existing ROW is a multi-line transmission corridor. Structures 3 and 4 are square based lattice towers supporting both Existing Line 112 and Existing Line 111. The square based lattice towers will be replaced as part of this Project. Land uses within 100 feet of the Project ROW are predominately Public Service or Vacant.

Segment 2

Segment 2 (See Figure 2-5, Sheets 3-49) is an existing ROW beginning at Structure 6 in the Town of Lockport that runs east to Structure 119 in the Town of Royalton (approximately 10.85 miles). The Project crosses NY State Routes 77 and 78, as well as several other county and town roads in this Segment. The Existing ROW is a multi-line transmission corridor for the majority of the Segment, but Existing Line 112 breaks away to the southeast near Johnson Rd. Land uses within 100 feet of the Project ROW are predominately Public Service.

Segment 3

Segment 3 (See Figure 2-5, Sheets 49-58) is an existing ROW beginning at Structure 119 in the Town of Royalton that runs southeast to Structure 141 in the Town of Alabama (approximately 2.19 miles). The Project crosses State Route 77 and a county road in this Segment as well as the county line between Niagara and Genesee counties. Land uses within 100 feet of the Project ROW are predominately Agriculture and Wild, Forested, Conservation Lands & Public Parks.

Segment 4 Existing

Segment 4 Existing (See Figure 2-5, Sheets 58-66) is the existing ROW beginning at Structure 141 that runs southeast to Structure 159-1 (approximately 2.20 miles). This Segment is entirely located in the Town of Alabama. Land uses within 100 feet of the Project ROW are almost

entirely Agriculture. The structures in this Segment are intended to be removed as maintenance access is limited by large wetlands associated with the TWMA.

Segment 4 Relocated

Segment 4 Relocated (See Figure 2-5, Sheets 58, 59, 66-76) is the proposed new ROW beginning at Structure 141 that runs generally southeast to Structure 159-1 (approximately 2.20 miles). This Segment is entirely located in the Town of Alabama and more closely follows State Route 77 which will provide for improved maintenance access and remove Existing Line 112 from a more sensitive area in the TWMA. Additional ROW will need to be acquired to install and maintain structures relocated from Segment 4 Existing. Land uses within 100 feet of the Project ROW are almost entirely Agriculture.

Segment 5

Segment 5 (See Figure 2-5, Sheets 66, 81) is an existing ROW beginning at Structure 159-1 that runs southeast to proposed Structure 173 ½ (approximately 1.45 miles). This Segment is entirely located in the Town of Alabama. The Segment does not cross any roads but does cross under two New York Power Authority 345kV transmission lines north of Structure 172. Land uses within 100 feet of the Project ROW are predominately Agriculture.

Segment 7

Segment 7 (See Figure 2-5, Sheets 83-94) is an existing ROW beginning at Structure 184 ½ that runs southeast to Structure 200 before turning to the east to Structure 211 (approximately 2.58 miles). This Segment is entirely located in the Town of Alabama. The Project crosses NY State Routes 63 and 77, as well as several other county and town roads in this Segment. Land uses within 100 feet of the Project ROW are almost evenly split between Agriculture and Residential. Structures 190 to Structure 197 are located within the JWWMA.

4.3.2 State and County Land Use Planning and Policies

The Project ROW traverses the City of Lockport, Town of Lockport, and the Town of Royalton, Niagara County, NY and the Town of Alabama, Genesee County, NY. Local land use plans and polices were reviewed for Niagara and Genesee Counties and for the city and towns crossed by the Project ROW. The Niagara Communities Comprehensive Plan and the Genesee

County Comprehensive Plan are the county planning documents referenced to complete this section.

The rebuild of the Existing Line 112 will not adversely change any local or regional land use patterns or land use planning as it will be located within Existing ROW for the majority of its length. The Project will provide additional and reliable transmission of electricity within an existing electric transmission infrastructure corridor while minimizing or avoiding conflicts with surrounding land uses. The Project can be viewed as supporting the long-term economic health and growth of the western New York area and ongoing commercial and industrial enterprises throughout the region and beyond (see Exhibit 6 – Economic Effects of Proposed Facility). A summary of present and known future land use plans in the Project area follows.

4.3.2.1 2016 New York State Open Space Conservation Plan

The 2016 New York State Open Space Conservation Plan is a comprehensive statewide plan that describes current open space conservation goals, actions, tools, resources and programs administered by state and federal agencies and conservation nonprofits. The state conservation goals include measures to protect water quality; provide accessible, quality, outdoor recreation; protect wildlife habitats for diversity; improve the quality of life and the health of our communities; maintain critical natural resource-based industries; address climate change through forest, wetland, and riparian area stewardship, ecosystem protection, urban and community forestry, and community planning; provide places for education and research; and protect and enhance scenic, historic, and cultural resources (NYSDEC, 2016a). The conservation plan includes a list of 140 regional priority conservation projects or programs across the State, only six of which are in the vicinity of the Project:

1. Tonawanda Creek Watershed (Project 113): Portions of the Project are located within the Tonawanda Creek Watershed. Project 113 would serve to protect Tonawanda Creek, which is one of the major tributaries of the Niagara River in Genesee, Erie and Niagara Counties. The Tonawanda Creek and tributaries provide an impressive variety of aquatic life as well as an example of aquatic biodiversity. Associated wetlands and open field habitat are common in the basin. The Tonawanda Creek system faces threats from new development, bank erosion, pollution problems and stormwater runoff.

2. Grassland Preservation & Restoration (Project 120): This project will serve to protect existing grassland habitat and also provide for restoration of native grassland species. Emphasis would be placed on sites where protection of endangered or threatened grassland birds is necessary and where additional nesting habitat could be provided for

upland game birds and waterfowl. Sites with sufficient acreage to be effectively managed and sites that are a component of broader management goals would receive primary consideration. This project includes a variety of different sites in Niagara, Wyoming and Erie Counties.

3. Trails & Trailways (Project 125): This project protects existing lineal corridors and provides for acquisition or easement of existing trails and trailways for additional undeveloped linkage to connect existing trails. Examples would be unused or abandoned railroad corridors and existing trails that do not meet the criteria of long-distance corridors. The Project does cross the Erie Canalway Trail at the Existing Line 112 location in Segment 1, but protections will be put in place to minimize any temporary disturbances and protect the safety of users of the trail and protect or repair the integrity of the trail itself.

4. State Forests, Unique Areas, & Wildlife Management Areas Protection (Project 133): State Forests, Unique Areas, and Wildlife Management Areas provide valuable natural, cultural and recreation resources enjoyed by millions of visitors each year. Protection and enhancement of these resources is critical to their long-term stewardship. Portions of the Project ROW are located within the TWMA and JWWMA which provide wildlife habitat and wildlife-dependent recreation. Structures 141 to 169 are located in the TWMA, but the line will be relocated in this area to reduce impacts and provide better long-term access by acquiring new ROW in Segment 4 Relocated. New structures in the JWWMA will be replaced in the vicinity and along the same alignment as the existing structures.

5. New York State Canal System (Project 135): An important recreation corridor and primary trail system that provides hiking, bicycling, water access and other recreational opportunities. This canal links the major upstate cities of Albany, Schenectady, Utica, Rome, Syracuse, Rochester and Buffalo. Extensive funding has been committed in the last few years to completion of the Canal Trail within the Canal Recreation way. The Erie Canal Greenway is one part of a long-term effort to create an interconnecting greenway system across New York State. Establishment of the Erie Canal Greenway will strengthen local ties across the Canal Corridor and protect and enhance its natural and cultural resources for future generations. The Project crosses the Erie Canal between Structures 2 and 3 in Segment 1 but will not have a permanent impact on the Canal or Canal Trail. Temporary protections will be put in place during construction to notify and protect trail users. Conductor clearance heights will not impede canal use.

6. Statewide Farmland Protection (Project 138): Farmland protection is a critical component of the State's overall efforts to conserve open space. This land provides fresh produce, scenic open space, vital wildlife habitat, and the economic backbone to many communities.

The Project, as presented in this Application and to be further detailed in the EM&CP, will not adversely affect the goals of the 2016 New York State Open Space Conservation Plan. The Project will be compatible with the Plan.

4.3.2.2 County Land Use Planning and Policies

Niagara County

The Niagara Communities Comprehensive Plan 2030 is countywide in perspective and emphasizes a multi-municipal approach to planning and informed decision-making. It provides a framework for achieving five high priority goals: Encouraging desirable and appropriate growth and development; Strengthening the local economy; Improving the delivery of services; Prioritizing and coordinating capital improvements; and Improving the quality of life for County residents. Management of water resources, air quality, wildlife habitats, unique natural features such as the Niagara Escarpment, and important scenic resources is also on the list of priority issues for Niagara County. There is widespread recognition that future economic development opportunities are afforded through protection of the County's rich natural resources, waterfronts, parklands and cultural resources including the Erie Canal corridor. The plan includes an analysis of areas most or least suited to future development based on land use regulations or conservation of important natural resources. The benefits of maintaining and enhancing green infrastructure over gray infrastructure is discussed. Preservation of farmland was a consistent concern of stakeholders in the preparation of the plan (CHA Consulting, 2009).

Genesee County

The Genesee County Comprehensive Plan was developed as a way to articulate a common direction and vision for Genesee County and to improve coordination among the County and its local governments. The Plan is updated on a yearly basis through monitoring report updates. The Land Use Vision Statement states that "Land Use in Genesee County should consist of a balance of agricultural, residential, commercial, industrial, institutional, recreation, conservation and infrastructure uses." On-going actions in the plan include "encourage the use of local planning techniques, development regulations, private preservation techniques, the State Environmental Quality Review regulations, and provisions of the Agricultural District program to support agriculture, to retain high quality farmland, and to maximize the County's agribusiness potentials." The plan also states, "The County has a significant responsibility in maintaining a desirable

regional balance of land uses, including residential, commercial and industrial development; agricultural land retention; and protection of sensitive natural resources" (Genesee County Legislature, 1997).

The most recently available Genesee County Agriculture and Food Production Focus Group Monitoring Report (dated April 5, 2019) identifies several concerns on the infrastructure side of agricultural lands that could be relevant in assessing Project impacts. Specifically, the report acknowledges agricultural landowner concerns regarding structure heights and distances, and unremoved contractor stake/flags that mark where utility lines are buried.

The most recently available Genesee County Land Use, Environment, & Place Making Monitoring Report (dated March 1, 2019), identifies several issues that could be relevant in assessing Project impacts, including encroachment of development on natural resources (including from solar and windfarm development), water quality issues, and invasive species.

The most recently available Genesee County Technology & Utilities Focus Group Monitoring Report (dated June 2019) identifies several issues that could be relevant in assessing Project impacts, including coordinated planning between communities to address stormwater issues and zoning updates for solar farm development. Priorities include obtaining funding to extend utilities to areas appropriate for intensive commercial and industrial development and utilities such as National Grid implementing various system upgrades across the region to enhance reliability and safety.

4.3.3 Local Land Use Planning and Policies

The Project is not anticipated to have an impact on any of the local land use planning or policies of Niagara or Genesee counties or the City of Lockport, Town of Lockport, Town of Royalton, and the Town of Alabama. Available comprehensive plans and relevant agriculture and farmland protection plans are summarized below.

4.3.3.1 City of Lockport Comprehensive Plan Update – 1998

The City of Lockport Comprehensive Plan seeks to build on the City's assets while proposing a series of polices for future development, including land use, the environment, transportation, infrastructure, and economic development. The Project does not conflict with the goals established in this comprehensive plan.

4.3.3.2 Town of Lockport Comprehensive Plan - 2014

The Town of Lockport Comprehensive Plan reflects the Town's vision by focusing on maintaining a quality of life through economic prosperity, providing effective government services, and providing for a balanced community by encouraging a range of different types of development; protecting rural/ agrarian resources; and promoting high quality development. The Plan makes a recommendation to "Obtain a new road connection to the SW Lockport Bypass" which would potentially be located within or adjacent to the Project ROW between the Lockport Bypass and Transit Road, in order to alleviate traffic congestion and open up more land for development. The Project does not conflict with the goals established in this comprehensive plan.

4.3.3.3 Town of Royalton Comprehensive Plan Update – 2009

The Town of Royalton Comprehensive Plan references many goals including maintaining and enhancing the rural character and the agricultural economy and protecting the environmental resources of the Town of Royalton. The Project does not conflict with the goals established in this comprehensive plan.

4.3.3.4 Town of Alabama Comprehensive Plan Update - 2017

The Town of Alabama Comprehensive Plan Update – 2017 provides an update of a 2005 Joint Comprehensive Plan developed with the neighboring Town of Oakfield, largely in response to the Genesee County Economic Development Center's ("GCEDC") Western New York Science and Technology Advanced Manufacturing Park ("STAMP") Project which was identified as potentially having an impact on the towns. Some of the plan's goals are to protect, promote and preserve agriculture; maintain and enhance community character; and protect environmental features and resources. The Project does not conflict with the goals established in this comprehensive plan.

4.3.3.5 Town of Alabama Agriculture and Farmland Protection Plan – 2018

The Town of Alabama Agriculture and Farmland Protection Plan was developed to recognize, better understand, and establish a strategy for protecting the agricultural and rural character of the Alabama community. The Project does not conflict with the goals established in this agriculture and farmland protection plan.

4.3.4 Floodplains

Figure 4.3-2 contains Federal Emergency Management Agency ("FEMA") Flood Hazard Area Maps that illustrate the 100 year floodplains relative to the Project ROW. For Niagara and Genesee counties, 100 year flood data from the National Flood Hazard Layer ("NFHL") based on the Flood Insurance Rate Maps ("FIRMs") FEMA, were obtained through the FEMA website.

Flood hazard areas are determined using statistical analysis of records of river flow, storm tides, rainfall, information obtained through consultation with the communities, floodplain topographic surveys, and hydrological and hydraulic analysis. Typically, only drainage areas that are greater than one (1) square mile are studied.

The Project ROW crosses "A" flood zones associated with the Erie Canal (Segment 1) and Mud Creek (Segment 3) and "AE" flood zones associated with Donner Brook (Segment 2). "A" flood zones are 100 year flood inundation areas for which Base Flood Elevations have not been determined. "AE" flood zones are 100 year flood inundation areas for which Base Flood Elevations have been determined. The remainder of the Project ROW is within Zone X, or minimal risk zone.

The new structures proposed for the Project will not have an impact on floodplains as they will not appreciably change elevation or significantly impact existing contours. Environmental protection measures such as the use of temporary mats will be used as necessary during construction to protect wetland and associated floodplain areas. Protection measures will be prescribed on a site-by-site basis in the EM&CP.

4.3.5 Agricultural Districts

In New York State, Article 25-AA: Agricultural Districts Law of New York State Agriculture and Markets Law authorizes the creation of local agricultural districts pursuant to landowner initiative, preliminary county review, state certification, and county adoption (New York State Department of Agriculture and Markets ("NYSDAM"), 2016). These districts encourage improvement and continued use of agricultural land for the production of food and other agricultural products. An important benefit of the Agricultural Districts Program is the opportunity provided to farmland owners to receive real property assessments based on the value of their land for agricultural production rather than on its development value. The Agricultural Districts Program and the Agricultural and Farmland Protection Program (Article 25-AAA of NYS Agriculture and Markets Law) have influenced municipal comprehensive plans and zoning

regulations. County agricultural and farmland protection boards may develop protective plans in collaboration with county soil and water conservation districts. The Agricultural Districts Program protects farmers against local laws that may unreasonably restrict farm operations located within an agricultural district. Based on mapping obtained from agricultural districts boundary data for Niagara and Genesee counties available at Cornell University Geospatial Information Repository ("CUGIR") (CUGIR, 2017/2018/2019), portions of the Project ROW cross the following Agricultural Districts: NIAGc07 in Segments 2 and 3, and GENE002 in Segments 5 and 7. The district boundaries are shown on Figure 4.3-3. As such, the Project ROW will cross lands protected by Article 25-AA of the Agriculture and Markets Law. Section 4.3.6.2 – Effects on Agricultural Lands details how the Applicant is allowed to operate within agricultural lands.

4.3.6 Project Effects on Land Use and Mitigation

4.3.6.1 ROW Construction Effects

A majority of the Project will be constructed on Existing ROW, while some new property rights will be required to conform to TROWMP standards and to effectuate the proposed removal and relocation of Existing Line 112 from Segment 4 Existing to Segment 4 Relocated.

Due to such relocation, which will remove most of the structures from the TWMA and place structures on a new ROW within the TWMA, there will be some limited permanent changes to existing land use associated with the construction of the Project. The overall land use impacts along Segment 4 Relocated will be minimal, however, and primarily associated with the installation of the structures. Since the Segment 4 Relocated ROW will be sited on agricultural land (but is not in state Agricultural district) that will remain available for agricultural land use after construction, the overall land use is expected to remain the same within Segment 4 Relocated, with the exception of a few select areas where tree clearing may be necessary. As such, no significant impacts to current land use are anticipated to occur as a result of the relocation.

4.3.6.2 Effects on Agricultural Lands

The Project traverses' active agricultural lands and designated New York Agricultural Districts. Standard Article VII Certificate Ordering Clauses, the EM&CP, and existing agreements between local farm operators and the Applicant allow for the co-existence of active farmland and transmission lines. During construction, agricultural operations may be disrupted within the ROW for a single growing season, depending upon the timing of construction. For example, in previous

similar projects, NYSDAM has specified that any pole structures and guy anchors removed from crop fields be removed to a depth of four feet below the surface, and all forms of debris must be removed from the fields. NYSDAM also provides agricultural mitigation guidelines throughout various stages of projects (NYSDAM, 2011). If possible, structure removal and replacement will be scheduled for drier or frozen periods of the year, to prevent rutting of the soil surface. If temporary construction mat access is not practical or desirable, topsoil may be temporarily stripped and stockpiled from crop field-related work sites and access routes, then replaced following completion of work. Should some soil rutting occur, such areas will be graded and restored to the farm operator's satisfaction. The EM&CP will present mitigation measures such as these to be implemented during construction to minimize impacts to agricultural operations. Restoration measures such as rehabilitation of drainage tile fields, deep tilling of compacted areas, and thorough removal of all construction debris will also be implemented in active agricultural areas.

4.3.6.3 Effects on State and Local Parks/Public Lands

While the Project ROW does not cross any State parks, it does intersect the Erie Canal biking and walking path in the Town of Lockport (Segment 1, between Structures 3 – 4). The Canal path runs perpendicular to the Project ROW. The Applicant will implement appropriate construction safety practices, such as temporary barricades and fencing, to prevent pedestrians from entering construction work zones and avoid potential conflicts with pedestrian traffic during construction along the bike paths (and any other paths or multi-purpose trails that are identified during the development of the EM&CP) that could be impacted by Project construction (see Exhibit E-6 – Effects on Transportation for more information).

A portion of Segment 3 (including Structures 134-138, 140, and 141) is within the TWMA. In addition, Segment 4 Existing, which is approximately 1.75-miles in length (from Structure 142 to Structure 159) extends through the TWMA. Segment 4 Existing, Structures 141-159, are proposed for removal and replacement per the Segment 4 Relocated, which is along the southside of Lewiston Road (Route 77). The Segment 4 Relocated extends approximately 2.20-miles from Structure 141 to Structure 159-1 and will also be within the TWMA. This re-route area will reduce impacts to large wetland areas containing sensitive plant and wildlife species and will provide better access for future utility line maintenance and restoration activities. A portion of Segment 5, from Structure 160 to 169 is also within the TWMA.

A portion of Segment 7, Structures 190 – 197, crosses the JWWMA. This is an existing section of the line within the Existing ROW.

There will be only minor changes in the structure types and visual impacts as a result of this Project. These changes will not adversely affect land uses or visual aesthetics along or adjacent to the ROW. Further analysis of visual aesthetics on state and local parks or public lands along the Project ROW is provided in Section 4.4.

4.4 VISUAL RESOURCES

This section addresses the visual and aesthetic impacts that may result from the Project, in accordance with PSL §122(1)(c) and 16 NYCRR §§86.5(b)(2)(i), (b)(2)(ii). It examines the aesthetic, scenic, historic, recreational and public view resources within a visual study area extending one-miles from the Project ROW, and the potential impact on these resources, so as to determine whether the proposed Project "avoids scenic, recreational, and historic areas," and whether the Project has been sited "to minimize its visibility from areas of public view."

This section includes a resource inventory and evaluation, and mitigation recommendations in accordance with the NYSDEC Program Policy DEP-00-2 entitled "Assessing and Mitigating Visual and Aesthetic Impacts" (NYSDEC Policy, 2019). The guidelines provided in the NYSDEC Policy are often utilized in Article VII proceedings since they include both quantitative (how much is seen) and qualitative (what it will look like) aspects of potential visual impact.

This section focuses specifically on existing visual resource conditions and the impacts and changes associated with the Project.

4.4.1 Existing Landscape Description

4.4.1.1 Landscape Similarity Zones

Landscape Similarity Zones ("LSZ") are areas of similar landscape and aesthetic character based on patterns of landform, vegetation, water resources, land use, and user activity. These zones provide additional context for evaluating viewer circumstances and visual experiences. Land cover classification datasets from the 2011 U.S. Geological Survey ("USGS") National Land Cover Dataset ("NLCD") are available for GIS analysis and were used for an initial establishment of LSZs as they provide distinct and usable landscape categories. These NLCD land cover groupings were then refined based on aerial photo and topographic interpretation. This effort resulted in the definition of five final LSZs within the visual one-mile study area shown in Figure 4.4-1 and Table 4.4-1, and as detailed below.

Zone 1 - Forested

Views from inside the Forest Zone are highly limited since it is assumed that tree canopy precludes outward views unless there are intermittent gaps in trees. Forested areas may include roadway segments where there are permanent residents.

Zone 2 - Developed

This zone includes low to medium-density residential with inclusions of commercial and industrial development.

Zone 3 - Open Space, Low Vegetation

This zone includes non-agricultural open space consisting of lawn grasses, parks, golf courses, and low-profile vegetation planted in developed settings as well as areas dominated by shrubs.

Zone 4 - Agricultural/Open Field

This zone includes agricultural cropland and open fields consisting of hay, pasture, or fallow land. There may be hedgerows or small tree groups that provide intermittent screening.

Zone 5 - Open Water

Open Water in the study area includes the Erie Canal, streams, ponds, lakes, and quarries.

As noted in Table 4.4-1, Zone 4, Agricultural/Open Field comprises the highest LSZ totaling 55 percent of the study area and is most prevalent in the Town of Royalton. Zone 1 Forested comprises 29 percent of the study area while Zone 2 Developed comprises 11 percent. Zone 3 Open Space, Low Vegetation and Zone 5 Open Water each comprise about 2 percent of the study area.

Table 4.4-1 Percentage of Landscape Similarity Zones within One Mile Study Area				
LSZ	**Municipality**	**Acres**	**Percent Acreage Within LSZ**	**Percent Acreage in Entire One Mile Study Area**
Zone 1 Forested	Lockport, City	133.49	1.60	0.47
	Alabama, Town	3317.00	39.83	11.70
	Lockport, Town	1515.29	18.20	5.35
	Pendleton, Town	18.23	0.22	0.06
	Royalton, Town	3042.29	36.53	10.73
	Shelby, Town	301.50	3.62	1.06
	Total Forested	**8327.80**	**100.00**	**29.37**
Zone 2 Developed	Lockport, City	566.97	17.95	2.00
	Alabama, Town	386.38	12.23	1.36
	Lockport, Town	1678.02	53.11	5.92
	Pendleton, Town	41.61	1.32	0.15
	Royalton, Town	472.26	14.95	1.67
	Shelby, Town	13.95	0.44	0.05
	Total Developed	**3159.19**	**100.00**	**11.15**
Zone 3 Open/Low Vegetation	Lockport, City	147.61	25.17	0.52
	Alabama, Town	30.91	5.27	0.11
	Lockport, Town	403.42	68.80	1.42
	Pendleton, Town	0.00	0.00	0.00
	Royalton, Town	4.22	0.72	0.01
	Shelby, Town	0.22	0.04	0.00
	Total Open/Low Vegetation	**586.38**	**100.00**	**2.06**
Zone 4 Agricultural/Open Field	Lockport, City	165.18	1.06	0.58
	Alabama, Town	5364.05	34.39	18.92
	Lockport, Town	2879.26	18.46	10.16
	Pendleton, Town	44.47	0.28	0.16
	Royalton, Town	6909.15	44.29	24.37
	Shelby, Town	236.89	1.52	0.84
	Total Agricultural	**15599.00**	**100.00**	**55.03**

Table 4.4-1 Percentage of Landscape Similarity Zones within One Mile Study Area				
LSZ	**Municipality**	**Acres**	**Percent Acreage Within LSZ**	**Percent Acreage in Entire One Mile Study Area**
Zone 5 Open Water	Lockport, City	7.21	1.07	0.03
	Alabama, Town	424.85	62.88	1.50
	Lockport, Town	39.27	5.81	0.14
	Pendleton, Town	0.00	0.00	0.00
	Royalton, Town	155.21	22.97	0.55
	Shelby, Town	49.14	7.27	0.17
	Total Open Water	**675.68**	**100.00**	**2.38**
	Total All	**28348.05**	**N/A**	**100**

4.4.1.2 Travel Corridors

Transportation corridors are prevalent within the one mile study area and include the New York State Routes 31, 78, 93, 77, and 63 along with multiple collector and feeder roads. Residential roads also service existing residential subdivisions in the study area. The Project ROW crosses several State highways but is not in close proximity to any major interstate transportation facilities. See Exhibit E-6 for more discussion of travel corridors.

4.4.1.3 Landform and Elevation

Topography in the study area is fairly level with elevations ranging from approximately 590 feet above mean sea level ("AMSL") up to approximately 770 feet. Lowest elevations in the study area are located along the Erie Canal. Elevations trend from lower ground in Segments 1 through 4, to higher areas in Segments 5 and 7. There are no high point, ridge lines or steep slope areas or summits in the study area that could afford longer distant views.

4.4.1.4 Water Resources

The major waterbody that falls within the study area is the Erie Canal. The Project ROW crosses the canal between Structures 2 and 3. Other streams cross through the study area and generally drain south to westerly towards Tonawanda Creek. These are the NYS Barge Canal, an Unnamed Tributary to Tonawanda Creek, Mud Creek and Unnamed Tributaries to Mud Creek.

4.4.2 Inventory of Aesthetic Resources

In order to conduct a visual assessment of the Project, an inventory of significant scenic and aesthetic resources was conducted as outlined in the NYSDEC Policy. The policy states that the State's interest with respect to aesthetic resources is to protect those resources whose scenic character has been recognized through national or state designations.

As defined by the NYSDEC Policy, the presence of the following resources within the study area were investigated:

1. A historic resource listed or eligible for inclusion in the National or State registers of historic places [16 U.S.C.§ 470a et seq., Parks, Recreation and Historic Preservation Law Section 14.07];

There are five listed National Register of Historic Places sites in the Town of Lockport and the Town of Royalton. There are six National Register-eligible sites located in the Town of Lockport and Town of Royalton. Refer to Table 4.4-2 for the entire visual resource inventory within one mile of the Project.

2. State Parks [Parks, Recreation and Historic Preservation Law Section 3.09];

There are no state parks, within the Project study area.

3. New York State Heritage Areas [Parks, Recreation and Historic Preservation Law Section 35.15];

The New York State Barge Canal Historic District follows the Erie Canal from the Town of Waterford, Albany County to the Town of Tonawanda, Erie County. The Erie Canal passes through the Town of Lockport within the Project ROW.

4. The State Forest Preserve [NYS Constitution Article XIV];

The Project study area does not fall within a State Forest Preserve.

5. National Wildlife Refuges [16 U.S.C. 668dd], and State Game Refuges [ECL 11-2105];

The Iroquois National Wildlife Refuge is located approximately 0.5 miles from the Project study area in the Town of Alabama, Genesee County.

6. National Natural Landmarks [36 CFR Part 62];

There are no National Natural Landmarks within the Project study area.

7. The National Park System, Recreation Areas, Seashores, Forests [16 U.S.C. 1c];

There are no National Park System resources within the Project study area.

8. Rivers designated as National or State Wild, Scenic or Recreational [16 U.S.C. Chapter 28, ECL 15-2701 et seq.];

There are no designated national or state Wild, Scenic, or Recreational Rivers within the Project study area.

9. A site, area, lake, reservoir or highway designated or eligible for designation as scenic, including NYS Scenic Byways [ECL Article 49 Title I or DOT equivalent;

There are no Scenic Byways within the Project study area.

10. Scenic Areas of Statewide Significance [of Article 42 of Executive Law];

There are no Scenic Areas of Statewide Significance within the Project study area.

11. A state or federally designated trail, or one proposed for designation [16 U.S.C. Chapter 27 or equivalent;

There are no State or federally designated or proposed trails within the Project study area.

12. Adirondack Park Scenic Vistas [Adirondack Park Land Use and Development Map];

The Project does not fall within the Adirondack Park.

13. State Nature and Historic Preserve Areas; [Section 4 of Article XIV of the State Constitution];

There are no State Nature and Historic Preserve Areas within the Project study area.

14. Palisades Park; [Palisades Interstate Park Commission];

The Project does not fall within the Palisades Park.

15. Bond Act Properties purchased under Exceptional Scenic Beauty category;

There are no Bond Act Properties within the Project study area.

16. National Heritage Areas;

There are no National Heritage Areas.

GIS databases, federal and state agency information, and master plans were consulted to obtain information on existing visual resources within a one-mile radius of the Project ROW. Master plans and other town documents or online websites for the City of Lockport, Town of Lockport, Town of Royalton, and Town of Alabama were used to evaluate community resources within the one-mile radius study area. This inventory also investigated the presence of local resources important to the community and includes local points of interest or county/town recreational areas and open space outlined in Table 4.4-2.

Table 4.4-2 Visual Resource Inventory within Study Area

Resource	Visibility Existing	Visibility Project	Town
Federal-State-Recreation Lands			
Iroquois National Wildlife Refuge*	Yes	Yes	Alabama
John White Wildlife Management Area*	Yes	Yes	Alabama
Tonawanda Wildlife Management Area*	Yes	Yes	Royalton
DEC Lands			
John White Wildlife Management Area*	Yes	Yes	Alabama
Tonawanda Wildlife Management Area*	Yes	Yes	Royalton
Scenic Byway - National/State			
-	-	-	-
Fishing Easements (FE)			
-	-	-	-
Local Parks or Town Open Space			
-	-	-	-
Snowmobile Trails			
Genesee Sno Packers – C4D	Yes	Yes	Alabama
Genesee Sno Packers – S49A	Yes	Yes	Alabama
Heritage Area System			
New York State Barge Canal Historic District – USN 00104.000641	Yes	Yes	Lockport

Table 4.4-2 Visual Resource Inventory within Study Area			
Resource	**Visibility Existing**	**Visibility Project**	**Town**
Historic, NRHP Listed **			
Leroque Residence - 9779 Lewiston Rd – USN 6309.000048*	No	No	Royalton
Private Residence 1957-House at 8 Berkely Drive – USN 6342.000445	No	No	Lockport
Bridge E-235A, BIN-4454280 - Water pipeline – USN 6342.000688	Yes	Yes	Lockport
Pound-Hitchins House - 325 Summit St – USN 6342.000032	No	No	Lockport
Bridge E-236A, BIN-4454190 - SW Bypass – USN 6342.000689	Yes	Yes	Lockport
Historic, Eligible **			
Hanssen Residence - 9065 Chestnut Ridge Rd – USN 6309.000058	No	No	Royalton
Claude Residence - 7800 Akron Road – USN 6309.000032	No	No	Royalton
Dysinger Tavern - 8239 Bunker Hill Rd – USN 6309.000013	No	No	Royalton
Rupp Residence - 5936 Robinson Rd – USN 6307.000015	No	No	Lockport
Behe Residence - 8722 Bunker Hill Rd – USN 6309.000014	No	No	Royalton
Summit St Bridge - Summit St – USN 6342.000086	No	No	Lockport

Notes:
* Represents visibility based on review of existing viewshed maps and aerial imagery.
** Historic properties in this table include listed National Register of Historic Places (NRHP) and previously surveyed eligible historic properties obtained from the New York State Cultural Resource Information System (CRIS).

4.4.3 Visual Analyses

A viewshed analysis is a computerized GIS analytical technique that illustrates the predicted visibility that may potentially be expected for a project. It allows one to determine if and where an object, such as a transmission structure, can geographically be seen within a larger regional area and results can be quantified. The viewshed model accounts for topography, vegetation, buildings, and the height of the structures. The results of the viewshed analysis, typically displayed over a USGS topographic map or aerial photo, are combined with other sensitive location information such as historic places, national forests, or state parks, etc. Incorporating GIS integrated data along with a viewshed analysis assists in understanding the potential for Project visibility at sensitive resource locations.

To fulfill Part B of the NYSDEC Policy to determine if the Project may have potential visibility to a significant property listed in Table 4.4-2, two types of computerized visual analyses were performed: viewshed analysis for Segment 4 Relocated and photograph simulations. A viewshed analysis was not conducted on Segments 1, 2, 3, 4 Existing, 5, and 7 because the Project

is within a transmission corridor with several existing transmission lines (Segments 1, 2, and 3), structures are being removed only (Segment 4 Existing) or the Project is in a rural, agricultural setting (Segments 5 and 7). Photograph simulations allow for the depiction of existing versus Project conditions and provide a qualitative assessment of the Project. Photograph simulations were performed at certain representative structure locations within Segments 2, 4 Relocated and 7.

4.4.4 Viewshed Analysis – Methodology

For base elevation and ground objects (trees and buildings), this analysis used Light Detection and Ranging ("LiDAR") data obtained from 2019 NYSGPO LiDAR for Erie County, Genesee County, and Livingston County as well as 2007 Niagara County LiDAR Data. LiDAR data is the best available elevation data as it includes high resolution accurate ground elevations in addition to building heights and individual tree heights that capture physical visual impediments in the landscape. Although ground elevations are not expected to have changed from 2007, some areas with vegetation may be underrepresented due to the date of the data. This may result in an over-representation of visibility in some areas.

The coordinate and elevation of the transmission structures were incorporated into the model. These data were controlled within the model to ensure that the surface elevation and the vertical offsets of the structures were embedded properly against the LiDAR trees and buildings. The viewshed model was further developed by establishing an observer height of 5.5 feet, and the assumption that the Project would not be visible to a viewer who is standing among trees in a forested area.

The viewshed analysis for the proposed Project focuses on the proposed structures of Segment 4 Relocated. For the purposes of the Project, two viewshed analyses were performed.

1. Viewshed analysis of existing structures for Segment 4 Relocated in the Existing ROW was performed to understand where structures can be seen currently, prior to the Project.
2. In Segment 4 Relocated, proposed new structure locations and heights for the Segment 4 Relocated were used.

In this fashion, by providing comparative change detection with the viewshed results, one can determine locations where visibility of structures is the same, and where there might be new

visibility of structures or rather, areas that can see structures due to the Project where before they previously could not.

4.4.5 Photograph Simulations – Methodology

Field surveys were conducted on October 12, 2020 in order to acquire photographs for simulations. Photographs were taken throughout the Project and attempts were made to take photographs that provided the most unobstructed views possible. As a result of Project design review and potential impact to aesthetic resources, five representative photograph simulations were created.

Photographs were taken with a full frame iPhone 7 digital camera. Coordinates of camera locations intended for simulations were recorded through the use of a Global Positioning System ("GPS") unit, as well as other reference points within the view. These reference locations were later used to refine the placement of the facility within the simulation photographs, although most references included existing transmission towers.

To create visual simulations, MicroStation and Photoshop software were used to correctly dimension three dimensional models into the digital photographic image from each viewpoint location. The model of the structures was created using available National Grid engineering specifications.

The day, time and direction of the photographs were also recorded and typically exist as electronic information embedded in the respective digital photograph files. This information was used to adjust angles if needed.

4.4.6 Project Visual Impacts

4.4.6.1 Visual Concepts to Consider: Viewer Characteristics

Visual sensitivity is dependent upon user or viewer attitudes, the amount of use and the types of activities in which people are engaged when viewing an object. Overall, higher degrees of visual sensitivity are correlated with areas where people live and with people who are engaged in recreational outdoor pursuits or participate in scenic driving. Conversely, areas of industrial or commercial use are considered to have low to moderate visual sensitivity because the activities conducted are not significantly affected by the quality of the environment.

These concepts are applied when evaluating the visual landscape and assessing the importance of a viewpoint location if it falls in an area of visibility.

4.4.7 Viewer Groups

Viewer groups and associated responses to visual changes are evaluated from a variety of factors including:

- Viewer type – Types of viewers will vary by geographic region, as well as by travel route or use areas, such as a developed recreation site, urban area, or back yard. Viewer types include:
    - local constituency: People living in the local area and/or surrounding communities who interpret the significance of where they live and interact with others; these people may include local residents and members of groups to the local area.
    - individual visitor constituency: Individuals who visit the area to experience its natural appearing and/or cultural landscape qualities. Visitors may be of local, regional, or national.
    - broader constituency: People living a far distance from the region who may visit or through-traffic commuters.
- Context of viewer – The viewer type and associated viewer sensitivity and expectations is distinguished among viewers in residential, recreational/open space, tourist, commercial establishments, and workplace areas. Transmission lines are a fairly common and ubiquitous element in the landscape.
- Number of viewers – The number of viewers is established by the amount of people exposed to the view. In comparing viewing locations to each other, one can consider if the area is a high public use area or if it is a location that is less frequently visited or more inaccessible where the public is not expected to be present (such as marshes or farm fields).
- Duration of view – Duration of view is the amount of time a viewer would actually be looking at a particular site. Use areas are locations that receive concentrated public-use viewing with views of long duration such as residential back yards. Recreational long duration views include picnic areas, favorite fishing spots, campsites, or day use in smaller local parks. Comparatively, drivers, hikers, snowmobilers, or canoeists will

likely encounter a shorter, more rapid transient experience as a person transitions from one linear segment to the next but will encounter more visually varied experiences.

- Viewer activities – Activities can either encourage a viewer to observe the surrounding area more closely (hiking) or discourage close observation (commuting in heavy traffic).

4.4.8 Viewshed Analysis – Discussion of Impacts

Segment 4 Relocated is located in a mostly flat area that is sparsely populated with tree cover. This means that structures are visible from the adjacent roadway, with only three or four structures obscured by any obstructions. While Segment 4 Existing is set over 1,000 feet back from Lewiston Road and Segment 4 Relocated is positioned at times only 40 feet from the road edge, only four more structures are visible while traveling along Lewiston Road. Structures will also remain visible at three nearby residences on Lewiston Road.

4.4.9 Photograph Simulations – Discussion of Impacts

To evaluate anticipated visual changes associated with the proposed Project, the photographic simulations of the Project were compared to photos of existing conditions. Evaluation of the simulations indicate that the Project will offer varying levels of visual contrast in comparison to existing conditions. However, the Project is proposed mostly within an Existing ROW, while some vegetation will be removed within the Project ROW. Although the removal of such vegetation may cause an increase in the visibility of the corridor and Rebuilt Line 112, in most instances, vegetation will remain along the ROW edges to backdrop and partially screen the Project. Nearby areas and neighborhoods that currently have views of existing transmission structures will in most cases continue to have views, but these views will be different due to new structure types. Thus, the emphasis of visual impacts and providing simulations showing Existing Line 112 and Rebuilt Line 112 is focused on road crossings, commercial areas, wildlife management areas, Segment 4 Relocated and residents with long-term views that are proximal to the Project. Figure 4.4-4 provides the photograph simulations for the Project, the viewpoints ("VP") of which are described in further detail below.

VP1 – South Transit Road, Lockport, NY

VP1 is in a commercial location within Segment 2 in the western section of the Project located in the Town of Lockport, NY. Simulations show existing and proposed conditions. The location of the photograph is within the Existing ROW adjacent and parallel to commercial structures. The vantage point is looking east down the ROW with a far-reaching un-obstructive perspective. The third structure from the right is Structure 13. The proposed monopoles offer a more simplistic and streamlined look compared to the existing lattice structures. However, height differences between existing and proposed structures are noticeable from this vantage point. The vantage point is reflective of a large number of viewers of a specific local constituency that would generally have short duration views.

VP2 – Beattie Avenue, Lockport, NY

VP2 is in a residential location within Segment 2 in the western section of the Project located in the Town of Lockport, NY. Simulations show existing and proposed conditions. The location of the photograph is within the Existing ROW adjacent and parallel to residential homes. The vantage point is looking west down the ROW with a far-reaching un-obstructive perspective. The second structure from the left is Structure 23. The proposed monopoles offer a more simplistic and streamlined look compared to the existing lattice structures. However, height differences between existing and proposed structures are noticeable from this vantage point. The vantage point is reflective of a small number of viewers of a specific local constituency that would generally have short and long duration views.

VP3 – Lewiston Road, Alabama, NY

VP3 presents the relocation alternative in Segment 4 Relocated. The existing conditions photograph shows Existing Line 112 in addition to other utility infrastructure. The simulation shows the removal of Existing Line 112 and the installation of double circuit structures. The structure on the right is Structure 142. The photograph vantage point is from Lewiston Road. It is reflective of a small number of viewers of a specific local constituency that would generally have short duration views.

VP4 – TWMA Overlook - Lewiston Road, Alabama, NY

VP4 presents the relocation alternative in Segment 4 Relocated. The existing conditions photo shows Existing Line 112 in addition to other utility infrastructure. The simulation shows the removal of Existing Line 112 and the installation of double circuit structures. The photograph

vantage point is from Lewiston Road looking onto the TWMA approximately 230 feet east of two residences. It is reflective of regional and local viewers that would generally have short and long duration views.

VP5 – JWWMA Overlook - Lewiston Road, Alabama, NY

Viewpoint VP5 is in a rural location within Segment 7 in the eastern section of the Project located in the Town of Alabama, NY. Simulations show existing and proposed conditions. The location of the photo is within the Existing ROW adjacent and parallel to residential structures. The vantage point is looking east down the ROW with a far-reaching un-obstructive perspective. The second structure from the right is Structure 198. The proposed monopoles offer a more simplistic and streamlined look compared to the existing lattice structures. The vantage point is reflective of a small number of viewers of a specific local constituency that would generally have short duration views.

4.4.10 Mitigation

Visual impacts from most of the Project are anticipated to be minimal. The new structures in Segment 4 Relocated would result in a greater visual impact because of the relocation of the line closer to Lewiston Road. This is an area of regional and local viewers that would generally have short and long duration views.

In accordance with the NYSDEC Policy, the feasibility and possible benefits of various visual impact mitigation measures are described below.

Screening. Natural screening by vegetation or buildings occurs throughout the study area and is effective in many cases. Screening is most effective the farther the viewer is from the Project, as noted in the viewshed results. There is vegetative screening that parallels both sides of the ROW that offers proximal screening or at least to lower portions of structures. However, there still will be many views occurring from those properties contiguous to the ROW. Because of the heights of the proposed transmission structures and the length of the Project, it is not feasible to provide additional screening in the form of fencing, berms, or plantings to preclude views of the upper portions of structures.

Relocation. Existing Line 112 cannot be entirely rerouted as that would entail additional ROW acquisitions and clearing for new ROW, which would in turn cause greater impacts to natural

resources and visual aesthetics, rather than reduce and avoid those impacts. Segment 4 Relocated would relocate approximately 2.2 miles of Existing Line 112 from Segment 4 Existing to more along Lewiston Road where the visual aesthetics are more in-line with the existing conditions of the roadway. This will have a positive visual impact to Segment 4 Existing where existing structures that will no longer be utilized will be removed along with the overhead line (except within the portions of the TWMA where NYSDEC would like the structures to remain for nesting).

Downsizing and Low Profile. The size and profile of the Project in terms of dimensions, voltage, and adjacent transmission line structure heights is necessary to achieve Project purpose and need (i.e., addressing increased loading and improved system reliability). Therefore, downsizing is not a feasible mitigation alternative.

Alternate Technologies. Alternate technologies for transference of electricity that would utilize the Existing ROW do not exist.

Non-specular Materials. All new conductor being installed as part of this Project will be non-specular, and the proposed transmission structures will be galvanized.

Lighting. There is no lighting required for the Project.

Maintenance. National Grid will maintain the ROW according to TROWMP.

4.5 CULTURAL RESOURCES

In accordance with PSL §122(1)(c) and 16 NYCRR §§86.3(a)(1)(iii) and 86.5(b)(2)(i), this section includes an evaluation of existing cultural resources and potential impacts resulting from the construction and operation of the Project. Cultural resources include archeological and historic architectural resources that are listed on, eligible, or potentially eligible for listing on the State or National Register of Historic Places ("NRHP").

This section describes the available cultural resource data gathered to date, and steps taken in consultation with the New York State Office of Parks, Recreation, and Historic Preservation ("OPRHP") regarding the identification of archeological and historic architectural resources assessments for the Project. Consultation was initiated with OPRHP through CRIS including the submission of Project information and a request for Project review. On February 16, 2021, OPRHP issued a request for additional information, which was provided, and on March 30, 2021, OPRHP issued a letter requesting a Phase IA archeological survey, and a Phase IB archeological testing based on the results of the Phase IA archeological survey. The Phase IA archeological survey and Phase IB archeological testing were conducted, and the results, including an avoidance plan for known NGD Area 7 Site 1, were submitted to OPRHP. On June 22, 2022, OPRHP issued an opinion letter stating, "it is the opinion of the OPRHP that no properties, including archaeological and/or historic resources, listed in or eligible for the New York State and National Registers of Historic Places will be Adversely Impacted by this Project" See Appendix A – Agency Correspondence.

The consultations and evaluations were used to determine the presence, likely presence, or absence of archaeological and historical architectural resources in the Project's area of potential effects ("APE"). The APE is defined as areas that receive direct or indirect impacts from the Project and is influenced by the scale and nature of the undertaking. Accordingly, the APE for below-ground archeological resources consists of areas involving direct physical ground disturbance by the Project. The APE for above-ground architectural resources includes the area in which the Project may directly or indirectly cause changes in the character or use of historic properties and may extend beyond the Project's limits of disturbance to take into account visual effects in the Project vicinity.

4.5.1 Existing Cultural Resource Setting

The Project is divided into six Segments, with the distance and nature of work proposed in each segment varying slightly. Required cultural resources literature reviews, archeological sensitivity assessments, and historical architectural reconnaissance surveys for each Segment are determined in consultation with the OPRHP and based on such factors as the Project impacts, percentage changes between the heights of existing and proposed transmission structures, alterations to the Project ROW, and GIS-based viewshed modeling. Hartgen Archaeological Assoc. Inc. ("Hartgen") Principal Investigators completed consultation with the OPRHP to conduct the required technical studies for the Project ROW. Hartgen's Principal Investigators exceed the Secretary of the Interior's professional qualifications standards in their respective disciplines (36 CFR 61).

4.5.1.1 Phase IA – Known Archaeological and Historic Sites

Historic properties are culturally significant properties on or eligible for inclusion in the National or State Register of Historic Places, and include archeological sites and aboveground historic sites, structures and districts. Known historic properties were identified in the vicinity of the Project ROW, as described below.

Archeological site files maintained by the OPRHP and the New York State Museum ("NYSM"), and available cultural resource management ("CRM") reports, were examined using the New York State Cultural Resource Information System ("CRIS"). Approximately 15 CRM reports have been conducted regarding cultural resources that intersect the Project APE. Additionally, over 25 historic properties are documented within 1.0 km (0.6 miles) of the Project. One (1) historic structure, the Pound-Hitchins House in the City of Lockport, is listed on the NRHP and one (1) historic district, the New York State Barge Canal, is listed on the NRHP. Five other historic properties are also NRHP-eligible (Table 4.5-1). The remaining 18 documented properties are either not eligible or have undetermined status regarding listing on the NRHP.

Table 4.5-1 NRHP-Listed and Eligible Historic Properties Located Within 1.0 km (0.6 miles) of the Project

OPRHP	Address	Name/ Description	Distance to Edge of APE	Status

Table 4.5-1 NRHP-Listed and Eligible Historic Properties Located Within 1.0 km (0.6 miles) of the Project				
14NR06614	325 Summit Street, Lockport, NY	Pound-Hitchins House; also known as the "Mount Providence:" Ruhlmann House; mid-19th-century Greek Revival, stone superstructure and foundation; constructed c. 1833; built of regular coursed, large-block ashlar Gasport Limestone.	0.48 km north	NRL
14NR06559	Waterford to Tonawanda, Whitehall, Oswego and Waterloo	New York State Barge Canal Historic District; built 1905-1959; consisting of 563 contributing buildings and structures.	Intersects eastern segment of line	NRL
06342.000086	Over the Barge Canal, Lockport, NY	Summit Street Bridge; vehicular metal-truss bridge constructed in 1911; substructure made of concrete and stone.	0.96 km north	NRE
06309.000014	8722 Bunker Hill Rd, Royalton, NY	Behe Residence; early 19th-century, two-story Greek Revival brick farmhouse.	0.44 km south	NRE
06309.000013	8239 Bunker Hill Rd, Royalton, NY	Dysinger Tavern; cobblestone Greek Revival house, c. 1830, originally a tavern; Queen Ann style porch; later used as a post office.	0.67 km south	NRE
06309.000032	7800 Akron Road, Royalton, NY	Claude Residence; Greek Revival brick farmhouse.	0.91 km south	NRE
03701.000112	Feeder Road at mile marker 38.3, Alabama, NY	Tonawanda Feeder Canal; a watered linear section of the feeder canal being a feature of the Erie Canal; supplied water for the Erie Canal, Shelby Mills and Village of Medina Power; 1824-1919.	0.06 km northeast	NRE
NRL=National Register Listed NRE=National Register Eligible				

Fifty-three (53) archeological sites have been recorded within 1.0 km (0.6 miles) of the Project APE (Table 4.5-2). Most of these sites have been previously identified by professional archeological investigations. In total, 40 archeological sites are associated solely with the Precontact Period (before European settlement, about 1609), 13 sites are related exclusively to the historic period and one (1) site contains both precontact and historic components. None of the archeological sites are NRHP-listed; 15 exclusively Precontact sites, one exclusively historic site, and one both precontact/historic site are eligible for listing on the NRHP; and the rest are either not eligible for listing on the NRHP or remain undetermined with regards to their eligibility. The NRHP eligibility of most of the exclusively historic period sites has yet to be fully evaluated by OPRHP and their eligibility status remains undetermined; three historic sites have been determined not eligible for listing.

Table 4.5-2 Archaeological Sites Located Within Approximately 1.0 km (0.6 miles) of the Project				
Site No.	Site Name	Distance to APE (km)	Period (s)/ Century(ies)	NRHP Status
03701.000008	Site ANR-5	0.25 southwest	Precontact	Undetermined

Table 4.5-2 Archaeological Sites Located Within Approximately 1.0 km (0.6 miles) of the Project

03701.000011	West Alabama Site (FOLLETT F148)	0.21 northeast	Precontact	Undetermined
03701.000024	ANR-39 Whitney Creek No. 1	0.96 southwest	Precontact	Undetermined
03701.000025	ANR-40 Whitney Creek No. 2	0.98 southwest	Precontact	Undetermined
03701.000026	ANR-41 Whitney Creek No. 3	0.97 southwest	Precontact	Undetermined
03701.000027	ANR-42 Whitney Creek No. 4	0.94 southwest	Precontact	Undetermined
03701.000029	Renegade (ANR-5/44)	0.46 southwest	Precontact	Undetermined
03701.000030	ANR-45 Tweener	0.52 southwest	Precontact	Undetermined
03701.000031	ANR-46 Whitney Creek No. 6	0.86 southwest	Precontact	Undetermined
03701.000033	Whitney Creek Site	Undisclosed areas to the southwest	Precontact with human remains	NRE
03701.000041	ANR-169 Delmar	0.33 northeast	Precontact	Undetermined
03701.000049	Olsen Marsh Knoll	0.79 northeast	Precontact	Not eligible
03701.000050	Olsen Marsh 1	0.19 northeast	Precontact	Not eligible
03701.000085	IRQ-029H John McCracken Farmstead	0.85 northeast	Historic- early to mid-19th	Undetermined
03701.000086	IRQ-030H	0.24 northeast	Historic- Late 19th-20th c	Undetermined
03701.000087	IRQ-031H	0.11 north	Historic- early to mid-19th	Undetermined
03701.000088	IRQ-032H	0.11 northeast	Historic- 20th	Undetermined
03701.000089	IRQ-033H	0.14 northeast	Historic- Late 19th-20th	Undetermined
03701.000092	IRQ-100H Frank Wagner Farm	0.14 northeast	Historic- Late 19th-20th	Undetermined
03701.000093	IRQ-003P Olsen Marsh 2	0.35 northeast	Precontact-Middle to Late Archaic	Undetermined
03701.000140	STAMP 1	0.51 southwest	Precontact-Early to Middle Woodland	NRE
03701.000141	STAMP 2	0.33 northeast	Precontact	Not eligible
03701.000142	STAMP 3	0.61 southwest	Precontact-Early Archaic	NRE
03701.000143	STAMP 4	0.68 southwest	Precontact	Not eligible
03701.000147	STAMP 8	0.21 northeast	Precontact- Late Archaic	Not eligible
03701.000148	STAMP 9	0.28 northeast	Precontact-Early to Middle Woodland	NRE
03701.000149	STAMP 10	0.06 northeast	Precontact- Early Woodland	NRE
03701.000150	STAMP 11	0.03 southwest	Precontact	NRE
03701.000151	STAMP 12	2 meters southwest	Precontact	NRE
03701.000152	STAMP 13	0.36 southwest	Precontact and Historic	NRE
03701.000153	STAMP 14	0.25 southwest	Precontact	Not eligible
03701.000154	STAMP 15	0.16 northeast	Precontact	Not eligible
03701.000155	STAMP 16	0.10 northeast	Historic- 19th	Undetermined
03701.000156	STAMP 17	0.07 southwest	Precontact-Early Archaic	NRE
03701.000157	STAMP 18	0.81 southwest	Precontact	Not eligible
03701.000158	STAMP 19	0.76 southwest	Historic- mid-19th to mid-20th	NRE
03701.000160	STAMP 21	0.44 southwest	Precontact	NRE
03701.000161	STAMP 22	0.80 southwest	Precontact	Undetermined
03701.000162	STAMP 23	0.03 southwest	Precontact	Not eligible
03701.000163	STAMP 24	0.52 northeast	Historic- 19th – early 20th	Not eligible
03701.000164	STAMP 25	0.45 southwest	Historic	Not eligible
03701.000165	STAMP 26	0.16 southwest	Historic- 19th	Not eligible
03701.000172	STAMP Water Project Stray Biface Site	0.70 northeast	Precontact	Not eligible
06304.000028/ NYSM 5959	UB 2285 Ruhlman Prehistoric Site 1	0.54 north	Precontact-Early Woodland	NRE
06304.000029/ NYSM 5958	UB 2285 Ruhlman Prehistoric Site 2	0.50 north	Precontact-Early Woodland to Late Woodland	NRE

Table 4.5-2 Archaeological Sites Located Within Approximately 1.0 km (0.6 miles) of the Project				
06304.000030/ NYSM 5961	UB 2282 Hall Prehistoric Site 1	0.44 north	Precontact-Archaic and Early Woodland	NRE
06304.000031/ NYSM 5960	UB 2283 Hall Prehistoric Site 2	0.47 north	Precontact-Early Woodland to Late Woodland	NRE
06304.000032	UB 2281 Strauss Site	0.38 south	Precontact-Early Woodland	NRE
06342.000511	LaFarge Lockport Precontact HAA-A/BAC-3	0.89 southwest	Precontact	NRE
06342.000514	Hinman Historic Site (MDS 1)	0.96 southwest	Historic- early to mid-19th	Undetermined
06342.000517	NGD Area 7 Precontact 1	0.01 north	Precontact	Undetermined
07309.000016	IRQ-034S Martin Prish Farm	0.45 northeast	Historic- Late 19th-20th	Undetermined
NYSM 3366	ACP GNSE no	0.14 north	Precontact	No eligibility

4.5.1.2 Phase 1A - Archaeological Sensitivity Assessment

Precontact period archeological sensitivity of an area is based primarily on proximity to previously documented Precontact archeological sites, known Precontact period resources (e.g., chert outcrops, fish runs, and the like), and physiographic characteristics, such as topography and drainage. Areas near lakes, ponds, streams, and wetlands are considered to have elevated sensitivity for sites associated with Native American use or occupation, because they presented potential food and water sources, as well as transportation corridors (Hartgen, 2020). Many of the Precontact period sites within the APE, especially those associated with the Archaic and Early Woodland periods, are located on the lakeshore and within major river valleys. Many of these contain large lithic (stone tool manufacturing) assemblages and features (subsoil indications) associated with possible structures including cooking hearth, dwellings, storage facilities, and other domestic related activities. The transition to agriculture in the Woodland periods led to increasing numbers and sizes of settlements on fertile land along large drainages. These types of sites typically contain evidence of large artifact assemblages with multiple features. Smaller seasonal sites are also associated with smaller waterways and wetlands. All of these types of areas are located near the Project. These are often characterized by smaller artifact assembles without a few or no features at all.

Two (2) of the precontact sites (NGD Area 7 Precontact 1 and STAMP 12) have been recorded within the Project ROW. In combination with the relatively large number of sites identified from professional surveys in the general vicinity of the Project, and the favorable topographic conditions, the Project as a whole is considered sensitive for Precontact period cultural resources, some of which may have significant research potential and be potentially eligible for the NRHP as a historic property.

The historic sensitivity of an area is based primarily on proximity to previously documented historic archeological sites, map-documented structures, or other documented historical activities. A review of historic maps for the Project has included the Gifford and Geil 1852 *Map of Niagara County, New York*; the Beers, Upton and Co. 1875 *Atlas of Niagara and Orleans Counties, New York;* The Century Map Company's 1908 *New Century Atlas of Niagara County, New York;* the Otley and Rea 1854 *Map of Genesee County*; the Everts, Ensign and Everts 1876 *Combination Atlas Maps of Genesee County*; The Century Map Company's 1904 *New Century Atlas of Genesee County, New York with Farm Records;* and the USGS topographic 15 minute quadrangle maps for Lockport, NY dated to 1897 and Medina, NY also dated to 1897. Historic structures, including homesteads, farmsteads, canals and railroads are rendered along the Project ROW on the historic maps. In addition, a number of historic farmsteads have yielded fairly large data sets with additional research potential, which has led the OPRHP to determine them eligible for the NRHP. Overall, the Project is considered sensitive for historic period cultural resources, although as the Project ROW passes largely through rural, agricultural areas, the density of historical archeological resources is considered to be relatively low.

The historic Erie Canal (known today as the Barge Canal) lies just to the east of the starting point of the Project. It appears that the modern canal prism lies within or in close proximity to the original built in 1820, known as Clinton's Ditch. If so, the later improvements have likely destroyed or disturbed these earlier iterations of the canal. The Project corridor intersects the NRHP listed Erie/Barge Canal as it heads in its easterly direction.

The Project extends eastward from the canal corridor through an area moderately populated with light industry and residential homes. Historically, there were scattered homesteads and farmsteads throughout the area. One map documented a structure of note, the Dysinger Tavern (National Register eligible) in the Town of Royalton.

The 1854 Otley *Map of Genesee County* illustrated a feeder canal in the Town of Alabama. Known as the Tonawanda Feeder Canal (National Register eligible), an important ancillary structure to the Erie Canal. The Project ROW intersects this now abandoned feeder canal as it proceeds through the Town of Alabama.

As depicted on historical maps of Genesee County, the Tonawanda Indian Reservation is in the vicinity of the Project. Its northeastern border is situated 0.50 km (0.3 miles) to the southwest of the Project ROW. The reservation was established shortly after 1857, when the Tonawanda

Band of Seneca Indians were federally-recognized and its members began to reassemble land parcels previously sold without their consent.

The eastern half of the Project ROW passes through a number of large wetlands that have been drained over the years for agricultural purposes. While many of these wet areas have returned, the original wetlands have been dramatically altered with raised roadbeds and dykes that have created a patchwork of inundated areas fundamentally different from their previous state.

4.5.2 Historic Architecture

This section provides for the identification, evaluation, and assessment of effects and mitigation (if required) from the construction and operation of the Project on architectural historic properties listed in or eligible for listing in the NRHP inside the APE. The APE accounts for both direct physical impacts within the Project LOD as well indirect visual, atmospheric, and audible effects. The level of architectural survey required is based on Section 106 of the National Historic Preservation Act ("NHPA"), as amended and re-codified (54 USC § 306108), and its implementing regulations in 36 CFR §800, and in accordance with the OPRHP's draft *Transmission Line Guidance: Project Types and Associated Survey Requirements ("OPRHP draft Guidance")*, dated November 5, 2015.

4.5.2.1 Historic Architecture Reconnaissance Survey

OPRHP issued an opinion letter stating that "it is the opinion of the OPRHP that no properties, including archaeological and/or historic resources, listed in or eligible for the New York State and National Registers of Historic Places will be Adversely Impacted by this project" and therefore, the Project is not anticipated to have adverse effects on relevant NRHP/State Register of Historic Places ("SRHP")-listed and eligible historic properties. See Appendix A – Agency Correspondence.

Potential Effects on Cultural Resources

Physical impacts to both archaeological and historic architectural historic properties have the potential to create direct effects. Increases in structure heights have the potential to create indirect visual effects. Not all effects, however, are adverse. The Project's potential to affect any historic property depends primarily on the qualities that make that property significant. If the setting of a historic property is less important than its historic or architectural qualities, then

changes to the setting's integrity may not diminish the qualities or character-defining features that qualify the historic property for inclusion in the NRHP/SRHP and therefore, there would be no adverse effect.

During consultation with OPRHP, Hartgen Archeological Associates, Inc. submitted an Avoidance Plan for known NGD Area 7 Site 1 and National Grid has committed to the use of matting during construction to protect the archaeological site (i.e., Area 7 Site 1) from construction impacts.

Potential visual effects are also highly variable. Intervening trees, foliage, buildings, objects, modern intrusions, and other visual clutter, such as telephone poles and advertisement signs, all impact setting and line-of-sight views from a historic property toward the Project. The optical effects of distance, diminishing perspective, and atmospheric conditions can also reduce overall visual impacts on historic properties, especially those located further away from the Project.

4.6 TERRESTRIAL AND WILDLIFE RESOURCES

In accordance with PSL §122(1) (c) and 16 NYCRR §86.5(a) and (b)(1),(4) and (5), this section provides a summary of the potential impacts of the Project on vegetation and wildlife that occur within the Project ROW. This section also outlines the efforts that have been undertaken to site and design the Project to avoid or minimize these potential impacts. The terrestrial ecology that occurs within the Project ROW has been characterized based on a review of orthophotography, agency correspondence, and several days of field surveys in 2019 and 2020. The resources and potential impacts described below are generally applicable to the entire route given the macro-scale of mapping these resources, therefore, the Project ROW is generally characterized in this section and differences between Segments are noted where appropriate.

The vegetation within the Project ROW includes shallow emergent marsh, shrub swamps, silver maple-ash swamp, common reed marsh, purple loosestrife marsh, successional old fields, successional scrub land, cropland (row and field crops), mowed residential lawns with trees, and herbicide-sprayed roadside/pathway.

The typical wildlife expected to occur within the Project ROW includes generalist species as well as species adapted for early successional meadows, shrub land communities and the deciduous forest that borders the Project ROW. Based on a review of U.S. Fish and Wildlife Service ("USFWS") database and

correspondence received from the New York Natural Heritage Program ("NYNHP"), there are no federally-listed plants or animals, and 13 state-listed and/or rare plant and animal species that may occur within or near the Project ROW. See Appendix A – Agency Correspondence.

4.6.1 Vegetation

Vegetation was documented during field surveys conducted during wetland delineations conducted in August, September, and October 2019, and June and November 2020. The primary vegetative communities within the Project ROW are shallow emergent marsh, shrub swamps, silver maple-ash swamp, common reed marsh, purple loosestrife marsh, successional old fields, successional scrub land, cropland (row and field crops), mowed residential lawns with trees, and herbicide-sprayed roadside/pathway. In addition to these vegetative communities, areas immediately bordering the Project ROW also included successional northern and southern hardwoods. The dominant vegetative communities have been classified according to the *Ecological Communities of New York State: Second Edition* (Edinger et al*.,* 2014), which classifies and describes ecological communities representing biological diversity in New York State. These ecological community types are further described below.

4.6.1.1 Shallow Emergent Marsh

This community is defined by Edinger et al. (2014) as a marsh meadow that occurs on mineral or deep muck soils (rather than true peat), that are permanently saturated and seasonally flooded. Water depths may range from 6 inches to 3.3 feet during flood stages, but the water level usually drops by mid- to late summer. Shallow emergent marshes are very common and quite variable. They may be co-dominated by a mixture of species or have a single dominant species. Common herbaceous plants include cattails (*Typha latifolia, T. angustifolia, T.* x *glauca*), sedges (*Carex spp*.), marsh fern (*Thelypteris palustris*), manna grasses (*Glyceria pallida, G. canadensis*), spikerushes (*Eleocharis palustris, E. obtusa*), bulrushes (*Scirpus cyperinus, S. atrovirens, Schoenoplectus tabernaemontani*), threeway sedge (*Dulichium arundinaceum*), sweetflag (*Acorus americanus*), tall meadow-rue (*Thalictrum pubescens*), marsh St. John's-wort (*Triadenum virginicum*), arrowhead (*Sagittaria latifolia*), goldenrods (*Solidago rugosa, S. gigantea*), spotted joe-pye-weed (*Eutrochium maculatum*), boneset (*Eupatorium perfoliatum*), smartweeds (*Persicaria amphibia, P. hydropiperoides*), marsh bedstraw (*Galium palustre*), jewelweed (*Impatiens capensis*), loosestrifes (*Lysimachia thyrsiflora, L. terrestris, L. ciliata*), reed canarygrass (*Phalaris arundinacea*), and Bluejoint grass (*Calamagrostis canadensis*). Invasive

species frequently found in disturbed marshes include purple loosestrife (*Lythrum salicaria*) and European common reed (*Phragmites australis*) which are better classified as purple loosestrife marsh and common reed marsh, respectively. Shallow emergent marshes may have scattered shrubs including speckled alder (*Alnus incana* ssp. *rugosa*), water-willow (*Decodon verticillatus*), shrubby dogwoods (e.g*., Cornus amomum, C. sericea*), willows (*Salix* spp.), meadow sweet (*Spiraea alba*) and buttonbush (*Cephalanthus occidentalis*). Areas with greater than 50 percent shrub cover are classified as shrub swamps. Many of the wetlands that cross the Project ROW can be characterized as shallow emergent marshes. Wetlands delineated along the Project ROW are described in further detail in Section 4.7.1. and in Appendix F – Wetland and Watercourse Delineation Report.

4.6.1.2 Shrub Swamp

This community is defined as an inland wetland dominated by tall shrubs that occur along the shore of a lake or river, or in a wet depression or valley not associated with lakes (Edinger et al. 2014). Shrub swamps may occur as a transition zone between a marsh, fen, or bog and a swamp or upland community. The substrate is usually mineral soil or muck. This is a very broadly defined community type that is very common and quite variable. Shrub swamps may be co-dominated by a mixture of species or have a single dominant shrub species. Characteristic shrubs include meadow-sweet (*Spiraea alba* var. *alba* and *S. alba* var. *latifolia*), hardhack (*Spiraea tomentosa*), gray dogwood, swamp azalea (*Rhododendron viscosum*), highbush blueberry (*Vaccinium corymbosum*), male-berry (*Lyonia ligustrina*), smooth alder (*Alnus serrulata*), spicebush (*Lindera benzoin*), willows (e.g., *Salix bebbiana, S. discolor*, *S. lucida, S. petiolaris*), wild raisin (*Viburnum nudum* var. *cassinoides*), and arrowwood. Scattered young red maple (*Acer rubrum*), American elm (*Ulmus americana*), and green ash (*Fraxinus pennsylvanica*) may be present.

4.6.1.3 Silver Maple-Ash Swamp

Edinger et al. (2014) defines this community as typically a hardwood basin swamp that typically occurs in poorly drained depressions or along the borders of large lakes, and less frequently in poorly drained soils along rivers. These sites are usually characterized by uniformly wet conditions with minimal seasonal fluctuations in water levels. The dominant tree species within this community include silver maple (*Acer saccharinum*), and green ash (*Fraxinus pennsylvanica*). This vegetative community is commonly found in the lowlands of Western New York.

4.6.1.4 Common Reed Marsh

This community is defined as a marsh that has been disturbed by draining, filling, road salts, etc. in which European common reed (*Phragmites australis*) has become dominant. (Edinger et al. 2014). Common reed marshes are often found along highways and railroads and can be found with purple loosestrife. Dominance and abundance of the common reed stand can take over a native plant community preventing classification of the marsh as one of the palustrine natural communities.

4.6.1.5 Purple Loosestrife Marsh

Edinger et al. (2014) defines this community as a marsh that has been disturbed by draining, filling, road salts, etc. in which purple loosestrife (*Lythrum salicaria*) has become dominant. Purple loosestrife marshes are often found along highways and railroads and can be found with European common reed. Dominance and abundance of the purple loosestrife stand can take over a native plant community preventing classification of the marsh as one of the palustrine natural communities.

4.6.1.6 Successional Old Field

This community is defined as a meadow dominated by forbs and grasses that occurs on sites that have been cleared and plowed (for farming or development), and then abandoned (Edinger et al. 2014). Characteristic herbs include goldenrods (*Solidago altissima*, *S. nemoralis*, *S. rugosa*, *S. juncea*, *S. canadensis*, and *Euthamia graminifolia*), bluegrasses (*Poa pratensis*, *P. compressa*), timothy (*Phleum pratense*), quackgrass (*Elymus repens*), smooth brome (*Bromus inermis*), sweet vernal grass (*Anthoxanthum odoratum*), orchard grass (*Dactylis glomerata*), common chickweed (*Cerastium arvense*), common evening primrose (*Oenothera biennis*), old-field cinquefoil (*Potentilla simplex*), calico aster (*Sympyotrichum lateriflorum* var. *lateriflorum*), New England aster (*Sympyotrichum novae-angliae*), wild strawberry (*Fragaria virginiana*), Queen-Anne's-lace (*Daucus carota*), ragweed (*Ambrosia artemisiifolia*), hawkweeds (*Hieracium* spp.), dandelion (*Taraxacum officinale*), and ox-tongue (*Picris hieracioides*). If shurbs are present, they total less than 50 percent of the community. The successional old field is a relatively short-lived community that succeeds to a shrubland, woodland, or forest community.

4.6.1.7 Successional Scrubland

Edinger et al. (2014) defines this community as occurring on previously cleared land (for farming, logging, development, etc.) or otherwise disturbed sites that contain at least 50 percent shrub cover. Characteristic shrub species within this community include gray dogwood (*Cornus racemosa*), eastern red cedar (*Juniperus virginiana*), raspberries (*Rubus* spp.), serviceberries (*Amelanchier* spp.), choke-cherry (*Prunus virginiana*), wild plum (*Prunus americana*), sumac (*Rhus glabra, R. typhina*), nanny-berry (*Viburnum lentago*), and arrowwood (*Viburnum dentatum* var. *lucidum*). Non-native invasive shrubs include hawthornes (*Crataegus* spp.), multiflora rose (*Rosa multiflora*), Russian and autumn olive (*Elaeagnus angustifolia, E. umbellata*), buckthorns (*Rhamnus cathartica, Frangula alnus*), and shrubby honeysuckles (*Lonicera tatarica, L. morrowii, L. maacckii*).

4.6.1.8 Cropland (Row and Field Crops)

Throughout the Project ROW cropland communities, both row and field crops, are present. Row cropland are agricultural fields planted with row crops such as corn, potatoes, and soybeans. Field croplands are agricultural fields planted with field crops such as alfalfa, wheat, timothy, and oats. The field cropland community also includes hayfields that may or may not be rotated for pasture.

4.6.1.9 Successional Northern Hardwoods

This community is defined as a hardwood or mixed forest that occurs on sites that have been cleared or otherwise disturbed (Edinger et al. 2014). Characteristic trees and shrubs include any of the following: quaking aspen (*Populus tremuloides*), big-toothed aspen (*Populus grandidentata*), balsam popular (*Populus balsaifera*), paper birch (*Betula papyrifera*), gray birch (*Betula populifolia*), pin cherry (*Prunus pensylvanica*), black cherry (*Prunus serotina*), red maple (*Acer rubrum*), white pine (*Pinus strobus*), with lesser amounts of white ash (*Fraxinus Americana*), green ash (*Fraxinus pennsylvanica*), and American elm (*Ulmus Americana*). Some introduced species may be found within this community.

4.6.1.10 Successional Southern Hardwoods

This community is defined as a hardwood or mixed forest that occurs on sites that have been cleared or otherwise disturbed (Edinger et al. 2014). Characteristic trees and shrubs include any of the following: American elms (*Ulmus americana*), slippery elm (*Ulmus rubra*), white ash

(*Fraxinus americana*), red maples (*Acer rubrum*), box elders (*Acer negundo*), silver maple (*Acer saccharinum*), sassafrass (*Sassafras albidum*), gray birch (*Betula populifolia*), hawthorns (*Crataegus* spp.), eastern red cedar (*Juniperus virginiana*), and chokecherries (*Prunus virginiana*). Some introduced species may be found within this community.

4.6.1.11 Mowed Lawn with Trees

The western portion of the Project ROW cuts across some properties that are characterized as mowed lawn with trees. Edinger et al. (2014) characterizes this community as residential, recreational or commercial land in which the groundcover is dominated by clipped (mowed) grasses and forbs and is shaded by at least thirty percent (30%) cover of trees. Ornamental and/or native shrubs may be present, usually with less than fifty percent (50%) cover. The groundcover is typically maintained by mowing and broadleaf herbicide application.

4.6.1.12 Herbicide-sprayed Roadside/Pathway

Some areas along the Project ROW are characterized as herbicide-sprayed roadside/pathways. Edinger et al. (2014) characterizes this community as a narrow strip of low-growing vegetation along the side of a road or along utility ROW corridors (*e.g.,* power lines, telephone lines, gas pipelines) that is maintained by spraying herbicides. Typical herbaceous species in these areas are similar to those found in successional old fields but are maintained by these vegetation management practices. Goldenrods (*Solidago altissima*, *S. nemoralis*, *S. rugosa*, *S. juncea*, *S. canadensis*, and *Euthamia graminifolia*), Queen Anne's lace (*Daucus carota*), timothy grass (*Phleum pratense*), barnyard grass (*Echinochloa crus-galli*), asters (S*ympyotrichum lateriflorum* var. *lateriflorum* and *Sympyotrichum novae-angliae*), birdsfoot trefoil (*Lotus corniculatus*), curled dock (*Rumex crispus*), thistle (*Cirsium* spp.), milkweed (*Asclepias syriaca*), crown vetch (*Coronilla varia*), and common mullein (*Verbascum thapsus*) are typical of this community type.

4.6.2 Wildlife

The successional communities, shrublands, and managed Existing ROW provide wildlife habitat for a variety of species. Many of these species are generalist species that commonly inhabit the suburban and rural landscape found within the Project ROW. Other species have more specialized habitat requirements and are dependent on the maintenance of the Project ROW as meadow and shrub land communities. Variations in vegetative community types (e.g., deciduous

hardwood and conifer are community types within the forested upland vegetation cover type) and other conditions, such as topography and land use disturbance, provide a variety of wildlife habitat conditions. Wildlife species likely to occur in each habitat type were determined by direct observation during field surveys, by consultation with applicable regulatory agencies, and by existing, available, online data. Existing plant communities, as well as aspects of the physical environment (*e.g.,* climate, microclimate, hydrology, geology), will influence the wildlife species that are present in a particular habitat. Environmental field survey data and available resource materials were used to categorize the different wildlife habitat types located within the Project ROW. The habitat types identified include open uplands, agricultural areas, scrub-shrub wetlands, emergent wetlands, and open water.

Many of the species occurring in the vicinity of the Project ROW are seasonal migrants that travel substantial distances between breeding and wintering areas. Examples of this are avian species that breed in the area, but then winter elsewhere. Other species may have life history and habitat requirements that result in seasonal shifts of habitat usage within the Project ROW or region, such as deer movement to preferred wintering habitats. At the most limited end of the species movement spectrum, certain other species will simply remain in the immediate area of the Project ROW year-round or make only very limited movements between closely associated habitats, as dictated by their life history, overall mobility, and occurrence of acceptable habitat conditions within a relatively small area.

Large mammalian species may occur in the vicinity of the Project ROW such as the white-tailed deer (*Odocoileus virginianus*). Forest lands, wetlands, reverting farmlands, and active farmlands provide food and cover for the white-tailed deer. Mature coniferous stands provide critical winter habitat for the white-tailed deer. The state-wide population of deer has been on the upswing since the turn of the 20th century through carefully monitored hunting regulations and improved habitat (NYSDEC, 2021c).

Smaller mammalian species may also occur within the vicinity of the Project such as beavers (*Castor spp.*), and muskrats (*Ondatra zibethicus*). The wetland areas, especially those within the NYSDEC Wildlife Management Areas, provide critical food and habitat for beavers and muskrats in the area (NYSDEC, 2021a, 2021e).

The forested habitats in the immediate vicinity of the Project and surrounding area are year-round homes to several smaller mammal species as well. The typical mammal species that are

expected to occur in this region are raccoon (*Procyon lotor*), eastern gray squirrel (*Scirus carolinensis*), and striped skunk (*Mephitis mephitis*), which are associated with open habitats. Also, having the potential to occur in the vicinity are Virginia opossum (*Didelphis virginiana*), eastern chipmunk (*Tamias striatus*), Eastern cottontail rabbit (*Sylvilagus floridanus*), woodchuck (*Marmota monax*), Norway rat (*Rattus norvegicus*), and house mouse (*Mus musculus*) (Whitaker, Jr. and Hamilton, Jr.; 1998).

Bird species potentially occurring in the vicinity of the Project ROW also reflect those typical of Western New York and Southern Ontario. Associated with the aquatic environments are such common New York bird species as red-winged blackbird (*Agelaius phoeniceus*), marsh wren (*Cistothorus palustris*), swamp sparrow (*Melospiza georgiana*), Virginia rail (*Rallus limicola*), common yellowthroat (*Geothlypis trichas*), American bittern (*Botaurus lentiginosus*), alder flycatcher (*Empidonax alnorum*), willow flycatcher (*Empidonax trallii*), and Lincoln's sparrow (*Passerella lincolnii*) (Edinger et al., 2014; Levine, 1998).

A diverse array of smaller songbird and other passerine species would also be expected to occur in successional shrublands. Characteristic birds with varying abundance include gray catbird (*Dumetella caroliniensis*), brown thrasher (*Toxostoma rufum*), blue-winged warbler (*Vermivora pinus*), golden-winged warbler (*V. chrysotera*), chestnut-sided warbler (*Dendroica pensylvanica*), yellow-breasted chat (Icteria virens), eastern towhee (*Pipilo erythrophthalmus*), field sparrow (*Spizella pusilla*), song sparrow (*Melospiza melodia*), and indigo bunting (*Passerina cyanea*) (Edinger et al., 2014; Levine, 1998).

Amphibians and reptiles may commonly be found within the Project ROW. Characteristic amphibians that breed in shallow emergent marshes include frogs such as Northern Spring Peeper (*Pseudacris crucifer*), Green Frog (*Rana clamitans melanota*), Eastern American Toad (*Bufo americanus*), Gray Tree Frog (*Hyla versicolor*), Western Chorus Frog (*Pseudacris triseriata*), Bullfrog (*Rana catesbeiana*), Northern Leopard Frog (*Rana pipiens*), Pickerel Frog (*Rana palustris*) and Wood Frog (*Rana sylvatica*) (Edinger et al., 2014; Breisch et al, 1999; NYSDEC, 1999b). The following salamanders have either been reported within the Project ROW or have the potential for occurrence: Jefferson Salamander (*Ambystoma jeffersonianum*), Blue-spotted Salamander (*Ambystoma laterale*), Spotted Salamandar (*Ambystoma maculatum*), Northern Dusky Salamander (*Desmognathus fuscus*), Allegheny Dusky Salamander (*Desmognathys ochrophaeus*), Northern Redback Salamander (*Plethodon cinereus*), Northern Slimy Salamander (*Pletohdon glutinosus*), Four-toed Salamander (*Hemidactylium scutatum*) and Northern Two-lined

Salamander (*Eurycea bislineata*) (NYSDEC, 1999a). The Northern Water Snake (*Nerodia s. sipedon*), Northern Brown Snake (*Storeria d. dekayi*), Northern Redbelly Snake (*Storeria occiptomaculata*), Common Garter Snake (*Thamnophis sirtalis*), Smooth Green Snake (*Opheodrys vernalis*), Black Rat Snake (*Elaphe alleganiensis*), and the Eastern Milk Snake (*Lampropeltis t. Triangulum*) are known some of the snakes that are known to occur in this area (NYSDEC, 1999c). Turtles that may occur in this region include Common Snapping Turtle (*Chelydra serpentina*), Spotted Turtle (*Clemmys guttata*) Wood Turtle (*Glyptemys insculpta*), and Painted Turtle (*Chrysemys picta*) (NYSDEC, 1999d).

4.6.3 Endangered and Threatened Species

Section 7 of the Endangered Species Act ("ESA") outlines the procedures for federal interagency cooperation to protect federally-listed endangered and threatened species and designated critical habitats. The USFWS provides information and consultation for the protection of federally-listed threatened, endangered, and rare species. State-listed threatened, endangered, and rare species are protected under New York State law. The NYNHP provides information and consultation for protection of state-listed threatened, endangered, and rare species. Information on federally-listed and state-listed species was obtained from the USFWS and NYNHP and is provided in Table 4.6-1 and described in the sections below. According to the USFWS, there are no federally-listed threatened or endangered species identified as potentially present within the Project ROW. However, there are 13 state-listed threatened, endangered and rare species identified as potentially present within the Project ROW which include 11 state-listed birds, one (1) state listed fish species, and one (1) state-listed plant species, as identified in Table 4.6-1. Additionally, NYNHP indicated that portions of the Project ROW are within or near a Raptor Winter Concentration Area. See Appendix A – Agency Correspondence.

Table 4.6-1 Federal and State-Listed Threatened and Endangered Species Potentially Present Within the Project ROW				
Classification	**Common Name**	**Scientific Name**	**Status**	**Anticipated Impact**
Federal[1]				
N/A	N/A	*N/A*	N/A	N/A
State[2]				
Birds	Bald Eagle	*Haliaeetus leucocephalus*	Threatened	None
	Black Tern	*Chlidonias niger*	Endangered	None
	Henslow's Sparrow	*Ammodramus henslowii*	Threatened	None
	King Rail	*Rallus elegans*	Threatened	None
	Least Bittern	*Ixobrychus exilis*	Threatened	None
	Northern Harrier	*Circus hudsonius*	Threatened	None
	Pied-billed Grebe	*Podilymbus Podiceps*	Threatened	None
	Prothonotary Warbler	*Protonotaria citrea*	Rare (Protected Bird) – Imperiled in NYS	None
	Ruddy Duck	*Oxyura jamaicensis*	Rare (Game Species) – Critically Imperiled in NYS	None
	Sedge Wren	*Cistothorus platensis*	Threatened	None
	Short-eared Owl	*Asio flammeus*	Endangered	None
Fish	Black Bullhead	*Ameiurus melas*	Rare (Unlisted) - Critically Imperiled in NYS	None
Plants	Heart-leaved Plantain	*Plantago cordata*	Rare – Vulnerable in NYS	None

Notes:
[1] Source: USFWS Official Species List
[2] Source: NYNHP consultation (see Appendix A – Agency Correspondence of this Application).

4.6.4 Federally-Listed Species

In accordance with the USFWS New York field office, the USFWS online database (Information for Planning and Consultation, or "IPaC") was reviewed to determine whether any federally-listed threatened or endangered species occur within the Project ROW. The database includes species ranges and known locations for federally-listed threatened or endangered species down to the community level. No federally-listed threatened or endangered species were identified through IPaC as having the potential to occur within the Project ROW.

4.6.5 State-Listed Species

A letter was submitted to the NYNHP on April 9, 2020 requesting any information on state-listed threatened, endangered or rare species records within the Project area (see Appendix A – Agency Correspondence). Information on state-listed species was received in correspondence from the NYNHP on May 5, 2020. The NYNHP indicated that there are seven (7) NYS threatened species, two (2) NYS endangered species, and four (4) rare species potentially within the Project vicinity. Since the Project vicinity crosses both NYSDEC Region 8 Office (Genesee County) and NYSDEC Region 9 Office (Erie County), a site-specific consultation request regarding threatened, and endangered, and rare species was submitted to both offices. A discussion of the state-listed threatened and endangered species is provided below.

4.6.5.1 Bald Eagle

The bald eagle (*Haliaeetus leucocephalus*) is a state-listed threatened species. It is one of the largest birds of prey (raptors) found in North America. Eagles prefer undisturbed areas near large lakes and reservoirs, marshes, and swamps, or stretches along rivers where they can find open water and their primary food, which is fish (NYSDEC, 2021d). They are a long-lived bird, with a life span in the wild of more than 30 years. Bald eagles mate for life, returning to nest in the same general area (within 250 miles) from which they fledged. Once a mating pair selects a nesting territory, they use it for the rest of their lives. A bald eagle nest is a large structure, usually located high in a tall, live white pine tree near water.

4.6.5.2 Black Tern

The black tern (*Chlidonias niger*) is a state-listed endangered bird species. They are a semi-colonial waterbird that nests on inland marsh complexes, ponds, mouths of rivers and shores of large lakes. The black turn is approximately 10-inches in length and 1.75-2.0-ounces in weight. The major cause of declines in NYS is habitat degradation (habitat quality, water quality, prey populations and agricultural pesticide contamination) (NYSDEC, 2021d).

4.6.5.3 Henslow's Sparrow

Henslow's sparrow (*Ammodramus henslowwi*) is a state-listed threatened species. It is a small song bird that occurs in loose colonies. Generally, habitat consists of fallow, weedy, often

moist fields and meadows. In NYS, populations are very localized and found primarily in the central and western parts of the state (NYSDEC, 2021d).

4.6.5.4 King Rail

The king rail (*Laterallus jamaicensis*) is a state-listed threatened species. The king rail is the largest and rarest of the secretive, marsh-dwelling rail species found in NYS. It measures 15- to 19-inches in length and has a wingspan of 21- to 25-inches. King rails utilize a variety of wetlands including brackish coastal marshes, tidal and non-tidal freshwater cattail marshes, prairie swamps, shrub swamps, and rice fields. In NYS, scattered breeding records have occurred in the southern Hudson River Valley and within large wetlands associated with the Great Lakes (NYSDEC, 2021d).

4.6.5.5 Least Bittern

The least bittern (*Ixobrychus exilis*) is a state-listed threatened bird species. It is a small vocal bird that occurs in freshwater and brackish marches with tall, dense emergent vegetation such as cattails, sedges and rushes that are interspersed with clumps of woody shrubs and open water. In NYS they thrive in the large expansive cattail marshes of the Great Lakes, the Finger Lakes, Lake Champlain and the St. Lawrence and Hudson River Valleys. They feed primarily on small fish, such as minnows, sunfish and perch, as well as insects, snakes, frogs, tadpoles, salamanders, crayfish and some small mammals (NYSDEC, 2021d).

4.6.5.6 Northern Harrier

The northern harrier (*Circus cyaneus*), formerly known as the marsh hawk, is a state-listed threatened bird species. Its prey consists of mostly rodents and small birds detected using extremely keen hearing. Communal flocks roost on the ground during winter and migratory periods in agricultural fields, abandoned fields and salt marshes. Breeding occurs in both freshwater and brackish marshes, tundra, fallow grasslands, meadows and cultivated fields (NYSDEC, 2021d).

4.6.5.7 Pied-billed Grebe

The pied-billed grebe (*Podilymbus Podiceps*) is a state-listed threatened bird species. It is a small waterbird with an average weight of 1 pound. They are known to habitat on open lakes and

rivers, estuaries, and tidal creeks. They return to NYS after over wintering in mid-southern US, where they build floating platform nests in open water or within stands of tall, emergent vegetation such as cattails. Population declines have mostly coincided with the availability of suitable habitat and exposure of pesticides (NYSDEC, 2021d).

4.6.5.8 Prothonotary Warbler

The prothonotary warbler (*Protonotaria citrea*) is a state-listed rare species. It is considered a high priority species of greatest conservation concern, and a protected bird that is imperiled in NYS. The prothonotary warbler is a cavity-nester that breeds in wooded habitats near water, particularly in flooded bottomland hardwood forests, cypress swamps, and along large lakes and rivers. The first confirmed breeding ground in NYS was in 1931 at Oak Orchard Swamp in Genesee County, which is well above the core distribution of the species (NYSDEC, 2021d).

4.6.5.9 Ruddy Duck

The ruddy duck (*Oxyura jamaicensis*) is a state-listed rare species. It is critically imperiled in NYS and is known as a game species. The ruddy duck is a diving duck that inhabits large lakes, rivers, and bays. Ruddy duck population counts are not well known but appear to be secure across NYS except on Long Island (NYSDEC, 2005).

4.6.5.10 Sedge Wren

The sedge wren (*Cistothorus platensis*), formerly known as the short-billed marsh wren, is a state-listed threatened species. It is a rare small wren that breeds locally. Its habitat is in wet meadows or hayfields dominated by sedges and grasses. In NYS it was previously listed as a species of special concern but is now considered a threatened species with records mostly in the St. Lawrence Valley and the Lake Ontario Plain (NYSDEC, 2021d).

4.6.5.11 Short-eared Owl

The short-eared owl (*Asio flammeus*) is a state-listed endangered bird. It is a medium sized owl of open country including grasslands and marshlands, where they opportunistically hunt small mammals. NYS is at the southern edge of the short-eared owls breeding range. Northern populations are believed to be highly migratory. In NYS they are more common as winter residents

with breeding being largely limited to the St. Lawrence and Lak Champlain Valleys, and the Great Lakes plains and the marshlands of Long Island (NYSDEC, 2021d).

4.6.5.12 Black Bullhead

The black bullhead (*Ameiurus melas*) is a state-listed rare, critically imperiled, species. It inhabits muddy ditches, streams and ponds. Black bullheads are uncommon in NYS, restricted to the upper Genesee River drainage, a few locations in the Lake Ontario drainage, and in the St. Lawrence tributaries (NYSDEC, 2021d).

4.6.5.13 Heart-leaved Plantain

The heart-leaved plantain (*Plantago cordata*) is a state-listed rare vulnerable vascular plant. There are nearly 30 known populations and sub-populations scattered along the Hudson River, but only a few in western NYS. In western NYS, it is found along gravelly streams through red maple hardwood swamps of the Tonawanda Oak Orchard Swamp drainage and is semi-aquatic in marshes and along streams. The heart-leaved plantain flowers from April through July with mature fruits present in August and September. The ideal survey period is mid-May to early October (NYNHP, 2021).

4.6.6 Project Effects

4.6.6.1 Project Effects on Vegetation

Vegetative communities within the Existing ROW will be temporarily disturbed by construction activities and equipment access. Additional clearing and widening of the ROW is expected to occur in Segment 3, Segment 5 and Segment 7 and new ROW will be established in Segment 4 Relocated. Clearing will be kept to a minimum and to meet standards identified in the TROWMP. Within the Project ROW, trees and shrubs will be mowed or cleared to provide unimpeded and safe access to proposed structure work sites. This activity will result in minor, short-term changes to the existing conditions and no permanent impacts are anticipated. The TROWMP identifies various goals associated with vegetation management along transmission ROWs, including doing so in a manner that encourages development of a rich, diverse blend of stable herbaceous and compatible shrub communities and to maintain the environmental quality of sensitive resources and areas in the ROW, all while maintaining the integrity of the transmission facility. Clearing will be minimal and will consist primarily of mowing brush along the Project

ROW to provide clear and safe work areas and access to work locations. Post-construction vegetative maintenance on all segments will include the continued removal of tall growing species; however, some compatible low growing species and all low growing woody shrubs and herbaceous species will be allowed to revegetate.

The establishment of a maintained ROW for Segment 4 Relocated will have an incremental impact to vegetative communities since it is parallel to a public road and will partially be within an existing road right-of-way along the shoulder for Lewiston Road, and represents only a widening or slight expansion of the already existing conditions. Following construction, the vegetation on all Segments of the Project ROW, other than Segment 4 Existing, will be maintained in accordance with National Grid's TROWMP and will return to the same shrub and herbaceous vegetative cover type that presently exists on the Existing ROW. There were no federally-listed or state-listed threatened or endangered plant species identified within the Project ROW. However, there was one (1) state-listed rare plant species (heart-leaved plantain) near Segment 5. Because the Project is a rebuild of an existing transmission line within Existing ROW (for all but Segment 4 Existing and Relocated) that traverses primarily developed and residential land, the Project is not anticipated to dramatically contribute to habitat fragmentation on a large scale. As such, there are no anticipated significant long-term impacts to any vegetative communities as a result of constructing the Project.

4.6.6.2 Project Effects on Wildlife

Direct impacts to wildlife are expected to correlate with the impacts to plant communities discussed above. Temporary disturbance to plant communities will be minimal with the greatest disturbance occurring at each new structure location and the establishment of the Segment 4 Relocated. The disturbance along the Existing ROW for structure replacements will have a negligible impact on wildlife since each new structure location is in close proximity to an already existing structure and construction activities at any single structure location will be short-term lasting for only three to five days. Given that the Project is primarily located within Existing ROW, disturbance and impacts to wildlife are expected to be minimal.

Those wildlife species utilizing any areas of scrub-shrub or woodlands where clearing is proposed may be temporarily affected by the loss of woody species for food, shelter and nesting; however, the wooded areas located immediately adjacent or in close proximity to the Project ROW will be unaffected and will continue to provide this habitat component. A large portion of the

existing plant communities that are in early successional stages will remain unaltered by the Project. Therefore, wildlife species that utilize these cover types will be largely unaffected as they will continue to have a significant amount of suitable habitat available within and in the vicinity of the Project ROW.

Due to the linear nature of rebuild activities, impacts are anticipated to be brief within any given area. Wildlife patterns of movement are expected to return to "normal" following the completion of the construction activities at a given site.

4.6.6.3 Impacts to Federally- and State-listed Species

The general construction and operational impacts of the Project would also be applicable to endangered and threatened species. Due to the limited occurrence and distribution of endangered and threatened species, certain activities which coincide with locations of State endangered/threatened species or their critical habitats may have the potential to adversely affect protected individual organisms or populations. To avoid such impacts, a general habitat assessment is provided below. The assessment is based on agency-identified species within and in the vicinity of the Project ROW, results of wetland and general habitat field surveys conducted to date, and other publicly available information. In particular, the following section assesses the potential for suitable habitat to exist within the Project ROW, and identifies any specific recommendations or areas where focused, species-specific surveys are recommended.

Effects on Federally-Listed Species

There are no anticipated effects to federally-listed species since according to the USFWS IPaC there are no known occurrences or known habitat of federally-listed species within the Project ROW.

Effects on State-Listed Species

The NYNHP has records of 12 different state-listed threatened, endangered or rare birds, and fish recorded within or in the vicinity of Segments 2, 3, 4 Existing, 4 Relocated, 5, and 7 which cross either or both NYSDEC Region 8 and Region 9 (see Appendix A – Agency Correspondence).

According to direct consultations with the NYSDEC Region 9 Office (Erie County, Segments 1, 2 and 3) on October 7, 2020, the NYSDEC concurred that the Project is unlikely to result in an incidental take of an endangered or threatened species. However, the office noted that

an occurrence of the short-eared owl has been recorded near the ROW along Bulmore Road in the Town of Royalton (Segment 2). The NYSDEC has requested that work activities between Gasport Road and Oak Lane located in Segment 2 be avoided between November 1st and March 30th in order to reduce the likelihood of negative effects to the species. (See Appendix A – Agency Correspondence.)

According to a consultation response letter received on January 19, 2021 from the NYSDEC Region 8 Office (Genesee County, Segments 4 Existing, 4 Relocated, 5 and 7), there are multiple threatened and endangered species that breed within the wetlands and grasslands of TWMA, including black tern, least bittern, pied-billed grebe, sedge wren, bald eagle, and northern harrier. Therefore, NYSDEC will most likely require work within the TWMA to avoid the breeding season for grassland and march birds which is from April 23rd to August 15th. However, further coordination may be necessary with the regional biologists closer to the start of construction. NYSDEC Region 8 currently has no known bald eagle nests in the area but requests additional consultation closer to the start of construction. At this time, there are no anticipated impacts to bald eagles. The northern harrier and short-eared owl are known to winter in and around the TWMA and nearby Iroquois National Wildlife Refuge (NWR) within both grasslands and emergent habitat. The NYSDEC currently does not anticipate the Project will result in negative effects to these species and did not indicate wintering restrictive dates are needed. However, the NYSDEC requests additional coordination closer to construction. For the portion of work in and around the JWWMA, NYSDEC requests an ideal work period of August 16th to October 30th due to the presence of both the short-eared owl and the northern harrier. National Grid plans to adhere to these restrictive dates as much as possible in order to minimize and avoid potential negative effects on state-listed threatened and endangered species.

Additionally, NYNHP has indicated that a state rare critically imperiled fish, black bullhead, was observed in 2012 at the corner of Segment 4 Relocated where Lewiston Road meets Feeder Road. A state rare bird, ruddy duck was documented in 2001 200-yards northwest of Segment 4 Relocated, and the prothonotary warbler was documented in 2014 0.5 miles southwest of Segments 3, 4 Existing and 4 Relocated. Initial field observations of the Project ROW did not document any occurrences of this species. Most Project activities in these areas will be located within Existing ROWs. Mitigation measures such as the use of tracked equipment and mats will be prescribed on a site-by-site basis in environmentally sensitive areas and erosion and sediment control measures designed to maintain and protect soil and water resources both during and after

construction will be prescribed for all areas where soil disturbance occurs. Therefore, in-stream activities would not occur in this area and impacts to this fish species, if still present, are not anticipated. In addition, impacts to the bird species are not anticipated since construction activities will occur primarily within Existing ROW.

The locations of any of these species that are known to occur within or near the Project ROW will be identified in the EM&CP along with measures that will be taken to protect these resources.

4.7 WETLANDS AND WATER RESOURCES

In accordance with PSL §122(1)(c) and 16 NYCRR §86.5(a) and (b)(1)(4)(6), this section describes the studies and methodology undertaken to identify the potential changes or effects of the construction and operation of the Project on wetlands and water resources. This section also describes efforts undertaken during the siting and design of the Project to avoid or minimize potential environmental effects on these resources.

4.7.1 Background

Aerial photographs, topography, and wetland maps were reviewed prior to conducting field surveys to identify and delineate wetland and watercourse (stream) resources within and along the Project ROW. The NYSDEC wetland digital mapping data was obtained from NYS GIS Clearinghouse to map wetland areas protected under the NYS Freshwater Wetland Act (Article 24 of the Environmental Conservation Law of 1975) in the vicinity of the Project ROW. The NYSDEC hydrological digital mapping data was also obtained from NYS GIS Clearinghouse to show mapped NYSDEC streams protected under the NYS Protected Waters Program (Article 15 of the Environmental Conservation Law of 1975) in the vicinity of the Project ROW. The USFWS also produces publicly available mapping of potential wetland areas nationwide as part of the National Wetlands Inventory ("NWI"), and this dataset was obtained and overlaid for the Project ROW for a review of potential federal jurisdictional wetlands and watercourse resources.

All observed wetlands and watercourses within the Project ROW were delineated in the field using the *U.S. Corps of Engineers Wetlands Delineation Manual* (the USACE Manual) (Environmental Laboratory, 1987), the USACE *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0)* (the Regional Supplement) (Environmental Laboratory, 2012) and the *1995 New York State Freshwater Wetlands Delineation Manual* (the NYS manual) (NYSDEC, 1995). Both Manuals and the Regional Supplement use three parameters to identify and delineate wetland boundaries: evidence of wetland hydrology; the presence of hydric soils; and the predominance of hydrophytic (wetland) plant species as defined by the *2016 National Wetland Plant List* (Lichvar et al., 2016). Wetland and watercourse delineated boundaries along the Project ROW have been depicted on Figure 2-5 provided in Exhibit 2 using GPS data points obtained in the field at each wetland and watercourses. Figure 2-5 also shows NYSDEC wetlands that are mapped within the Project ROW. Table 4.7-1

lists the wetlands and Table 4.7-2 lists the waterbodies (streams) delineated in the field. See also Appendix F – Wetland and Watercourse Delineation Report.

4.7.2 Existing Wetland Resources

A variety of wet meadows, marshes, scrub-shrub wetlands and forested wetlands associated with rivers, perennial and intermittent streams, and depressions occur within and adjacent the Project ROW. A total of 28 distinct wetland complexes were field delineated between August 6 and October 2, 2019, June 16, 2020, and November 12 and 13, 2020 within and adjacent to the Project ROW. These consisted of cover type components of palustrine emergent ("PEM"), palustrine scrub-shrub ("PSS"), palustrine forested ("PFO"), and open-water ("PUB") wetlands (see Table 4.7-1 – Wetlands within the Project ROW and Appendix F – Wetland and Watercourse Delineation Report). Some of these wetlands are associated with mapped NYSDEC freshwater wetlands and thus are regulated under the NYS Freshwater Wetlands Act and its implementing regulations. While some of the delineated wetlands are associated with mapped wetlands in the USFWS NWI dataset, only 18 of the delineated wetlands within the Project ROW are anticipated to be regulated by the USACE under the Navigable Waters Protection Rule of 2020, and Sections 401 and 404 of the Clean Water Act. These 18 wetlands are considered directly adjacent to or have a surface water connection to other Waters of the U.S. ("WOTUS"). The remaining delineated wetlands were not observed in the field or through a review of aerial imagery to have a surface hydrology connection to other WOTUS, thus they are not considered to be under federal jurisdiction. Additionally, there are several areas within the Project ROW that are mapped as NWI wetlands that did not meet the definition of a wetland using the three-factor approach applied during the field investigations per the Regional Supplement and the NYS Manual.

4.7.2.1 NYSDEC Wetlands

Freshwater wetlands that are equal to or greater than 12.4-acres are regulated under the New York State Freshwater Wetlands Program (6 NYCRR Part 663). Wetlands smaller than 12.4 acres may also fall under State regulation if they are considered to be of "unusual local importance." These wetlands are classified as Class I through IV based on the ecological benefits they provide to the public, with Class I being the highest quality wetland and Class IV being the lowest quality wetland. Additionally, the 100-foot upland adjacent area (buffer) around the delineated boundary of any state-regulated wetland is also under State jurisdiction. The Project ROW crosses eight (8) mapped NYSDEC freshwater wetland systems or their regulated 100-foot

upland adjacent area: AK-2 (Class II), AK-3 (Class II), AK-4 (Class II), GA-6 (Class II), GA-22 (Class III), GA-21 (Class III), LP-23 (Class II), and MD-1 (Class I). Also, mapped NYSDEC freshwater wetland LP-22 (Class III) is located just south of the Project ROW in Lockport, however delineated Wetland 014 is likely a continuation of this state wetland, thus the Project ROW will also cross NYSDEC freshwater wetland LP-22. Mapped NYSDEC freshwater wetlands that in whole or in part coincide with field delineated wetlands are identified in Table 4.7-1.

4.7.2.2 National Wetlands Inventory Wetlands & Watercourses

The NWI is a resource provided by the USFWS on the abundance, characteristics, and distribution of wetlands and watercourses in the United States. The NWI is a tool for natural resource managers which uses a combination of aerial imagery, geospatial technology, and data collected using the Cowardin wetland classification system. Based on a review of NWI maps and field assessment, the Project ROW crosses 79 distinct mapped NWI areas, however, not all of these wetland areas were observed within the field and some are riverine NWIs that correspond to watercourses (streams). Table 4.7-1 displays which delineated wetlands coincide with mapped NWI wetlands.

4.7.2.3 Field-Delineated Wetlands

Wetlands were delineated using the methods described in the USACE Manual, NYS Manual, and the Regional Supplement. Wetland boundaries were flagged by affixing consecutively numbered pink flagging tape with the words "WETLAND DELINEATION" to vegetation along the wetland boundary. Wetland flag locations were recorded using a sub-meter accurate GPS receiver.

Based on field investigations, Fisher Associates' environmental and wetland scientists identified a total of 28 wetland complexes, totaling approximately 154.32-acres within the Project ROW. These were comprised of PEM, PSS, PFO, and PUB wetland cover types. Based on observed surface hydrologic connectivity to other WOTUS and Traditional Navigable Waters, 18 of the 28 delineated wetland complexes identified within the Project ROW are likely to be considered jurisdictional by the USACE under the Navigable Waters Protection Rule of 2020, and Section 401 and 404 of the Clean Water Act. These 18 wetlands are considered directly adjacent to or have a surface water connection to other WOTUS. All of the other wetlands were not

observed in the field or through a review of aerials to have a surface hydrology connection to other WOTUS. See Table 4.7-1 for wetlands that are likely USACE jurisdictional and Appendix F.

Additionally, it is anticipated that the NYSDEC will invoke jurisdiction over eight (8) of the field delineated wetlands as they are either part of or associated with mapped NYSDEC Freshwater Wetlands pursuant to Article 24 of the NYS Environmental Conservation Law ("ECL"). These include Wetland 005 (PEM), Wetland 016 (PEM & PSS & PFO), Wetland 017 (PEM) and 018 (PEM), Wetland 020 (PEM), Wetland 023 (PEM & PSS), and Wetland 027 (PEM & PFO) since they are associated with mapped NYSDEC freshwater wetlands, as well as Wetland 022 (PEM & PUB) since it (like Wetland 023 (PEM & PSS) and Wetland 027 (PEM & PFO)) was delineated within a WMA. Descriptions of field-delineated wetland areas are provided in Table 4.7-1 and Appendix F -Wetland and Watercourse Delineations.

Table 4.7-1 Wetlands within the Project ROW								
Project ROW Segment	**Municipality**	**Wetland Field ID**	**Type[1]**	**Presumed Federal Jurisdiction[2]**	**NYSDEC Freshwater Wetland[3]**	**NYSDEC Wildlife Mgmt Area (WMA)[4]**	**NWI Wetland[5]**	**Acres within Project ROW**
1	City of Lockport	001	PEM	Federal	-	-	-	0.40
1	City of Lockport	002	PEM	Federal	-	-	-	0.54
1	Town of Lockport	003	PEM	Federal	-	-	-	0.21
1	Town of Lockport	004	PEM	Federal	-	-	-	0.31
1	Town of Lockport	005	PEM	Federal	LP-23	-	PFO1E, R4SBCx	5.69
2	Town of Lockport	005	PEM	Federal	LP-23	-	-	5.12
2	Town of Lockport	006	PEM	-	-	-	-	0.33
2	Town of Lockport	007	PEM	-	-	-	-	1.83
2	Town of Lockport	008	PEM	-	-	-	-	0.005
2	Town of Lockport	009	PEM / PSS	-	-	-	-	0.54
2	Town of Lockport	010	PEM	-	-	-	-	0.19
2	Town of Lockport	011	PEM	Federal	-	-	R4SBCx	0.71
2	Town of Lockport	012	PEM	Federal	-	-	R4SBCx	3.78
2	Town of Royalton	013	PEM	-	-	-	-	2.73
2	Town of Lockport	014	PEM	Federal	LP-22	-	PFO1Bd, R4SBCx	4.08
2	Town of Royalton	015	PEM	-	-	-	R4SBCx	3.51
2	Town of Royalton	016	PEM / PSS / PFO	Federal	GA-22	-	PFO1B, R4SBCx	8.54
2	Town of Royalton	017	PEM	Federal	-	-	-	3.03
2	Town of Royalton	018	PEM	Federal	GA-21	-	PFO1B, PFO1Bd, R4SBCx, PEM1B, PEM1/SS1B	25.02
2	Town of Royalton	019	PEM	Federal	-	-	-	1.60
2	Town of Royalton	020	PEM	Federal	GA-6	-	PFO1A, PFO1B	5.69

Table 4.7-1 Wetlands within the Project ROW								
Project ROW Segment	**Municipality**	**Wetland Field ID**	**Type[1]**	**Presumed Federal Jurisdiction[2]**	**NYSDEC Freshwater Wetland[3]**	**NYSDEC Wildlife Mgmt Area (WMA)[4]**	**NWI Wetland[5]**	**Acres within Project ROW**
2	Town of Royalton	021	PEM	-	-	-	-	0.31
2	Town of Royalton	024	PEM	Federal	-	-	-	1.94
2	Town of Royalton	025	PEM	Federal	-	-	PEM1E	1.26
2	Town of Royalton	026	PEM	-	-	-	PSS1/EM1E	2.36
3	Town of Royalton	027	PEM / PFO	Federal	MD-1	Tonawanda WMA	PFO1B, PFO1E	8.50
4 Existing	Town of Alabama	023	PEM / PSS	Federal	AK-2, AK-3, AK-4	Tonawanda WMA	PEM1/UBFh, R2UBHx	21.58
4 Relocated	Town of Alabama	023	PEM / PSS	Federal	AK-2, AK-3, AK-4	Tonawanda WMA	PEM1Eh, PUB/EM1Fh, R5UBH, PUBHx	30.89
5	Town of Alabama	023	PEM	Federal	AK-4	Tonawanda WMA	PEM1Fh	9.36
5	Town of Alabama	028	PSS	Federal	-	-	PFO1B	1.41
7	Town of Alabama	022	PEM / PUB	-	-	John White WMA	PUBHh	2.86

Notes:

[1] Field-delineated wetlands were classified according to the Cowardin Classification system: PEM (palustrine emergent), PFO (palustrine forested), PSS (palustrine scrub-shrub).

[2] Federal Jurisdiction provided represents the professional opinion of Fisher Associates and the interpretation of the U.S. Navigable Waters Protection Rule under the Clean Water Act and NYS ECL Article 24: Freshwater Wetlands Program. For approval of these classifications, a request for Jurisdictional Determination should be made to the US Army Corps of Engineers.

[3] Field-delineated wetlands may coincide with NYSDEC wetlands in the Project ROW, fall within the 100-foot upland adjacent area (buffer) of NYSDEC wetlands, or extend outside of the Project ROW and likely connect to NYSDEC wetlands.

[4] Field-delineated wetlands that are at some point within the boundaries of a NYSDEC Wildlife Management Area (WMA).

[5] Field-delineated wetlands may coincide with NWI wetlands in the Project ROW or extend outside of the Project ROW and likely connect to NWI wetlands. NWI classifications within the Project are:

PEM1/SS1B (palustrine, emergent, persistent/scrub-shrub, broad-leaved deciduous, seasonally saturated);
PEM1/UBFh (palustrine, emergent, persistent, unconsolidated bottom, semi permanently flooded, diked/impounded);
PEM1B (palustrine, emergent, persistent, seasonally saturated);

Table 4.7-1 Wetlands within the Project ROW								
Project ROW Segment	**Municipality**	**Wetland Field ID**	**Type[1]**	**Presumed Federal Jurisdiction[2]**	**NYSDEC Freshwater Wetland[3]**	**NYSDEC Wildlife Mgmt Area (WMA)[4]**	**NWI Wetland[5]**	**Acres within Project ROW**

PEM1E (palustrine, emergent, persistent, seasonally flooded/saturated);
PEM1Eh (palustrine, emergent, persistent, seasonally flooded/saturated, diked/impounded);
PEM1Fh (palustrine, emergent, semi-permanently flooded, diked/impounded);
PFO1A (palustrine, forested, broad-leaved deciduous, temporary flooded);
PFO1B (palustrine, forested, broad-leaved deciduous, saturated);
PFO1Bd (palustrine, forested, broad-leaved deciduous, saturated, partially drained/ditched);
PFO1E (palustrine, forested, broad- leaved deciduous, seasonally flooded/saturated);
PSS1/EM1E (Palustrine, scrub-shrub, broad-leaved deciduous/emergent, persistent, seasonally flooded/saturated);
PUB/EM1Fh (palustrine, unconsolidated bottom, emergent, persistent, semi-permanently flooded, diked/impounded);
PUBHh (palustrine, unconsolidated bottom, permanently flooded, diked/impounded);
PUBHx (palustrine, unconsolidated bottom, permanently flooded, excavated);
R2UBHx (riverine, lower perennial, unconsolidated bottom, permanently flooded, excavated);
R4SBCx (riverine, intermittent, streambed, seasonally flooded, excavated); and
R5UBH (riverine, unknown perennial, unconsolidated bottom, permanently flooded).

4.7.3 Existing Surface Water Resources

Surface waterbodies and watercourses (streams) within the Project ROW were investigated using NYSDEC, NWI and USGS GIS publicly available data and confirmed during field surveys. Section 4.7.2.2 above discusses the review of the NWI database.

State and federal lists of Wild and Scenic Natural Rivers, New York's Clean Water Act, and the Nationwide Rivers Inventory were queried to determine whether any streams or rivers along the Project ROW are identified in these databases. According to the National Wild and Scenic Rivers database (NPS, 2016), and NYSDEC Wild, Scenic and Recreation Rivers Permit Program (NYSDEC, 2019), no designated Wild and Scenic Rivers or Nationwide Rivers Inventory rivers are crossed by the Project ROW.

The NYSDEC Waterbody Inventory and Priority Waterbodies List was also searched to identify and classify waterbodies within the Project ROW. One (1) waterbody, Tonawanda Creek (lower and main stem) within the vicinity of the Project is listed on the NYS Final 2016 Section 303(d) List of Impaired Waters in Genesee County as potentially impaired due to pathogens and phosphorus but further verification is needed (NYSDEC, 2016b). This impairment may or may not extend to the Unnamed Tributaries of Tonawanda Creek that cross the Project ROW.

4.7.3.1 NYSDEC Mapped Streams

The NYSDEC regulates disturbances to the beds and banks of Class A, B, C(T), C(TS) streams, and navigable waters. In addition, Class A, B, and C(T) and C(TS) waters are subject to the NYSDEC's water quality standards that prohibit visible turbidity impacts. The NYSDEC water quality classification criteria (NYCRR, 2020) are summarized below:

Class A Fresh Surface Waters – Best usages are a water supply source for drinking, culinary, or food processing purposes; primary and secondary contact recreation; and fishing. Waters shall be suitable for fish propagation and survival.

Class B Fresh Surface Waters – Best usages are primary and secondary contact recreation and fishing. Waters shall be suitable for fish propagation and survival.

Class C Fresh Surface Waters – Best usage is fishing. These waters shall be suitable for fish propagation and survival. The water quality shall be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes.

Class D Fresh Surface Waters – Best usage is suitable for primary and secondary contact recreation, including fishing, but there are limiting factors. Due to such natural conditions as intermittency of flow and stream bed conditions, conditions are not conducive to propagation of game fishery and will not support fish propagation.

Trout Waters – Some streams may be suitable and/or designated as trout waters. These streams are designated with ("T") after the classification. If trout spawning is suitable in a stream, it will be designated with ("TS").

Based on a review of the publicly available NYSDEC Environmental Resource Mapper, the Project ROW crosses 10 NYSDEC mapped streams. These are the NYS Barge Canal (Class C), an unnamed minor tributary to Tonawanda Creek (Class B), an unnamed tributary to Tonawanda Creek (Class C), three (3) unnamed tributaries to Mud Creek (Class C), Mud Creek (Class C), and three (3) unnamed tributaries to Oak Orchard Creek (Class C). However, no tributaries to Oak Orchard Creek were observed in the field.

4.7.3.2 Field-Delineated Streams

Stream resource areas along the Project ROW were field delineated between August 6 and October 2, 2019, June 16, 2020 and November 12 and 13, 2020 by Fisher Associates' environmental and wetland scientists. The Project ROW crosses 10 stream channels, totaling approximately 3,575 linear feet. Delineated Stream 001, observed on the western end of the Project in Segment 1, is the NYS Barge Canal (Erie Canal). All other streams are either Unnamed Tributaries to Tonawanda Creek or to Mud Creek. Based on observed surface hydrological connectivity and mapping to other WOTUS and Traditional Navigable Waters, all streams identified within the Project ROW are likely to be considered jurisdictional by the USACE under the Navigable Waters Protection Rule of 2020, and Section 404 of the Clean Water Act. There are no significant waterbodies (i.e., large ponds, lakes, or reservoirs) located within the Project ROW.

Streams located along the Project ROW and their associated NYSDEC water quality classifications are identified in Table 4.7-2. Based on the field observations, the Project traverses one (1) Class B stream (Unnamed Tributary to Tonawanda Creek), five (5) Class C streams (NYS

Barge Canal and Unnamed Tributaries to Mud Creek) and four (4) Class D streams (Unnamed Tributaries to Mud Creek). The one (1) Class B stream, Stream 002 (Unnamed Tributary to Tonawanda Creek), is protected under Article 15 of the ECL. Additionally, Stream 001 is a section of the NYS Barge Canal (Erie Canal) system and is listed as a Section 10 Navigable Water and is maintained by the NYS Canal Corporation.

Construction of the Project may require the installation of new culvert structures in some delineated streams within the Project ROW. It is anticipated that some damaged and/or deteriorated existing culverts may require replacement within the Project ROW. The locations and details for all proposed stream crossings will be shown in the EM&CP. See Exhibit 8 – Other Pending Filings regarding the permits required for the certain water resource crossings by the Project.

Table 4.7-2 Waterbodies Delineated within the Project ROW								
Project ROW Segment	**Municipality**	**Stream ID**	**Stream Name**	**Tributary of**	**Flow Regime**	**Presumed Federal Jurisdiction[1]**	**NYSDEC Classification Designation[2, 4, 5, 6]**	**NYSDEC Standard Designation[3, 4, 5]**
1	City of Lockport	001*	NYS Barge Canal (Erie Canal - Portion 1)	Lake Erie	Perennial	Federal	C	ND
2	Town of Lockport	002	Unnamed Tributary to Tonawanda Creek	NYS Barge Canal (Erie Canal)	Perennial	Federal	B	ND
2	Town of Lockport	003	Unnamed Tributary to Mud Creek	Tonawanda Creek	Intermittent	Federal	D	ND
2	Town of Lockport	004	Unnamed Tributary to Mud Creek	Tonawanda Creek	Intermittent	Federal	D	ND
2	Town of Lockport	005	Unnamed Tributary to Mud Creek	Tonawanda Creek	Intermittent	Federal	D	ND
2	Town of Lockport	006	Unnamed Tributary to Mud Creek	Tonawanda Creek	Intermittent	Federal	D	ND
2	Town of Royalton	007	Unnamed Tributary to Mud Creek	Tonawanda Creek	Intermittent	Federal	C	ND
2	Town of Royalton	008	Unnamed Tributary to Mud Creek	Tonawanda Creek	Intermittent	Federal	C	ND
4 Existing	Town of Alabama	009**	Unnamed Tributary to Mud Creek	Tonawanda Creek	Perennial	Federal	C	ND
3	Town of Royalton	010	Mud Creek and Tributaries	Tonawanda Creek	Perennial	Federal	C	ND

Notes:

[1] In accordance with the Navigable Waters Protection Rule, streams/tributaries that are perennial and/or intermittent and contribute surface flow to WOTUS are federally jurisdictional by the USEPA and USACE (see Section 3.0 for more information).

Table 4.7-2 Waterbodies Delineated within the Project ROW								
Project ROW Segment	**Municipality**	**Stream ID**	**Stream Name**	**Tributary of**	**Flow Regime**	**Presumed Federal Jurisdiction[1]**	**NYSDEC Classification Designation[2, 4, 5, 6]**	**NYSDEC Standard Designation[3, 4, 5]**

[2] NYSDEC Classification Designations:

AA or A: waters used as a source of drinking water

B: waters with best usage for swimming and other contact recreation, but not for drinking water

C: waters supporting fisheries and suitable for non-contact activities

D: other waters, the lowest classification standard

[3] NYSDEC Standard Designations:

ND: no assigned designation

T: may support a trout population

TS: may support trout spawning

[4] Waters with classifications of A, B, and C may, but will not always have an associated Standard Designation relative to trout use.

[5] Streams with a classification of AA, A, B, or with a classification of C with a standard of "T" or "TS" are referred to a "Protected Streams" and are subject to the stream protection provisions of the New York State Protection of Waters regulations.

[6] Streams that do not appear on the NYSDEC mapping are assigned to Class D, with the exception of any "continuous flowing natural stream" which is assigned the same classification as the water to which it is a tributary.

[*] Stream 001 is the New York State Barge Canal also known as the Erie Canal. The New York State Canal Corporation is governing body over the canal.

[**] Stream 009 is located within the Tonawanda Wildlife Management Area.

4.7.4 Other Water Resources

4.7.4.1 Sole Source Aquifer

The Federal Safe Drinking Water Act of 1974 established a program to designate sole source aquifers. A sole source aquifer ("SSA"), as defined by the U.S. Environmental Protection Agency ("USEPA"), is an aquifer that is the sole or principal drinking water source, which if contaminated would create a significant hazard to public health (USEPA, 2020). The Cattaraugus Creek Basin SSA, located more than 30 miles south of the Project ROW is the closest sole source aquifer to the Project. Therefore, the Project is not anticipated to have any impacts on sole source aquifers.

4.7.4.2 Ground Water

Depth to water tables or the presence of ground water in soils is published in Soil Surveys for Niagara and Genesee Counties (see Section 4.8 and Table 4.8-1). The depth to the water table is variable for the numerous soil classes present along the Project ROW. Where feasible, structures will be located to avoid areas with high ground water. If a structure must be located in an area of high ground water, de-watering methods will be incorporated to minimize impacts and disturbance to the site. Dewatering procedures will be specified in the EM&CP. There are no impacts to ground water resources anticipated as a result of constructing the Project.

4.7.4.3 Stormwater

The Project ROW consists of shrub and herbaceous vegetation cover conducive to soil stabilization, stormwater infiltration, and the reduction of erosion potential. During construction, the Project ROW will be mowed and cleared of trees and brush, but an intact vegetative cover will still exist over the majority of the Project ROW, thereby minimizing the potential for significant stormwater runoff.

Because Project clearing and construction will result in the disturbance of greater than one (1) acre of land, coverage under the NYSDEC's SPDES General Permit for Stormwater Discharges from Construction Activity, Permit GP-0-20-001 and the development of a SWPPP will be required. See Exhibit 8 – Other Pending Filings for more information.

The EM&CP will address storm water management, erosion and sediment control measures for all areas where ground disturbance results in exposed soils (such as structure sites and access roads), and spill prevention and control measures; a SWPPP will be included as part

of the EM&CP submittal. Erosion and sediment control procedures to be followed during construction will adhere to the NYSDEC's "*New York State Standards and Specifications for Erosion and Sediment Control*", also known as the "Blue Book."

The construction and operation of the Project will not result in a significant increase in impervious area and will not appreciably change topography in the Project ROW. The Project will not result in a discernable increase in stormwater runoff volumes. Similarly, the potential for the Project to increase flooding is negligible. In addition, there will be no stormwater discharges during or after construction that will affect existing recreational activities or fish and wildlife resources in the Project area.

Inadvertent discharges of stormwater and sediment to wetlands and streams from the Project work areas will be controlled with appropriate erosion control practices prescribed in the EM&CP and implemented during construction thereby assuring the protection of the existing water quality of streams and wetlands.

To prevent liquid fuels (gasoline and diesel) and hydraulic fluid from construction equipment from entering waters of the State and WOTUS, the SWPPP and EM&CP will use and prescribe the following guidelines:

- Spill control equipment will be present during all refueling activities.
- Equipment will be inspected daily for leaks, and immediate repairs will be completed, if any leaks are found.
- Construction crews will be trained in procedures for handling fuel, hydraulic fluid, and oil.

Other general guidelines that will be incorporated into the SWPPP and EM&CP to reduce potential pollution from stormwater runoff during construction activities include, but are not limited to:

- Using dust suppression practices;
- Properly storing and handling materials on-site;
- Properly disposing of sanitary waste;
- Properly disposing of solid waste;
- Properly handling and manifesting any hazardous waste generated on-site (if any); and
- Implementing spill prevention and control measures.

Once construction is complete, National Grid will continue to maintain vegetation in accordance with its TROWMP thereby assuring a continued vegetative cover on the Project ROW. Thus, there are no stormwater-related impacts anticipated as a result of constructing the Project.

4.7.5 Project Effects on Wetlands and Water Resources and Mitigation

Permanent impacts to wetlands associated with the placement of new structures will be minimized by locating structures outside of wetlands, to the extent practicable, where the alternative of spanning the wetland exists.

Existing and Rebuilt Line 112 structures located within a field-delineated wetland are identified in Table 4.7-3. Table 4.7-4 provides information specific to NYSDEC mapped wetlands traversed by the Project and identify the Existing and Rebuilt Line 112 structures within such wetlands and regulated 100-foot upland adjacent areas. The lengths of existing centerline and proposed centerline that span a field delineated wetland and the estimated clearing that will be required in forested wetlands are identified in Table 4.7-5, and Table 4.7-6. Table 4.7-6 identifies the length of existing and proposed centerline that crosses each of the NYSDEC mapped wetlands and associated regulated 100-foot upland adjacent areas and the estimated clearing that will be required in each regulated forested wetland and adjacent forested area for the maintained Project ROW.

Proposed tree and brush clearing in the Project ROW will result in the clearing of forested wetland. Based on the present level of design, it is estimated that t approximately 2.6 acres of delineated forested wetlands to be cleared as a result of the Project (See Table 4.7-5). Of the approximate 2.6 acres, it is estimated that there will be approximately 2.13 acres of forested wetland cleared in a State regulated wetland (AK-2, AK-3, AK-4 and MD-1). The exact acreages of clearing, as well as the compensatory wetland mitigation plan, will be provided in the EM&CP.

4.7.5.1 Impact Avoidance and Minimization

Rebuilt Line 112 will result in approximately two percent fewer structures in wetlands than the Existing Line 112. Existing wood pole structures that are scheduled for removal will be removed from wetland areas with the exception that certain structures may be cut at ground level and left in place if it is determined that pulling the pole would cause significant disturbance to the wetland.

Significant environmental impacts to wetlands and water resources will be avoided by using and/or improving existing access roads or paths to the maximum extent possible and by properly locating any new access roads that may be required away from such resources.

Mitigation measures such as the use of tracked equipment, low-ground-pressure equipment, and mats will be prescribed on a site-by-site basis in environmentally sensitive areas including streams and wetlands. In addition, erosion and sediment control measures designed to maintain and protect soil and water resources both during and after construction will be prescribed for all areas where soil disturbance occurs.

Some new culverts may need to be installed for stream crossings throughout the Project ROW, however these are not NYSDEC-regulated streams, these streams are classified as Class C. The only NYSDEC-regulated stream within the Project ROW is the Erie Canal and no work will be done within the banks or channel of this waterbody. Where a long stretch of proposed permanent gravel road crosses a federal wetland, National Grid may propose to construct a permanent gravel road across the area and conduct wetland mitigation to compensate for any loss of wetland function and benefit. This will avoid having a gap in the permanent road system when construction is completed and will facilitate access to the facility for future maintenance, inspection and emergency response.

The EM&CP will specify the work procedures in wetlands and at stream crossings and appropriate restoration and mitigation measures that will be prescribed on a site-by-site basis.

Table 4.7-3 Wetland Summary Table – Proposed 112 Structures in Wetlands							
Project ROW Segment	**Wetland Field ID**	**Type[1]**	**Presumed Federal Jurisdiction[2]**	**NYSDEC Freshwater Wetland[3]**	**NYSDEC Wildlife Mgmt Area (WMA)[4]**	**Existing 112 Structures in Wetland**	**Proposed 112 Structures in Wetland**
1	001	PEM	Federal	-	-	-	-
1	002	PEM	Federal	-	-	1, 2	-
1	003	PEM	Federal	-	-	-	-
1	004	PEM	Federal	-	-	-	-
1	005	PEM	Federal	LP-23	-	5, 6, 7, 8	4, 5, 6
2	005	PEM	-	LP-23	-	-	7, 8
2	006	PEM	-	-	-	-	-
2	007	PEM	-	-	-	12	-
2	008	PEM	-	-	-	-	-
2	009	PEM / PSS	-	-	-	50	-
2	010	PEM	-	-	-	-	-
2	011	PEM	Federal	-	-	45	-
2	012	PEM	Federal	-	-	51	-
2	013	PEM	-	-	-	56	-
2	014	PEM	Federal	LP-22	-	54, 55	54, 555
2	015	PEM	-	-	-	58	-
2	016	PEM / PSS / PFO	Federal	GA-22	-	60, 61, 62, 63, 64	60, 61, 62, 63, 64
2	017	PEM	Federal	-	-	65, 66	-
2	018	PEM	Federal	GA-21	-	67, 68, 69, 70, 71, 72, 73, 74, 75, 76	67, 68, 69, 70, 71, 72, 73, 74, 75, 76
2	019	PEM	Federal	-	-	-	-
2	020	PEM	Federal	GA-6	-	87, 88, 89	87, 88, 89
2	021	PEM	-	-	-	-	-
2	024	PEM	Federal	-	-	103	-
2	025	PEM	Federal	-	-	106	-
2	026	PEM	-	-	-	112	-
3	027	PEM / PFO	Federal	MD-1	Tonawanda WMA	132, 133, 134	132, 133, 134, 135, 136

Table 4.7-3 Wetland Summary Table – Proposed 112 Structures in Wetlands							
Project ROW Segment	**Wetland Field ID**	**Type[1]**	**Presumed Federal Jurisdiction[2]**	**NYSDEC Freshwater Wetland[3]**	**NYSDEC Wildlife Mgmt Area (WMA)[4]**	**Existing 112 Structures in Wetland**	**Proposed 112 Structures in Wetland**
4 Existing	023	PEM / PSS	Federal	AK-2, AK-3, AK-4	Tonawanda WMA	144, 145, 146, 146, 147, 148, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159	-
4 Relocated	023	PEM / PSS	Federal	AK-2, AK-3, AK-4	Tonawanda WMA	-	145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 159-1
5	023	PEM	Federal	AK-4	Tonawanda WMA	160, 161, 162, 163, 164	160, 161, 162, 163, 164
5	028	PSS	Federal	-	-	173	173
7	022	PEM / PUB	-	-	John White WMA	196	196

Notes:

1 Field-delineated wetlands were classified according to the Cowardin Classification system: PEM (palustrine emergent), PFO (palustrine forested), PSS (palustrine scrub-shrub).

2 Federal Jurisdiction provided represents the professional opinion of Fisher Associates and the interpretation of the U.S. Navigable Waters Protection Rule under the Clean Water Act and NYS ECL Article 24: Freshwater Wetlands Program. For approval of these classifications, a request for Jurisdictional Determination should be made to the US Army Corps of Engineers.

3 Field-delineated wetlands may coincide with NYSDEC wetlands in the Project ROW, fall within the 100-foot upland adjacent area (buffer) of NYSDEC wetlands, or extend outside of the Project ROW and likely connect to NYSDEC wetlands.

4 Field-delineated wetlands that are at some point within the boundaries of a NYSDEC Wildlife Management Area (WMA).

Table 4.7-4 NYSDEC Wetland Summary Table – 112 Structures in NYSDEC Wetlands and NYSDEC Wetland 100-foot Adjacent Areas

Project ROW Segment	Wetland Field ID	Type[1]	NYSDEC Freshwater Wetland	NYSDEC Wildlife Mgmt Area (TWMA)	Existing 112 Structures in NYSDEC Wetland	Existing 112 Structures in NYSDEC 100-foot Adjacent Area[3]	Proposed 112 Structures in NYSDEC Wetland[2]	Proposed 112 Structures in NYSDEC 100-foot Adjacent Area[3]
1	005	PEM	LP-23	-	4, 5, 6	-	4, 5, 6	-
2	005	PEM	LP-23	-	7, 8	-	7, 8	-
2	014	PEM	LP-22	-	54, 55	-	54, 55	-
2	016	PEM / PSS / PFO	GA-22	-	60, 61, 62, 63, 64	-	60, 61, 62, 63, 64	-
2	018	PEM	GA-21	-	67, 68, 69, 70, 71, 72, 73, 74, 75, 76	-	67, 68, 69, 70, 71, 72, 73, 74, 75, 76	-
2	020	PEM	GA-6	-	87, 88, 89	90	87, 88, 89	90
3	027	PEM / PFO	MD-1	Tonawanda WMA	132, 133, 134, 135, 136	-	132, 133, 134, 135, 136	-
4 Existing	023	PEM / PSS	AK-2, AK-3, AK-4	Tonawanda WMA	143, 145, 146, 147, 148, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159	149	-	-
4 Relocated	023	PEM / PSS	AK-2, AK-3, AK-4	Tonawanda WMA	-	-	145, 146, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 159-1	148
5	023	PEM	AK-4	Tonawanda WMA	160, 161, 162, 163, 164	165	160, 161, 162, 163, 164	-
7	022	PEM / PUB	-	John White WMA	196	-	196	-

Notes:

[1] Field-delineated wetlands were classified according to the Cowardin Classification system: PEM (palustrine emergent), PFO (palustrine forested), PSS (palustrine scrub-shrub).

[2] Field-delineated wetlands may coincide with NYSDEC wetlands in the Project ROW, fall within the 100-foot upland adjacent area (buffer) of NYSDEC wetlands, or extend outside of the Project ROW and likely connect to NYSDEC wetlands.

[3] Field-delineated wetlands that are at some point within the boundaries of a NYSDEC Wildlife Management Area (WMA).

Table 4.7-5 Wetland Summary Table – 112 Centerlines Crossing Wetlands and Estimated Clearing Needed

Project ROW Segment	Wetland Field ID	Type[1]	Presumed Federal Jurisdiction[2]	NYSDEC Freshwater Wetland[3]	NYSDEC Wildlife Management Area (WMA)[4]	Existing 112 Centerline Crossing Wetland (feet)	Proposed 112 Centerline Crossing Wetland (feet)	Estimated Clearing Needed (Acres)
1	001	PEM	Federal	-	-	83	83	-
1	002	PEM	Federal	-	-	157	-	-
1	003	PEM	Federal	-	-	-	-	-
1	004	PEM	Federal	-	-	77	78	-
1	005	PEM	Federal	LP-23	-	1,112	1,122	-
2	005	PEM	-	LP-23	-	1,118	1,108	-
2	006	PEM	-	-	-	80	81	-
2	007	PEM	-	-	-	442	442	-
2	008	PEM	-	-	-	9	8	-
2	009	PEM / PSS	-	-	-	120	117	-
2	010	PEM	-	-	-	-	-	-
2	011	PEM	Federal	-	-	210	208	-
2	012	PEM	Federal	-	-	772	774	-
2	013	PEM	-	-	-	595	595	-
2	014	PEM	Federal	LP-22	-	992	992	-
2	015	PEM	-	-	-	724	723	-
2	016	PEM / PSS / PFO	Federal	GA-22	-	2,407	2,407	-
2	017	PEM	Federal	-	-	660	660	-
2	018	PEM	Federal	GA-21	-	5,498	5,493	-
2	019	PEM	Federal	-	-	-	-	-
2	020	PEM	Federal	GA-6	-	1,512	1,510	-
2	021	PEM	-	-	-	31	29	-
2	024	PEM	Federal	-	-	441	440	-
2	025	PEM	Federal	-	-	296	297	-
2	026	PEM	-		-	534	533	-
3	027	PEM / PFO	Federal	MD-1	Tonawanda WMA	2,343	2,354	1.06
4 Existing	023	PEM / PSS	Federal	AK-2, AK-3, AK-4	Tonawanda WMA	8,264	-	-

Table 4.7-5 Wetland Summary Table – 112 Centerlines Crossing Wetlands and Estimated Clearing Needed								
Project ROW Segment	**Wetland Field ID**	**Type[1]**	**Presumed Federal Jurisdiction[2]**	**NYSDEC Freshwater Wetland[3]**	**NYSDEC Wildlife Management Area (WMA)[4]**	**Existing 112 Centerline Crossing Wetland (feet)**	**Proposed 112 Centerline Crossing Wetland (feet)**	**Estimated Clearing Needed (Acres)**
4 Relocated	023	PEM / PSS	Federal	AK-2, AK-3, AK-4	Tonawanda WMA	-	7,149	1.06
5	023	PEM	Federal	AK-4	Tonawanda WMA	3,128	2,742	0.01
5	028	PSS	Federal	-	-	394	394	0.44
7	022	PEM / PUB	-	-	John White WMA	848	850	-

Notes:

1 Field-delineated wetlands were classified according to the Cowardin Classification system: PEM (palustrine emergent), PFO (palustrine forested), PSS (palustrine scrub-shrub).

2 Federal Jurisdiction provided represents the professional opinion of Fisher Associates and the interpretation of the U.S. Navigable Waters Protection Rule under the Clean Water Act and NYS ECL Article 24: Freshwater Wetlands Program. For approval of these classifications, a request for Jurisdictional Determination should be made to the US Army Corps of Engineers.

3 Field-delineated wetlands may coincide with NYSDEC wetlands in the Project ROW, fall within the 100-foot upland adjacent area (buffer) of NYSDEC wetlands, or extend outside of the Project ROW and likely connect to NYSDEC wetlands.

4 Field-delineated wetlands that are at some point within the boundaries of a NYSDEC Wildlife Management Area (WMA).

Table 4.7-6 NYSEDC Wetland Summary Table – 112 Centerlines Crossing NYSDEC Wetlands and 100-foot Adjacent Areas and Estimated Clearing Needed

Project ROW Segment	Wetland Field ID	Type[1]	NYSDEC Freshwater Wetland[2]	NYSDEC Wildlife Management Area (WMA)[3]	Existing 112 Centerline Crossing Wetland (feet)	Proposed 112 Centerline Crossing Wetland (feet)	Estimated Clearing Needed (Acres)
1	005	PEM	LP-23	-	1,321	1,332	-
2	005	PEM	LP-23	-	1,218	1,208	-
2	014	PEM	LP-22	-	1,286	1,285	-
2	016	PEM / PSS / PFO	GA-22	-	2,644	2,644	
2	018	PEM	GA-21	-	5,711	5,710	-
2	020	PEM	GA-6	-	1,905	1,904	-
3	027	PEM / PFO	MD-1	Tonawanda WMA	2,840	2,840	1.06
4 Existing	023	PEM / PSS	AK-2, AK-3, AK-4	Tonawanda WMA	8,617	-	-
4 Relocated	023	PEM / PSS	AK-2, AK-3, AK-4	Tonawanda WMA	-	8,901	1.06
5	023	PEM	AK-4	Tonawanda WMA	3,004	3,004	0.01
7	022	PEM / PUB	-	John White WMA	848	850	-

Notes:

[1] Field-delineated wetlands were classified according to the Cowardin Classification system: PEM (palustrine emergent), PFO (palustrine forested), PSS (palustrine scrub-shrub).

[2] Field-delineated wetlands may coincide with NYSDEC wetlands in the Project ROW, fall within the 100-foot upland adjacent area (buffer) of NYSDEC wetlands, or extend outside of the Project ROW and likely connect to NYSDEC wetlands.

[3] Field-delineated wetlands that are at some point within the boundaries of a NYSDEC Wildlife Management Area (WMA).

4.8 TOPOGRAPHY AND SOILS

In accordance with PSL §122(1)(c) and 16 NYCRR §86.5(b)(1), (b)(2)(iii) and (4), this section describes the existing topography and soils along the Project ROW and the temporary and permanent changes or adverse effects of the proposed construction and operation of the Project. Efforts to avoid adverse effects and proposed mitigation measures are also presented.

4.8.1 Existing Conditions

4.8.1.1 Regional Geology

Regional topography and soils are fundamentally influenced by the regional geology. The Project ROW is located within the Erie-Ontario Lowlands.

The Erie-Ontario Lowlands consist of glacial till deposits, and some soils are mantled with a thin layer of clayey or silty lake-laid sediments. The till deposits are derived from shale, siltstone, sandstone, or limestone, and occur as nearly level to sloping ground moraines. The Lowlands are underlain by bedrock of the Upper Silurian and the Middle and Upper Devonian periods.

4.8.1.2 Topography

According to the USGS topographic maps, the Project ROW traverses primarily flat terrain, as the Erie-Ontario Plain has little significant relief, aside from areas within the immediate vicinity of the major drainage ways. The typical topography is that of an abandoned lakebed. Furthermore, improvement of natural drainage is the principal soil management issue on the Erie-Ontario Lowland Plain. The topography changes to the south of the Project ROW as the steeper valleys and flat-topped hills of the Allegheny Plateau become more prevalent. The Project ROW ranges from approximately 590 feet AMSL near Structure 3 to approximately 770 feet AMSL near Structure 211). The Project ROW crosses 10 streams, which are generally oriented north/south. The elevations on both sides of the crossings are approximately the same. Thus, the ROW avoids high points, ridge lines and steep slopes.

4.8.1.3 Soils

Several types of soils derived mainly from glacial till compose the Project ROW. Table 4.8-1 lists the soil series and characteristics traversed by the Project ROW, by Segment, as publicly available through the United State Department of Agriculture ("USDA") Natural Resources Conservation Survey (NRCS) Soil Web Survey for Niagara and Genesee Counties.

The most prevalent soil type in Niagara County is Odessa silt loam, 0 to 3 percent slopes (OdA). The most prevalent soil type in Genesee County is Ontario loam, 3 to 8 percent slopes (OnB). Soil types are directly from glacial till deposits and are predominantly silts. The depth to bedrock in these soils ranges from 40 to 60 inches, to greater than 80 inches (see Table 4.8-1). The soils along the Project ROW range from poorly drained to well drained. The highlighted rows within Table 4.8-1 represent soils that may be considered vulnerable based on the USDA NRCS criteria. For the purposes of this Project, vulnerable soils are those that are in potential agricultural areas (defined as soils with Farmland Classes of: "All areas are prime farmland" or "Farmland of statewide importance"), and soils that typically have slopes of 8% or greater, are poorly drained, and/or have less than 36" depth to bedrock. Based on this criterion, the vulnerable soils in the Project ROW are:

- Canandaigua silt loam (Ca) and (CaA);
- Lakemont silt clay loam (La) and (Lc);
- Madalin silt loam (Ma) and (Md);
- Massena fine sandy loam (Mf);
- Ontario loam (OnC);
- Romulus silt loam (RsA); and
- Sun silt loam (Sw).

4.8.1.4 Mines and Gravel Operations

The Project ROW does not cross any known commercial mines or gravel pits. The closest permitted mining operation is located approximately 0.25 miles northwest of the Lockport Substation (NYSDEC, 2014). The Project will have no effect on any mining or gravel operations in the area.

4.8.2 Project Effects on Topography and Soils and Mitigation

There are no unique geologic or topographic features that will be permanently affected by the construction or operation of the Project. Grading for access roads, grading and excavation for structure installation, stock piling of soils and clearing of vegetation are examples of activities that will be designed with sensitivity to any slopes and soil type.

Grading operations for access roads and at structure work areas along the Project ROW will vary with soils type, land use, and topography, and will be designed to protect soils from erosion, compaction, and soil mixing. Construction activities required for structure installation will be confined to access roads and designated work areas that are laid out on a structure-by-structure basis, taking soil type and slope into consideration. Temporarily stockpiled soils will

be protected to prevent erosion and keep stormwater runoff from reaching adjacent areas. Vegetative clearing and slash disposal techniques will be prescribed on a site-by-site basis to minimize disturbance to areas of sensitive or unstable soils.

General mitigation measures in areas with vulnerable soils would include the use of tracked equipment, low-ground-pressure equipment, and mats, which will be prescribed in the EM&CP. The EM&CP will also prescribe measures to prevent or minimize impacts associated with topography and soils.

There are no topography or soil related impacts anticipated as a result of this Project.

Table 4.8-1 Soil Types Traversed by the Project ROW								
Segment[2]	**Soil Series**	**Mapping Unit**	**Percent Coverage Within ROW[1]**	**Parent Material**	**Depth to Bedrock (inches)**	**Drainage Class**	**Farmland Class**	**Hydric Soil**
2,3, 4 Existing, 4 Relocated	Appleton silt loam	ApA: 0 to 3% slopes	6.66	Calcareous loamy lodgment till derived from limestone, sandstone, and shale	More than 80”	Somewhat poorly drained	Prime farmland if drained	Partially Hydric
2, 4 Existing, 4 Relocated, 5	Arkport very fine sandy loam	ArB: 0 to 6% slopes	1.35	Glaciofluvial or deltaic deposits with a high content of fine and very fine sand	More than 80”	Well drained	Prime farmland if drained	Partially Hydric
2	Arkport fine sandy loam	AsA: 0 to 2% slopes	0.21	Glaciofluvial or deltaic deposits with a high content of fine and very fine sand	More than 80”	Well drained	Farmland of statewide importance	No
1,2	**Canandaigua silt loam**	**Ca: n/a**	**2.75**	**Silty and clayey glaciolacustrine deposits**	**More than 80”**	**Very poorly drained**	**All areas are prime farmland**	**Partially Hydric**
4 Existing, 4 Relocated, 5, 7	**Canandaigua silt loam**	**CaA: 0 to 2% slopes**	**2.18**	**Silty and clayey glaciolacustrine deposits**	**More than 80”**	**Poorly drained**	**Farmland of statewide importance**	**Yes**
1	Canandaigua silty clay loam	Cb: n/a	1.05	Silty and clayey glaciolacustrine deposits	More than 80”	Very poorly drained	Not prime farmland	Yes
4 Existing, 4 Relocated, 5	Canandaigua mucky silt loam	CbA: 0 to 2% slopes	1.29	Silty and clayey glaciolacustrine deposits	More than 80”	Very poorly drained	Not prime farmland	Yes
2, 3	Cayuga and Cazenovia silt loams	CcB: 2 to 6% slopes	0.89	Clayey glaciolacustrine deposits over loamy till derived from limestone, dolomite, sandstone, or shale	More than 80”	Moderately well drained	All areas are prime farmland	No
7	Cazenovia silt loam	CeB: 3 to 8% slopes	1.25	Loamy till that contains limestone with an admixture of reddish lake-laid clays or reddish clay shale	More than 80”	Moderately well drained	All areas are prime farmland	No
2	Churchville silt loam	ClA: 0 to 2% slopes	2.32	Clayey glaciolacustrine deposits over loamy till	More than 80”	Somewhat poorly drained	Prime farmland if drained	Partially Hydric

Table 4.8-1 Soil Types Traversed by the Project ROW								
Segment[2]	**Soil Series**	**Mapping Unit**	**Percent Coverage Within ROW[1]**	**Parent Material**	**Depth to Bedrock**	**Drainage**	**Farmland Class**	**Hydric**
					(inches)	**Class**		**Soil**
5, 7	Collamer silt loam	ClB: 2 to 6% slopes	1.24	Silty and clayey glaciolacustrine deposits	More than 80”	Moderately well drained	All areas are prime farmland	Partially Hydric
2	Collamer silt loam	CnB: 2 to 6% slopes	1.73	Silty and clayey glaciolacustrine deposits	More than 80”	Moderately well drained	All areas are prime farmland	Partially Hydric
1	Cut and fill land	Cu: n/a	0.79	N/A	More than 80”	Moderately well drained	Not prime farmland	No
2	Dunkirk silt loam	DuB: 2 to 6% slopes	0.22	Silty and clayey glaciolacustrine deposits	More than 80”	Well drained	All areas are prime farmland	No
4 Existing, 4 Relocated	Elnora loamy fine sand	ElB: 2 to 6% slopes	0.41	Sandy glaciofluvial, eolian, or deltaic deposits	More than 80”	Moderately well drained	All areas are prime farmland	No
4 Relocated	Fonda mucky silt loam	Fo: n/a	0.65	Clayey glaciolacustrine deposits	More than 80”	Very poorly drained	Not prime farmland	Yes
4 Existing, 4 Relocated, 5	Galen very fine sandy loam	GnB: 2 to 6% slopes	0.77	Deltaic deposits with a high content of fine and very fine sand	More than 80”	Moderately well drained	All areas are prime farmland	No
2, 3	Hilton silt loam	HlA: 0 to 3% slopes	2.34	Calcareous loamy lodgment till derived from limestone, sandstone, and shale	More than 80”	Moderately well drained	All areas are prime farmland	No
2, 4 Existing, 7	Hilton silt loam	HlB: 3 to 8% slopes	3.93	Calcareous loamy lodgment till derived from limestone, sandstone, and shale	More than 80”	Moderately well drained	All areas are prime farmland	No
1	Hilton and Cayuga soils	HmA: 0 to 3% slopes	0.66	Clayey glaciolacustrine deposits over loamy till derived from limestone, dolomite, sandstone, or shale	40 - 60"	Moderately well drained	All areas are prime farmland	No
2	Howard gravelly loam	HoB: 3 to 8% slopes	0.52	Gravelly loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits, containing significant amounts of limestone	More than 80”	Somewhat excessively drained	All areas are prime farmland	No

Table 4.8-1 Soil Types Traversed by the Project ROW								
Segment[2]	**Soil Series**	**Mapping Unit**	**Percent Coverage Within ROW[1]**	**Parent Material**	**Depth to Bedrock (inches)**	**Drainage Class**	**Farmland Class**	**Hydric Soil**
2	Hudson silt loam	HsB: 2 to 6% slopes	0.78	Clayey and silty glaciolacustrine deposits	More than 80”	Moderately well drained	All areas are prime farmland	No
5	**Lakemont silty clay loam**	**La: 0 to 3% slopes**	**0.63**	**Red clayey glaciolacustrine deposits derived from calcareous shale**	**More than 80”**	**Poorly drained**	**Farmland of statewide importance**	**Yes**
2, 3	**Lakemont silty clay loam**	**Lc: 0 to 3% slopes**	**3.7**	**Red clayey glaciolacustrine deposits derived from calcareous shale**	**More than 80”**	**Poorly drained**	**Farmland of statewide importance**	**Yes**
4 Existing, 4 Relocated	Lamson very fine sandy loam	Ld: n/a	1.99	Deltaic or glaciolacustrine deposits with a high content of fine and very fine sand	More than 80”	Poorly drained	Not prime farmland	Yes
2	Lamson fine sandy loam	Lg: n/a	0.26	Deltaic or glaciolacustrine deposits with a high content of fine and very fine sand	More than 80”	Very poorly drained	Not prime farmland	Yes
7	Lima silt loam	LmB: 3 to 8% slopes	3.04	Calcareous loamy lodgment till derived from limestone, sandstone, and shale	More than 80”	Moderately well drained	All areas are prime farmland	No
2, 3, 4 Existing, 4 Relocated, 5	**Madalin silt loam**	**Ma: 0 to 3% slopes**	**4.69**	**Brown clayey glaciolacustrine deposits derived from calcareous shale**	**More than 80”**	**Poorly drained**	**Farmland of statewide importance**	**Yes**
2	**Madalin silt loam**	**Md: n/a**	**0.9**	**Clayey and silty glaciolacustrine deposits**	**More than 80”**	**Very poorly drained**	**Farmland of statewide importance**	**Yes**
2	**Massena fine sandy loam**	**Mf: n/a**	**0.61**	**Loamy till dominated by siliceous rocks with varying proportions of limestone**	**More than 80”**	**Poorly drained**	**Prime farmland if drained**	**No**
5, 7	Minoa very fine sandy loam	MnA: 0 to 2% slopes	0.43	Deltaic or glaciolacustrine deposits with a high content of fine and very fine sand	More than 80”	Somewhat poorly drained	Prime farmland if drained	No

Table 4.8-1 Soil Types Traversed by the Project ROW								
Segment[2]	**Soil Series**	**Mapping Unit**	**Percent Coverage Within ROW[1]**	**Parent Material**	**Depth to Bedrock (inches)**	**Drainage Class**	**Farmland Class**	**Hydric Soil**
2	Niagara silt loam	NaA: 0 to 2% slopes	2.85	Silty and clayey glaciolacustrine deposits	More than 80”	Somewhat poorly drained	Prime farmland if drained	No
5, 7	Niagara silt loam	NgA: 0 to 2% slopes	1.69	Silty and clayey glaciolacustrine deposits	More than 80”	Somewhat poorly drained	Prime farmland if drained	No
2, 3, 7	Odessa silt loam	OdA: 0 to 3% slopes	7	Red clayey glaciolacustrine deposits derived from calcareous shale	More than 80”	Somewhat poorly drained	Prime farmland if drained	No
2	Odessa silt loam	OdB: 3 to 8% slopes	0.69	Red clayey glaciolacustrine deposits derived from calcareous shale	More than 80”	Somewhat poorly drained	Prime farmland if drained	No
3, 4 Existing, 4 Relocated	Ontario loam	OnB: 3 to 8% slopes	6.99	Calcareous loamy lodgment till derived from limestone, sandstone, and shale	More than 80”	Well drained	All areas are prime farmland	No
4 Existing, 4 Relocated, 7	**Ontario loam**	**OnC: 8 to 15% slopes**	**1.18**	**Calcareous loamy lodgment till derived from limestone, sandstone, and shale**	**More than 80”**	**Well drained**	**Farmland of statewide importance**	**No**
2, 3, 7	Ovid silt loam	OvA: 0 to 3% slopes	6.92	Loamy till with a significant component of reddish shale or reddish glaciolacustrine clays, mixed with limestone and some sandstone	More than 80”	Somewhat poorly drained	Prime farmland if drained	No
2, 7	Ovid silt loam	OvB: 2 to 8% slopes	2.6	Loamy till with a significant component of reddish shale or reddish glaciolacustrine clays, mixed with limestone and some sandstone	More than 80”	Somewhat poorly drained	Prime farmland if drained	No
1	Ovid silt loam	OwA: 0 to 3% slopes	0.26	Loamy till with a significant component of reddish shale or reddish glaciolacustrine clays, mixed with limestone and some sandstone	40 - 60"	Somewhat poorly drained	Prime farmland if drained	No
4 Relocated	Palms muck	Pd: n/a	1.79	Organic material over loamy glacial drift	More than 80”	Very poorly drained	Not prime farmland	Yes

Table 4.8-1 Soil Types Traversed by the Project ROW								
Segment[2]	**Soil Series**	**Mapping Unit**	**Percent Coverage Within ROW[1]**	**Parent Material**	**Depth to Bedrock (inches)**	**Drainage Class**	**Farmland Class**	**Hydric Soil**
1	Phelps gravelly loam	PsA: 0 to 5% slopes	1.18	Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits, containing significant amounts of limestone	More than 80”	Moderately well drained	All areas are prime farmland	No
4 Relocated	Phelps gravelly loam	PsB: 3 to 8% slopes	0.76	Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits, containing significant amounts of limestone	More than 80”	Moderately well drained	All areas are prime farmland	No
2	Rhinebeck silt loam	RbA: 0 to 2% slopes	5.93	Clayey and silty glaciolacustrine deposits	More than 80”	Somewhat poorly drained	Prime farmland if drained	No
1	Rhinebeck silty clay loam	RhA: 0 to 2% slopes	1.37	Clayey and silty glaciolacustrine deposits	More than 80”	Somewhat poorly drained	Prime farmland if drained	No
4 Existing	Rhinebeck silt loam	RoA: 0 to 3% slopes	0.46	Clayey and silty glaciolacustrine deposits	More than 80”	Somewhat poorly drained	Prime farmland if drained	No
7	**Romulus silt loam**	**RsA: 0 to 3% slopes**	**0.47**	**Loamy till derived from reddish calcareous shale, limestone, and sandstone, in places intermixed with glaciolacustrine deposits**	**More than 80”**	**Poorly drained**	**Farmland of statewide importance**	**Yes**
7	Schoharie silt loam	SeB: 1 to 6% slopes	0.32	Red clayey glaciolacustrine deposits derived from calcareous shale	More than 80”	Moderately well drained	All areas are prime farmland	No
5	Scio silt loam	SmB: 2 to 8% slopes	0.31	Glaciolacustrine deposits, eolian deposits, or old alluvium, comprised mainly of silt and very fine sand	More than 80”	Moderately well drained	All areas are prime farmland	No
1	**Sun silt loam**	**Sw: n/a**	**2.05**	**Loamy till derived primarily from limestone and sandstone, with a component of schist, shale, or granitic rocks in some areas**	**More than 80”**	**Very poorly drained**	**Farmland of statewide importance**	**Yes**

Table 4.8-1 Soil Types Traversed by the Project ROW

Segment[2]	Soil Series	Mapping Unit	Percent Coverage Within ROW[1]	Parent Material	Depth to Bedrock (inches)	Drainage Class	Farmland Class	Hydric Soil
1, 4 Relocated, 7	Water	W: n/a	3.18	N/A	N/A	N/A	Not prime farmland	N/A
4 Existing, 4 Relocated	Wayland soils complex	Wy: 0 to 3% slopes	1.69	Silty and clayey alluvium derived from interbedded sedimentary rock	More than 80”	Poorly drained	Not prime farmland	Yes

Notes:

[1] Source: USDA/NRCS, 2021, Fisher Associates GIS Calculations

[2] Greyed and bolded soil types may be considered vulnerable based on the USDA NRCS criteria. For the purposes of this Project, vulnerable soils are those that are in potential agricultural areas (defined as soils with Farmland Classes of: “All areas are prime farmland” or “Farmland of statewide importance”), and soils that typically have slopes of 8% or greater, are poorly drained, or have less than 36” depth to bedrock.

4.9 NOISE

In accordance with PSL §122(1)(c) and 16 NYCRR §§86.5(a) and (b)(8), this section includes the description of the Project ROW and the efforts to avoid or minimize the potential for noise disturbance in the adjoining areas. This section also identifies the location of all sensitive receptors and describes measures to mitigate potential noise disturbance during construction and operation of the Project.

4.9.1 Existing Noise Quality Conditions

4.9.1.1 Transmission ROW

The lands adjacent to the Project ROW are a mix of undeveloped forest and shrub lands, residential areas, agricultural areas, and areas of commercial/industrial development. In addition, the Project ROW crosses several highways (including Route 93 and Route 78). The primary background noise sources in these areas are traffic from the surrounding roadways and parking areas, local vehicular operation, agricultural operations, lawn mowing and other residential home activities, aircraft traffic, and natural sounds (*e.g.,* birds, insects). Literature indicates that typical daytime noise levels in nonurban residential areas can be within the range of 46 A-weighted decibels ("dBA") for quiet residential areas to 52 dBA for suburban areas (NYSDEC, 2001; Section V.B.3).

The existing operational noise within the Existing ROW is associated with transmission line electro-static or "corona" effect, which occurs during humid days and precipitation events. Existing residences directly adjacent to the ROW may experience this effect depending on the relative distance to the Existing ROW and background noise levels. The noise resulting from the corona effect, as compared to the background noise level such as a rainfall event, would be nearly indiscernible. Because the Project is primarily a rebuild of Existing Line 112 within the Existing ROW, no significant increase in operational noise is anticipated as a result of Rebuilt Line 112. Thus, the operation of the Rebuilt Line 112 will not result in any new permanent or long-term significant adverse noise impacts. The minimal corona noise, which could be generated during rainy weather, will be masked by the sound of the falling rain itself.

Moreover, no work or new installation of equipment or other appurtenance is proposed within the fence line at any substation for this Project. Thus, there will be no change in existing operational noise, or visual changes, at the substations to be connected to Rebuilt Line 112.

4.9.2 Applicable Noise Standards

With the exception of the U.S. Occupational Health and Safety Administration's regulations that describe worker health and safety limits for noise exposure, there are no other federal or state noise regulations or requirements specific to the Project or to transmission line operation in the State of New York. In addition, there are no standardized regulatory impact criteria for the assessment of construction noise and vibration directly applicable to this type of Project. The regulatory framework at the federal, state, and local levels is presented below.

4.9.2.1 Federal Criteria

U.S. Environmental Protection Agency

In 1974, the USEPA published Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (USEPA 1974), which includes widely accepted recommendations for long-term exposure to environmental noise with the goal of protecting public health and safety. This report represents the only published study that includes a large database of community reaction to long-term noise impacts to which Project operation can be readily compared. This publication evaluates the effects of environmental noise with respect to health and safety and provides information for state and local governments to use in developing their own ambient noise standards.

For the outdoors in residential areas and other places in which quiet is a basis for use, the recommended USEPA guideline is a day-night sound level ("Ldn") of 55 dBA. The Ldn is a 24-hour average sound level that includes a 10-decibel ("dB") addition to sound levels during nighttime hours. If, as anticipated, Project operations meet this criteria level, adjacent receptors would regard the noise levels as generally acceptable.

U.S. Department of Transportation

The Federal Highway Association of the U.S. Department of Transportation has identified criteria for the assessment and measurement of short- and long-term construction activities for both stationary and mobile projects, and specifically for linear projects (2018). The Federal Highway Administration recommends abatement of construction noise that exceeds maximum levels at noise sensitive receptors and the use of best management practices to reduce the noise levels. These project construction noise assessment criteria take into account diurnal pattern of construction activities, the absolute noise levels during construction activities, the duration of the construction, and the adjacent land use. While these criteria were not developed to specifically

address construction noise impact for power transmission line projects, these guidelines provide reasonable steps for assessment and best management practices to be used. If the USEPA noise levels are exceeded adverse community reaction may result, thus this document can provide guidance on how to calculate the Project noise levels and best management practices to reduce them.

4.9.2.2 State Criteria

In 2001, the NYSDEC published a Program Policy titled "Assessing and Mitigating Noise Impacts" (NYSDEC program policy), which describes a methodology for the evaluation of the potential community impacts from any new noise source. The NYSDEC method is based on the perceptibility of environmental noise at the nearest residences, or other potentially sensitive receptors (*i.e.,* schools, churches, etc.). In areas that are not sensitive to noise or in undeveloped areas, the application of the NYSDEC criteria would not be appropriate. The NYSDEC guidelines have been applied as a basis of assessment for several Article VII transmission line projects in the State of New York. The NYSDEC program policy states:

> *Increases ranging from 0-3 dB should have no appreciable effect on receptors. Increases from 3-6 dB may have potential for adverse noise impact only in cases where the most sensitive receptors are present. Sound pressure increases of more than 6 dB may require closer analysis of impact potential depending on existing [sound pressure levels] ("SPLs") and the character of surrounding land use and receptors. (NYSDEC, 2001; Section V.B.1.c).*

Based on the NYSDEC program policy, receptors below the 6 dB cumulative increase threshold are considered as having a low probability of disturbance. If exceedances of the 6 dB guideline criteria are identified, the program policy outlines an approach referred to as the Second Level Noise Impact Evaluation for further evaluating the potential exceedance condition. New York State does not have environmental noise regulations with numerical decibel limits directly applicable to Project construction.

4.9.2.3 Local Criteria

All applicable noise ordinances and standards for the localities traversed by the Project are identified in Exhibit 7 – Local Ordinances.

4.9.3 Potential Impacts and Mitigation

This section identifies the Project construction activities and operation that could affect noise levels in the vicinity of the Project ROW. Sensitive receptor, noise attenuation factors, and conditions are described in relation to mitigating any potential noise disturbance during construction and operation of the Project.

The construction of overhead transmission lines typically includes the following activities:

- Site and vegetation clearing;
- Foundation form installation;
- Excavation/concrete placement (as needed);
- Structure installation; and
- Wire stringing.

Noise generated during construction is primarily from two sources: diesel engines, which power construction vehicles; and the noise generated from rock drills and jack hammers (if needed). Neither helicopters nor blasting is anticipated to be used for construction of this Project. Exhaust and engine noise are typically the predominant sources of noise from equipment operation. Contractors are required to maintain functional mufflers on all relevant equipment. Maximum sound levels associated with the construction equipment typically used in overhead transmission line construction projects are provided in Table 4.9-1. Each piece of equipment presented in Table 4.9-1, however, is not used in every phase of construction, and equipment used is generally not operated continuously. A variety of construction equipment noise sources will be associated with each phase of construction.

Residential homes are found at varying distances and densities along the Project ROW. The most densely populated residential areas crossed by the Project ROW are in the Towns of Lockport and Royalton (Segment 2). Because this Segment is comprised of two (2) State roads crossed by the Project and land uses are predominately Public Service and Residential, it is likely that existing ambient noise levels are higher than in other Segments comprised of relatively fewer noise sensitive receptors or greater undeveloped areas, such as Agricultural areas. Some of these areas have large numbers of residential addresses within 100 feet of the Existing ROW. Table 4.9-2 presents the number of residential addresses within 100 feet of the Project ROW.

The information presented in Table 4.9-2 indicates that for the nearest residences, construction sound levels will temporarily exceed ambient levels for short-term periods, depending upon the actual location of the residential building, the intensity of work activity and the type of

equipment or noise source. For the majority of residences located further from the ROW, construction noise will be much lower and will generally be below ambient levels.

Construction noise will be attenuated with distance. Other factors, such as dense vegetation, terrain and obstacles such as buildings will act to further reduce noise levels. A building will provide significant attenuation of associated construction noise. For instance, sound levels can be expected to be up to 27 dB lower indoors with windows closed (USEPA, 1978). Even in homes with open windows, indoor sound levels can be reduced by up to 17 dB.

Noise level changes resulting from the proposed construction activity associated with the Project are expected to be short-term and minimal. Construction noise will be temporary and vary according to the construction equipment in use and existing background or ambient noise. Generally, temporary noise levels are mitigated by the attenuating effects of distance, the intermittent and short-lived character of the noise, the presence of existing vegetation, the presence of homes and buildings (particularly in the more suburban areas), and the use of functional mufflers on all construction equipment. Transmission line construction is of short duration in the sense that equipment is generally located at a structure site for only three to five days, and then shifted to the next pole structure site in the Project ROW. No one residence will be exposed to significant noise levels for an extended period of time. Comparable work activity and the associated magnitude of noise level change include public works projects and tree service activity.

To minimize noise impacts during construction, National Grid will limit construction activities on the Project to the hours of 7:00 a.m. to 7:00 p.m. Monday through Saturday. If due to safety or continuous operation requirements, construction activities are required to occur on Sundays or after 7:00 p.m., National Grid will notify the Department of Public Services ("DPS') Staff and the affected municipality at least 24 hours in advance unless safety considerations prohibit making such advance notice.

The Project will include vegetation mowing in areas of varying widths on either side of the ROW between residential areas. The vegetation generally consists of mostly tall grass, small shrubs, and some small to mature trees. The maximum width of vegetation to be removed in any one contiguous area is less than 60 feet within the Project ROW. However, in Segment 4 Relocated where a new ROW will be established, the width of the ROW easement will be 100 feet, and although most of this area is already cleared for agricultural purposes, there are a few sections of trees that will need to be removed, but they do not span the entire width of the Project ROW.

None of the areas identified for tree and vegetation removal for the Project consist of a contiguous section of more than 100 feet of vegetation. The widest vegetation that will be removed for the Project is approximately 100 feet and does not primarily consist of dense coniferous trees. As a conservative estimate of noise impact, assuming the vegetation were dense at 100 feet wide, the increase in sound level at the receiver over existing ambient noise would be about 1 dBA, using the International Standards Organization Standard 9613-2: 1996 algorithm for estimating the attenuation achieved by dense foliage. The NYSDEC program policy identifies a change in sound pressure less than 6 dBA to be considered "unnoticed to tolerable" for humans (NYSDEC, 2001). As such, based on the width of the vegetation to be removed and the light to moderate density of vegetation, there should not be perceptible noise increase as a result of the vegetation cleared for the Project. Thus, clearing activities for the Project are anticipated to have no significant impact on noise.

Table 4.9-1 Typical Maximum Noise Levels of Major Construction Equipment

Equipment Type	Construction Equipment Noise Levels at 50 Feet (dBA)
Chainsaw	75-81
Grader	85
Concrete Mixer	63-71
Bulldozers	80
Pickup Trucks	91
Backhoes	83-86
Vibratory Hammer	82
Pavement Saw	82
Compactor	67
Source:. DEP-00-1; Table D (NYSDEC, 2001)	

Table 4.9-2 Residential Addresses Within 100 Feet of Project ROW				
Town/Village/ Hamlet[1]	**Project Segment**	**Street Name**	**Nearest Structure**	**Parcel ID**
Gasport	2	Ernest Rd	STR 91	126.00-1-25
Gasport	2	Royalton Center Rd	STR 96	126.00-1-31
Gasport	2	Ernest Rd	STR 89	126.00-1-33.1
Gasport	2	Ernest Rd	STR 87	126.00-1-35.112
Gasport	2	Ernest Rd	STR 89	126.00-1-35.12
Gasport	2	Ernest Rd	STR 86	126.00-1-36.1
Gasport	2	Ernest Rd	STR 85	126.00-1-37.11
Gasport	2	Ernest Rd	STR 85	126.00-1-37.12
Gasport	2	Ward Rd	STR 82	126.00-1-39
Gasport	2	Royalton Center Rd	STR 99	126.00-2-29.11
Gasport	2	Royalton Center Rd	STR 97	126.00-2-29.2
Gasport	2	Royalton Center Rd	STR 98	126.00-2-31
Gasport	2	Royalton Center Rd	STR 97	126.00-2-32
Gasport	2	Royalton Center Rd	STR 96	126.00-2-33
Gasport	2	Ward Rd	STR 84	141.00-1-12.2
Lockport	2	Glendale Dr	STR 8.1	122.04-2-1
Lockport	2	Glendale Dr	STR 8.1	122.04-2-2
Lockport	2	Glendale Dr	STR 9	122.04-2-3
Lockport	2	Glendale Dr	STR 9	122.04-2-4
Lockport	2	Glendale Dr	STR 9	122.04-2-5
Lockport	2	Glendale Dr	STR 9	122.04-2-6
Lockport	2	Glendale Dr	STR 9	122.04-2-7
Lockport	2	Glendale Dr	STR 10	122.04-2-8
Lockport	2	Glendale Dr	STR 10	122.04-2-9
Lockport	2	Bowmiller Rd	STR 36	123.00-1-20
Lockport	2	Bowmiller Rd	STR 34	123.00-1-22
Lockport	2	Amy Ln	STR 25	123.04-1-57
Lockport	2	Amy Ln	STR 25	123.04-1-58
Lockport	2	Amy Ln	STR 25	123.04-1-59
Lockport	2	Amy Ln	STR 25	123.04-1-60
Lockport	2	Amy Ln	STR 25	123.04-1-61
Lockport	2	Amy Ln	STR 25	123.04-1-62
Lockport	2	Amy Ln	STR 26	123.04-1-63
Lockport	2	Amy Ln	STR 26	123.04-1-64
Lockport	2	Amy Ln	STR 26	123.04-1-65
Lockport	2	Amy Ln	STR 26	123.04-1-66
Lockport	2	Amy Ln	STR 26	123.04-1-67
Lockport	2	Amy Ln	STR 26	123.04-1-68
Lockport	2	Amy Ln	STR 27	123.04-1-69

Table 4.9-2 Residential Addresses Within 100 Feet of Project ROW				
Town/Village/ Hamlet[1]	**Project Segment**	**Street Name**	**Nearest Structure**	**Parcel ID**
Lockport	2	Amy Ln	STR 27	123.04-1-70
Lockport	2	Amy Ln	STR 27	123.04-1-71
Lockport	2	Amy Ln	STR 27	123.04-1-72
Lockport	2	Amy Ln	STR 27	123.04-1-73
Lockport	2	Amy Ln	STR 27	123.04-1-74
Lockport	2	Amy Ln	STR 28	123.04-1-75
Lockport	2	Amy Ln	STR 28	123.04-1-76
Lockport	2	Amy Ln	STR 28	123.04-1-77
Lockport	2	Beattie Ave	STR 24	123.04-1-78
Lockport	2	Beattie Ave	STR 23	123.18-2-28
Lockport	2	O'Connor Dr	STR 23	123.18-2-29
Lockport	2	O'Connor Dr	STR 23	123.18-2-30
Lockport	2	O'Connor Dr	STR 22	123.18-2-31
Lockport	2	O'Connor Dr	STR 22	123.18-2-32
Lockport	2	O'Connor Dr	STR 22	123.18-2-33
Lockport	2	O'Connor Dr	STR 22	123.18-2-34
Lockport	2	O'Connor Dr	STR 21	123.18-2-35
Lockport	2	O'Connor Dr	STR 21	123.18-2-36
Lockport	2	O'Connor Dr	STR 21	123.18-2-37
Lockport	2	O'Connor Dr	STR 21	123.18-2-38
Lockport	2	O'Connor Dr	STR 21	123.18-2-39
Lockport	2	O'Connor Dr	STR 20	123.18-2-40
Lockport	2	O'Connor Dr	STR 20	123.18-2-41
Lockport	2	Locust St Ext	STR 20	123.18-2-42
Lockport	2	Locust St Ext	STR 20	123.18-2-43
Lockport	2	Locust St Ext	STR 20	123.18-3-1
Lockport	2	Sherman Dr	STR 22	123.18-3-10
Lockport	2	Sherman Dr	STR 22	123.18-3-11
Lockport	2	Sherman Dr	STR 22	123.18-3-12
Lockport	2	Sherman Dr	STR 22	123.18-3-13
Lockport	2	Sherman Dr	STR 23	123.18-3-14
Lockport	2	Sherman Dr	STR 23	123.18-3-15
Lockport	2	Sherman Dr	STR 23	123.18-3-16
Lockport	2	Sherman Dr	STR 23	123.18-3-17
Lockport	2	Sherman Dr	STR 23	123.18-3-18
Lockport	2	Sherman Dr	STR 24	123.18-3-19
Lockport	2	Locust St Ext	STR 20	123.18-3-3
Lockport	2	Sherman Dr	STR 20	123.18-3-4
Lockport	2	Sherman Dr	STR 21	123.18-3-5

Table 4.9-2 Residential Addresses Within 100 Feet of Project ROW				
Town/Village/ Hamlet[1]	**Project Segment**	**Street Name**	**Nearest Structure**	**Parcel ID**
Lockport	2	Sherman Dr	STR 21	123.18-3-6
Lockport	2	Sherman Dr	STR 21	123.18-3-7
Lockport	2	Sherman Dr	STR 21	123.18-3-8
Lockport	2	Sherman Dr	STR 22	123.18-3-9
Lockport	2	Wynkoop Rd	STR 43	124.03-2-71
Lockport	2	Akron Rd	STR 41	124.03-2-77
Lockport	2	Akron Rd	STR 40	124.03-2-78
Lockport	2	Akron Rd	STR 55	124.04-3-33
Lockport	2	Akron Rd	STR 54	124.04-3-34.2
Lockport	2	Akron Rd	STR 53	124.04-3-36
Lockport	2	Akron Rd	STR 52	124.04-3-37
Lockport	2	Oak Ln	STR 51	124.04-3-42.112
Lockport	2	Oak Ln	STR 50	124.04-3-44
Lockport	2	Oak Ln	STR 50	124.04-3-45.12
Lockport	2	Akron Rd	STR 49	124.04-3-53
Lockport	2	Akron Rd	STR 49	124.04-3-54
Lockport	2	Akron Rd	STR 48	124.04-3-55.1
Lockport	2	Singer Rd	STR 66	125.00-1-47.12
Lockport	2	Dysinger Rd	STR 34	138.00-2-2.11
Lockport	2	Bowmiller Rd	STR 36	138.00-2-3
Lockport	2	Royal Pkwy N	STR 25	138.02-1-10
Lockport	2	Royal Pkwy N	STR 25	138.02-1-11
Lockport	2	Royal Pkwy N	STR 25	138.02-1-12
Lockport	2	Royal Pkwy N	STR 26	138.02-1-13
Lockport	2	Royal Pkwy N	STR 26	138.02-1-14
Lockport	2	Royal Pkwy N	STR 26	138.02-1-15
Lockport	2	Royal Pkwy N	STR 26	138.02-1-16
Lockport	2	Royal Pkwy N	STR 26	138.02-1-17
Lockport	2	Royal Pkwy N	STR 26	138.02-1-18
Lockport	2	Royal Pkwy N	STR 27	138.02-1-19
Lockport	2	Royal Pkwy N	STR 27	138.02-1-20
Lockport	2	Royal Pkwy N	STR 27	138.02-1-21
Lockport	2	Royal Pkwy N	STR 27	138.02-1-22
Lockport	2	Royal Pkwy N	STR 27	138.02-1-23
Lockport	2	Royal Pkwy N	STR 27	138.02-1-24
Lockport	2	Royal Pkwy N	STR 28	138.02-1-25
Lockport	2	Royal Pkwy N	STR 28	138.02-1-26
Lockport	2	Royal Pkwy N	STR 28	138.02-1-27
Lockport	2	Royal Pkwy N	STR 28	138.02-1-28

Table 4.9-2 Residential Addresses Within 100 Feet of Project ROW				
Town/Village/ Hamlet[1]	**Project Segment**	**Street Name**	**Nearest Structure**	**Parcel ID**
Lockport	2	Royal Pkwy N	STR 28	138.02-1-29
Lockport	2	Royal Pkwy N	STR 28	138.02-1-30
Lockport	2	Royal Pkwy N	STR 28	138.02-1-31
Lockport	2	Royal Pkwy N	STR 29	138.02-1-32
Lockport	2	Royal Pkwy N	STR 29	138.02-1-33
Lockport	2	Royal Pkwy N	STR 29	138.02-1-34
Lockport	2	Royal Pkwy N	STR 29	138.02-1-35
Lockport	2	Royal Pkwy N	STR 29	138.02-1-36
Lockport	2	Royal Pkwy N	STR 29	138.02-1-37
Lockport	2	Royal Pkwy N	STR 29	138.02-1-38
Lockport	2	Royal Pkwy N	STR 30	138.02-1-39
Lockport	2	Royal Pkwy N	STR 30	138.02-1-40
Lockport	2	Royal Pkwy N	STR 30	138.02-1-42
Lockport	2	Royal Pkwy N	STR 30	138.02-1-43
Lockport	2	Royal Pkwy N	STR 31	138.02-1-44
Lockport	2	Royal Pkwy N	STR 31	138.02-1-45
Lockport	2	Royal Pkwy N	STR 31	138.02-1-46
Lockport	2	Royal Pkwy N	STR 31	138.02-1-47
Lockport	2	Royal Pkwy N	STR 31	138.02-1-48
Lockport	2	Royal Pkwy N	STR 31	138.02-1-49
Lockport	2	Royal Pkwy N	STR 24	138.02-1-5
Lockport	2	Royal Pkwy N	STR 31	138.02-1-50
Lockport	2	Royal Pkwy N	STR 32	138.02-1-51
Lockport	2	Royal Pkwy N	STR 32	138.02-1-52
Lockport	2	Royal Pkwy N	STR 24	138.02-1-6
Lockport	2	Royal Pkwy N	STR 25	138.02-1-7
Lockport	2	Royal Pkwy N	STR 25	138.02-1-8
Lockport	2	Royal Pkwy N	STR 25	138.02-1-9
Lockport	2	Wynkoop Rd	STR 46	139.00-2-1.112
Lockport	2	Akron Rd	STR 52	139.00-2-4
Lockport	2	Akron Rd	STR 53	139.00-2-6
Middleport	2	Ernest Rd	STR 102	126.00-2-27.111
Middleport	2	Ernest Rd	STR 101	126.00-2-27.3
Middleport	2	Ernest Rd	STR 100	126.00-2-28
Middleport	2	Johnson Rd	STR 118	127.00-1-29.2
Middleport	2	Johnson Rd	STR 119	127.00-1-29.2
Middleport	2	Johnson Rd	STR 117	127.00-1-33
Middleport	2	Johnson Rd	STR 116.1	127.00-1-34
Middleport	2	Lewiston Rd	STR 111	127.00-1-40.111

Table 4.9-2 Residential Addresses Within 100 Feet of Project ROW				
Town/Village/ Hamlet[1]	**Project Segment**	**Street Name**	**Nearest Structure**	**Parcel ID**
Middleport	2	Johnson Rd	STR 111	127.00-1-40.112
Middleport	2	Johnson Rd	STR 111	127.00-1-40.12
Middleport	2	Johnson Rd	STR 109	127.00-1-40.3
Middleport	2	Lewiston Rd	STR 108	127.00-1-41.111
Middleport	2	Ernest Rd	STR 105	127.00-1-47
Middleport	2	Ernest Rd	STR 106	127.00-1-48
Middleport	2	Lewiston Rd	STR 114	127.00-1-76
Middleport	2	Lewiston Rd	STR 109	127.00-1-88
Middleport	2	Lewiston Rd	STR 112	127.00-1-89
Middleport	3	Johnson Rd	STR 124	127.00-1-27.21
Middleport	3	Johnson Rd	STR 123	127.00-1-27.22
Middleport	3	Johnson Rd	STR 121	127.00-1-28.111
Middleport	3	Johnson Rd	STR 119	127.00-1-29.2
Middleport	3	Johnson Rd	STR 119	127.00-1-29.2
Middleport	3	Lewiston Rd	STR 139	143.00-1-6.1
Alabama	4	Lewiston Rd	STR 142	1.-1-1
Alabama	5	Lewiston Rd	STR 173	6.-1-73
Alabama	5	Lewiston Rd	STR 171	6.-1-74
Alabama	7	Alleghany Rd	STR 190	10.-1-33.1
Alabama	7	Alleghany Rd	STR 197	11.-1-71
Alabama	7	Judge Rd	STR 197	15.-1-17
Alabama	7	Judge Rd	STR 198	15.-1-18
Alabama	7	Judge Rd	STR 200	15.-1-19.1

Note:
[1] The Villages of Gasport and Middleport are located in the Town of Royalton.

4.10 INVASIVE SPECIES

4.10.1 Existing Conditions

An initial invasive plant species inventory was conducted between August 6 and October 2, 2019, June 16, 2020, and November 12 and 13, 2020. The study objective was to identify the presence and abundance of invasive plant species within the Project ROW (see Appendix E - Invasive Species Inventory Report).

According to the NYSDEC, the definition of an invasive species is "a species that is non-native to the ecosystem under consideration; and whose introduction causes or is likely to cause economic harm or harm to human health." The NYSDEC has developed regulations to help control invasive species throughout the state by reducing their introduction and spread. Under Title 6 NYCRR Part 575: Prohibited and Regulated Invasive Species, the NYSDEC has identified and classified invasive species that will be regulated statewide. On September 10, 2014, the NYSDEC released a list of Prohibited and Regulated Invasive Species (under 6 NYCRR Part 575) of plants and animals for New York State.

During the time of the initial invasive plant species survey, the Project ROW was divided into twenty-eight (28) distinct Invasive Species Sections in order to gather more comprehensive data. These sections were created using geographic indicators such as roads and streams as dividing barriers. If an invasive plant species was observed, its presence was noted within the given Invasive Species Section, along with its abundance based on relative aerial coverage to the overall Invasive Species Section. The abundance of each invasive plant species was recorded using the following breakdown of percent relative aerial coverage categories:

- Sparse (<5% aerial coverage)
- Moderate (5-25% aerial coverage)
- Abundant (>25% aerial coverage)

Additionally, a tiered approach was used to categorize each Invasive Species Section into either Tier 1, Tier 2 or Tier 3; based on abundance (*i.e.,* relative aerial coverage (how many invasive plant species were present within the segment)); and how many invasive plant species observed considered to be of high concern. Plant species that have previously been identified as species of high concern by state agencies on similar National Grid projects in western New York include: common reed (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*), Japanese knotweed (*Fallopia japonica*), glossy buckthorn (*Frangula alnus*), cow parsley (*Anthriscus sylvestris*), mugwort (*Artemisia vulgaris*), honeysuckle (*Lonicera spp.*), common buckthorn

(*Rhamnus cathartica*), Canada thistle (*Cirsium arvense*), and cut leaf teasel (*Dipsacus laciniatus*). The following are the three (3) tier categories used for each Invasive Species Section based on the site characteristics observed during the inventory:

Tier 1- Areas with no invasive plant species currently present, and areas that have invasive plant species present in sparse abundance (relative aerial coverage). These areas also did not contain invasive plant species of high concern (as noted above);

Tier 2- Areas with one (1) invasive plant species of moderate abundance (relative aerial coverage) with various amounts of other invasive plant species present of sparse abundance (relative aerial coverage); or areas with one (1) invasive plant species present of abundant relative aerial coverage, with various amounts of other invasive plant species present of sparse to moderate relative aerial coverage; and did not contain invasive plant species of high concern (as noted above); and

Tier 3- Areas with two (2) or more invasive plant species present of moderate and sparse abundance (relative aerial coverage); and/or contained or suspected to contain invasive plant species of high concern (as noted above).

Of the twenty-eight (28) Invasive Species Sections, twenty-four (24) were classified as Tier 3 (areas with two (2) or more moderate invasive plant species or contained invasive plant species of high concern), one (1) met the conditions of Tier 2 (areas with one (1) invasive plant species of moderate abundance or areas of one (1) abundant invasive plant species), and three (3) segments were classified as Tier 1 (areas with sparse or no invasive plant species present). A comprehensive list of species found in each Invasive Species Section, their relative aerial coverage and Tier classification, and their location within the Project ROW is provided in Appendix E - Invasive Species Inventory Report.

4.10.2 Project Effects of Invasive Species

The initial invasive plant species inventory of the Project ROW did not reveal any findings that would be considered unusual for the area. This plan has been reviewed and accepted by the NYSDEC. A List of Invasive Species of Special Concern for the Project will be developed in consultation with DPS Staff, NYSDEC, and NYSDAM during the preparation of the EM&CP. The EM&CP will address the measures to be implemented to minimize the introduction and spread

of invasive species during construction of the Project. Based on the initial survey, it is anticipated that good construction practices such as ensuring that all equipment, tools, and materials are clean before entering and upon leaving the Project ROW will prevent the spread of invasive plant species to surrounding areas. National Grid has adopted the Environmental Energy Alliance of New York's "*New York Utility Company Best Management Practices for Preventing the Transportation of Invasive Plant Species*," dated January 2015, and the list of invasive plant species in New York State contained therein.

Additionally, removal of any trees from the ROW will be pursuant to the NYSDEC's firewood regulations to protect forests from invasive insect species found in 6 NYCRR Part 192, and any applicable NYSDEC quarantine orders and/or NYSDAM quarantine regulations. Also, clearing crews will be trained to identify the Asian Longhorned Beetle, the Emerald Ash Borer, and any other insect that DPS Staff or NYSDEC identifies as a potential problem. If evidence of the existence of these insects is found, they will be reported immediately to the DPS Staff and the appropriate NYSDEC regional forester.

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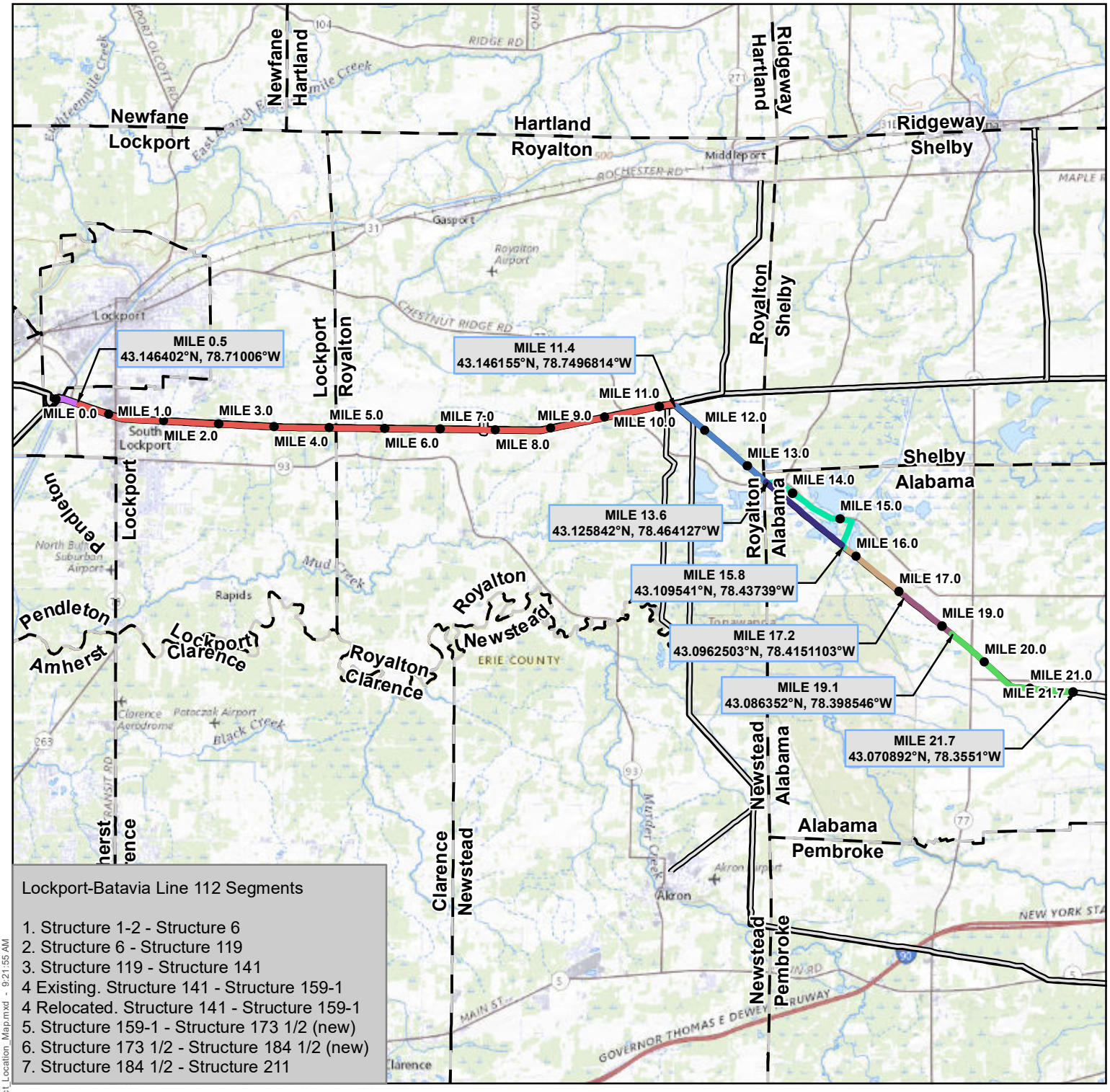
EXHIBIT 4 – ENVIRONMENTAL IMPACT

FIGURES

FIGURE 4.1-1 PROJECT LOCUS MAP

(SHEETS 1 TO 4)



Lockport-Batavia Line 112 Segments

1. Structure 1-2 - Structure 6
2. Structure 6 - Structure 119
3. Structure 119 - Structure 141
4 Existing. Structure 141 - Structure 159-1
4 Relocated. Structure 141 - Structure 159-1
5. Structure 159-1 - Structure 173 1/2 (new)
6. Structure 173 1/2 - Structure 184 1/2 (new)
7. Structure 184 1/2 - Structure 211

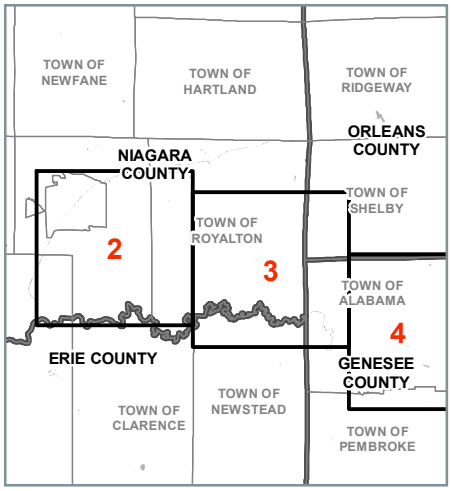
Project USGS Quad(s):
Lockport
Gasport
Medina
Akron
Oakfield

Lockport-Batavia Line 112 Transmission Line

- Segment 1
- Segment 2
- Segment 3
- Segment 4 Existing
- Segment 4 Relocated
- Segment 5
- Segment 6 (not part of Article VII Project)
- Segment 7
- National Grid Transmission Line

Data Sources:
United States Geological Survey 24k Topo Quad Map - usgs.gov

Author: MFA | Revision Date: 11/14/2022



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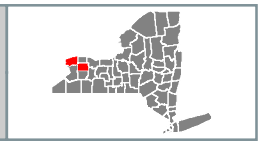
North American Datum 1983



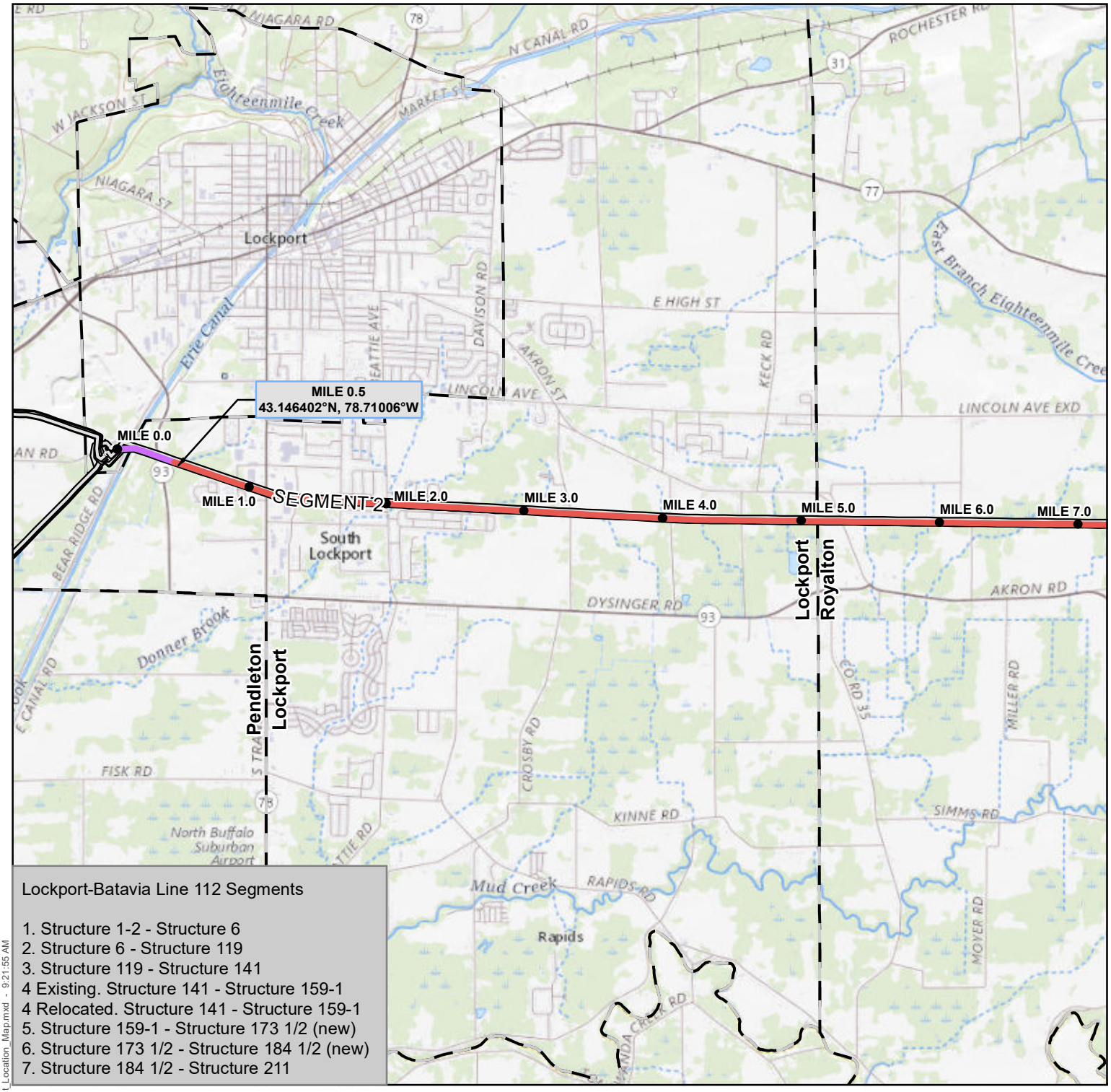
0 1.25 2.5 Miles

FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT – BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.1-1
PROJECT LOCUS MAP

SHEET 1 OF 4

H:\Projects\190176-00-NG_Batavia_Art_7\GIS\NG_Lockport_Batavia_4.1-1_Project_Location_Map.mxd - 9:21:55 AM



Lockport-Batavia Line 112 Segments

1. Structure 1-2 - Structure 6
2. Structure 6 - Structure 119
3. Structure 119 - Structure 141
4 Existing. Structure 141 - Structure 159-1
4 Relocated. Structure 141 - Structure 159-1
5. Structure 159-1 - Structure 173 1/2 (new)
6. Structure 173 1/2 - Structure 184 1/2 (new)
7. Structure 184 1/2 - Structure 211

Project USGS Quad(s):
Lockport
Gasport
Medina
Akron
Oakfield

Lockport-Batavia Line 112 Transmission Line

- Segment 1
- Segment 2
- Segment 3
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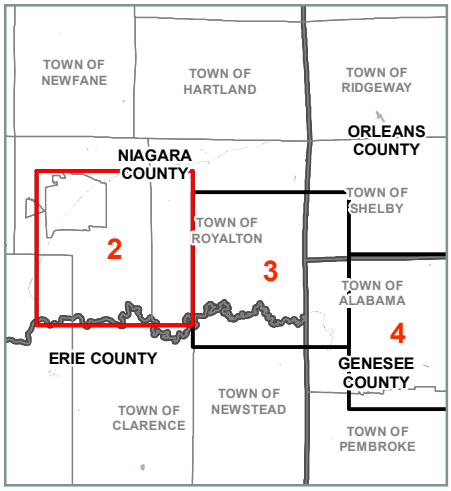
Author: MFA | Revision Date: 11/14/2022



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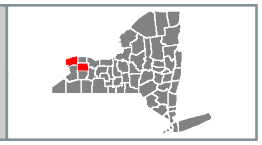

0 0.5 1 Miles

FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT – BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.1-1
PROJECT LOCUS MAP

SHEET 2 OF 4

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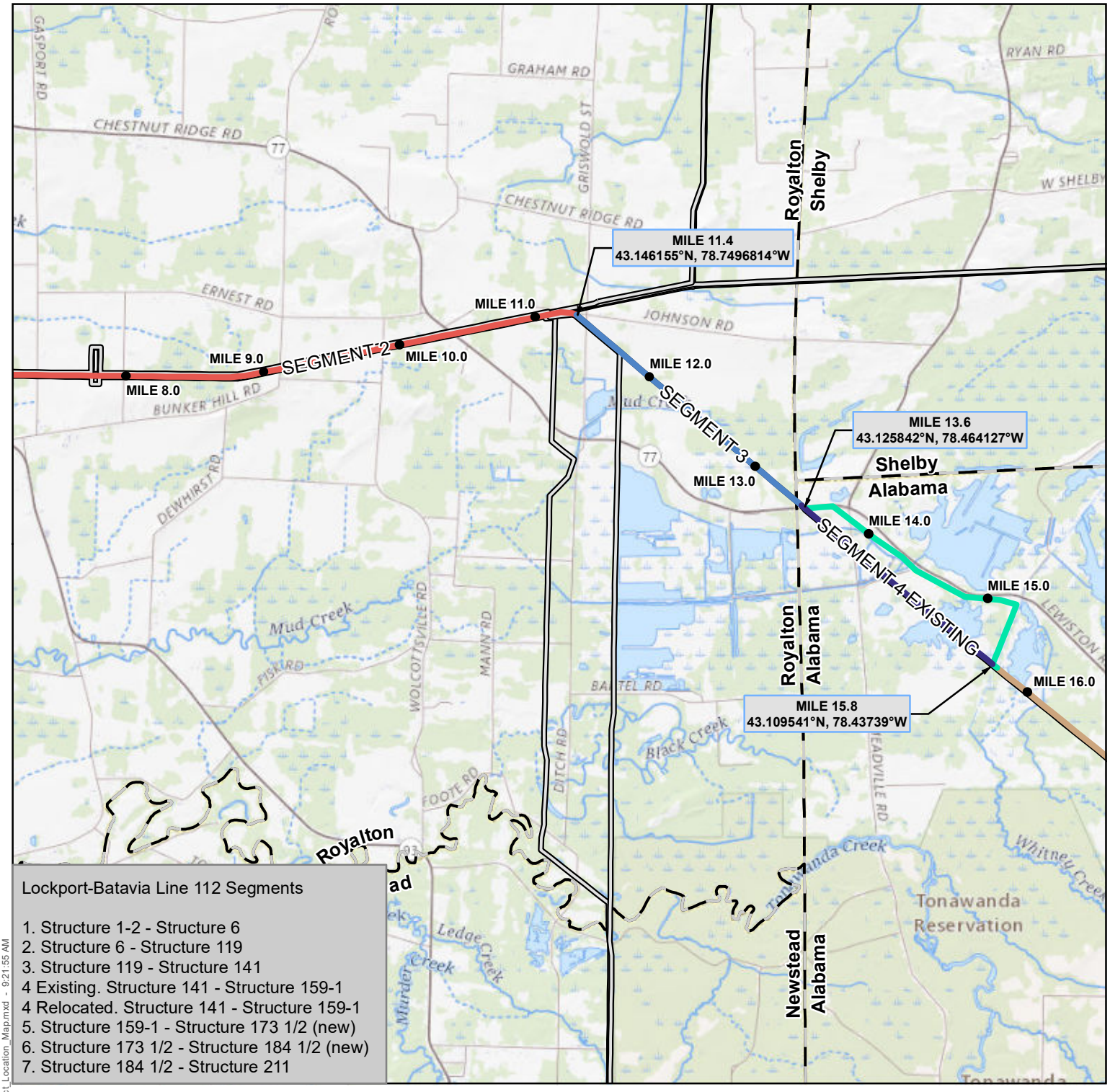

Lockport-Batavia Line 112 Segments

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Project USGS Quad(s):
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Gasport
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Akron
Oakfield

Lockport-Batavia Line 112 Transmission Line

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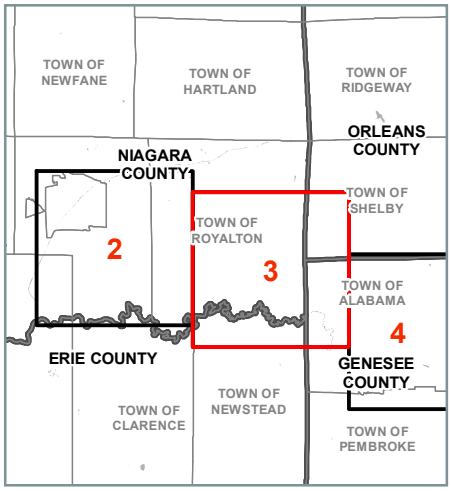
Author: MFA

Revision Date: 11/14/2022



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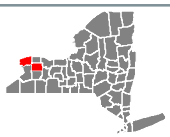

0 0.5 1 Miles

FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT – BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.1-1
PROJECT LOCUS MAP

SHEET 3 OF 4

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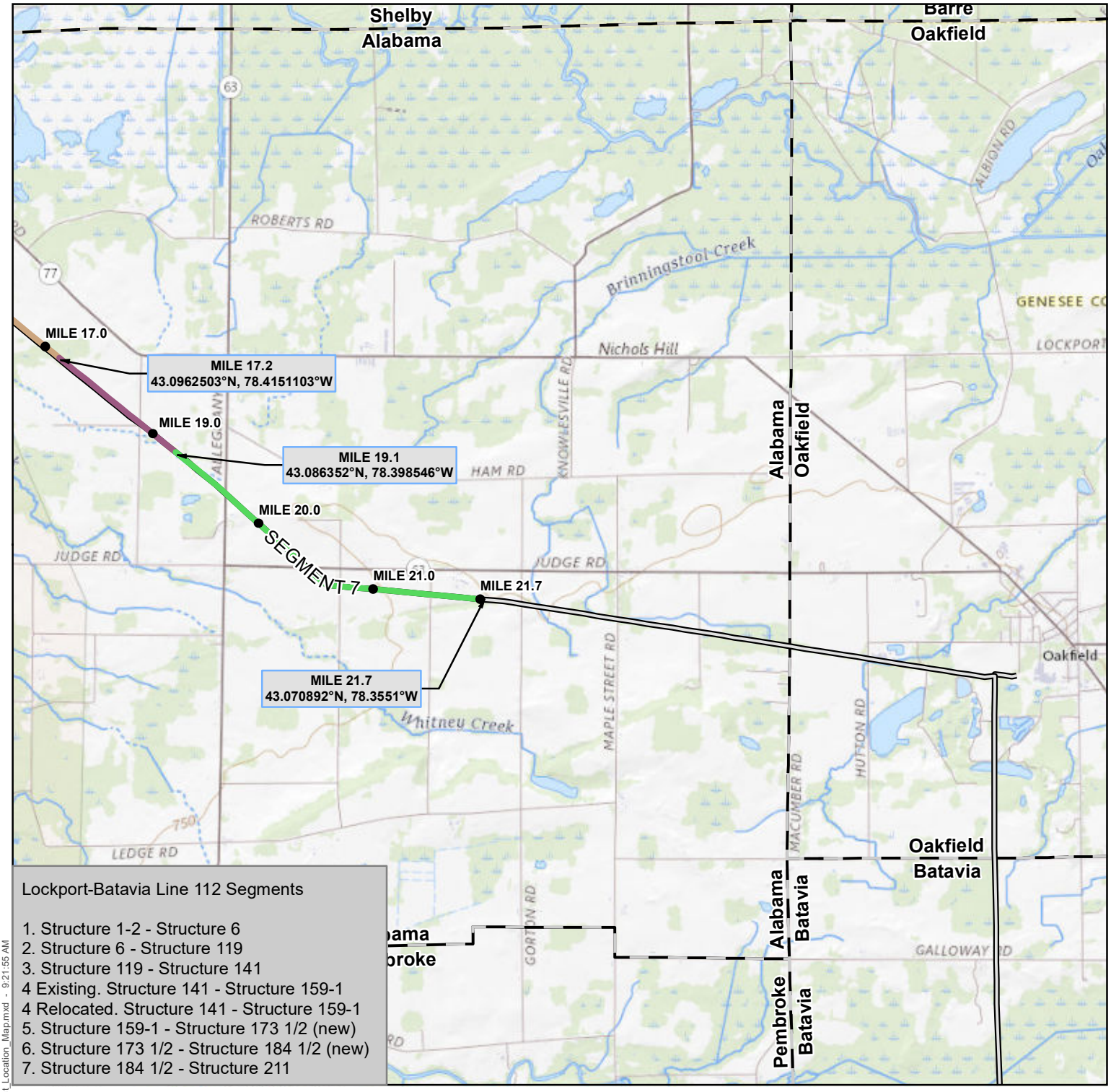

Lockport-Batavia Line 112 Segments

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6. Structure 173 1/2 - Structure 184 1/2 (new)
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Project USGS Quad(s):
Lockport
Gasport
Medina
Akron
Oakfield

Lockport-Batavia Line 112 Transmission Line

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Data Sources:
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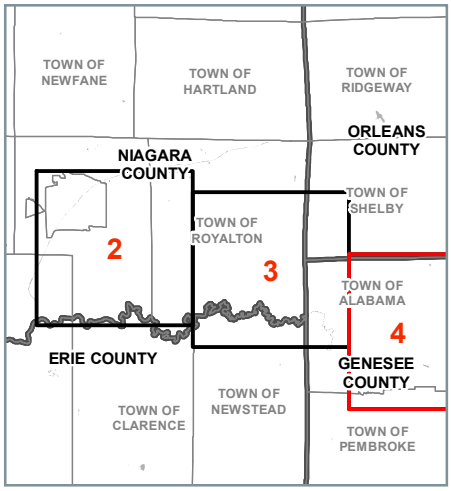
Author: MFA | Revision Date: 11/14/2022



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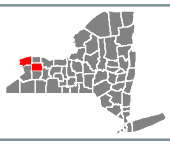


0 0.5 1 Miles

FISHER ASSOCIATES

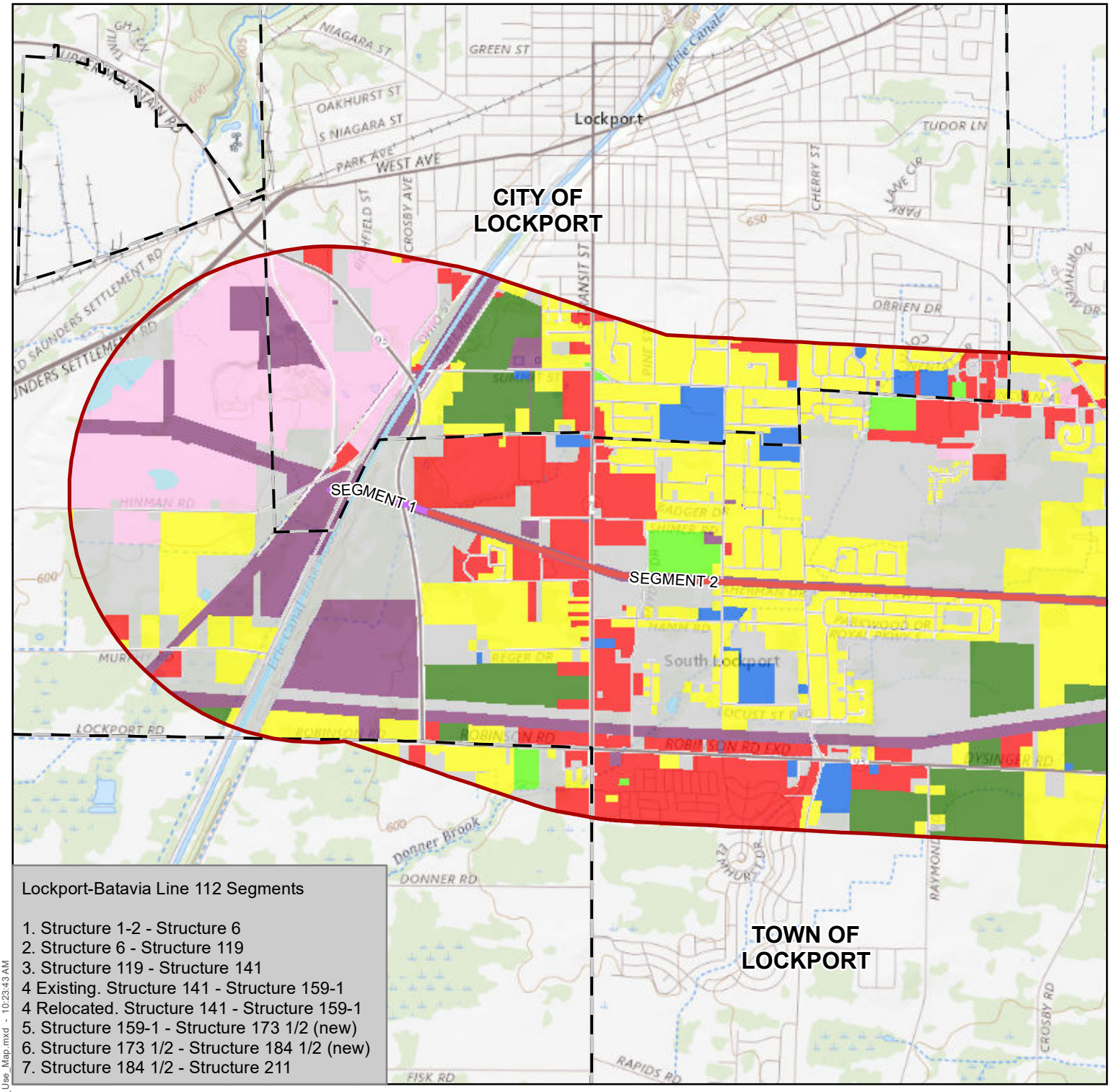
NATIONAL GRID
LOCKPORT – BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.1-1
PROJECT LOCUS MAP

SHEET 4 OF 4

H:\Projects\190176-00-NG_Batavia_Art_7\GIS\NG_Lockport_Batavia_4.1-1_Project_Location_Map.mxd - 9:21:55 AM

FIGURE 4.3-1 LAND USE WITHIN 1 MILE OF THE PROJECT ROW

(SHEETS 1 TO 6)



Lockport-Batavia Line 112 Segments

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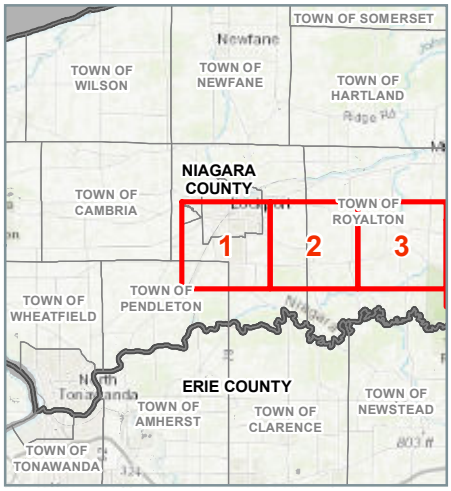
7. Structure 184 1/2 - Structure 211

Project USGS Quad(s):
Lockport
Gasport
Medina
Akron
Oakfield

Existing Land Use
- Agricultural
- Residential
- Vacant Land
- Commercial
- Recreation and Entertainment
- Community Services
- Industrial
- Public Services
- Wild, Forested, Conservation Lands and Public Parks
- Water
- 1 Mile Route Buffer
- Municipal Boundary

Data Sources:
United States Geological Survey 24k Topo Quad Map - usgs.gov

Author: MFA | Revision Date: 8/17/2021



Center of Project Study Limits:
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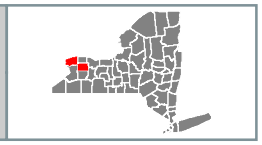

0 1,500 3,000 Feet

FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT – BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.3-1
LAND USE WITHIN 1 MILE OF THE PROJECT RIGHT OF WAY
SHEET 1 OF 6

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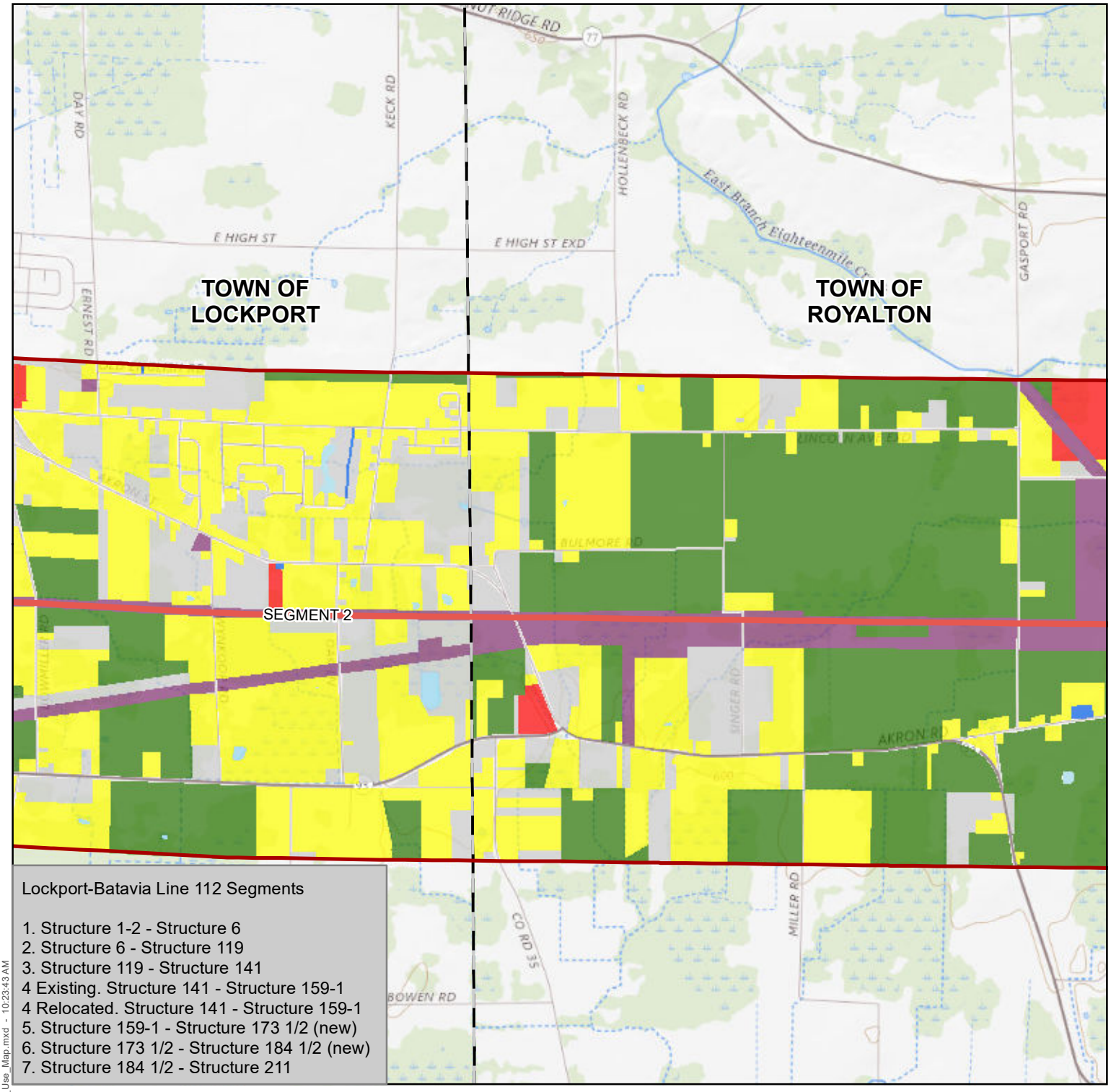

Lockport-Batavia Line 112 Segments

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Project USGS Quad(s):
Lockport
Gasport
Medina
Akron
Oakfield

Existing Land Use
- Agricultural
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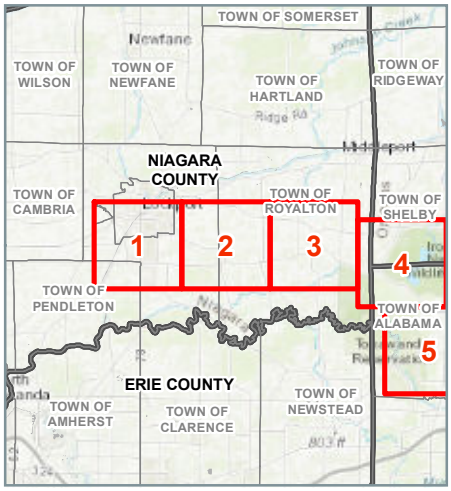
- Commercial
- Recreation and Entertainment
- Community Services
- Industrial
- Public Services
- Wild, Forested, Conservation Lands and Public Parks
- Water
- 1 Mile Route Buffer
- Municipal Boundary

Data Sources:
United States Geological Survey 24k Topo Quad Map - usgs.gov

Author: MFA | Revision Date: 8/17/2021



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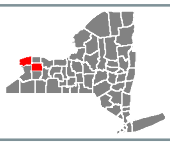
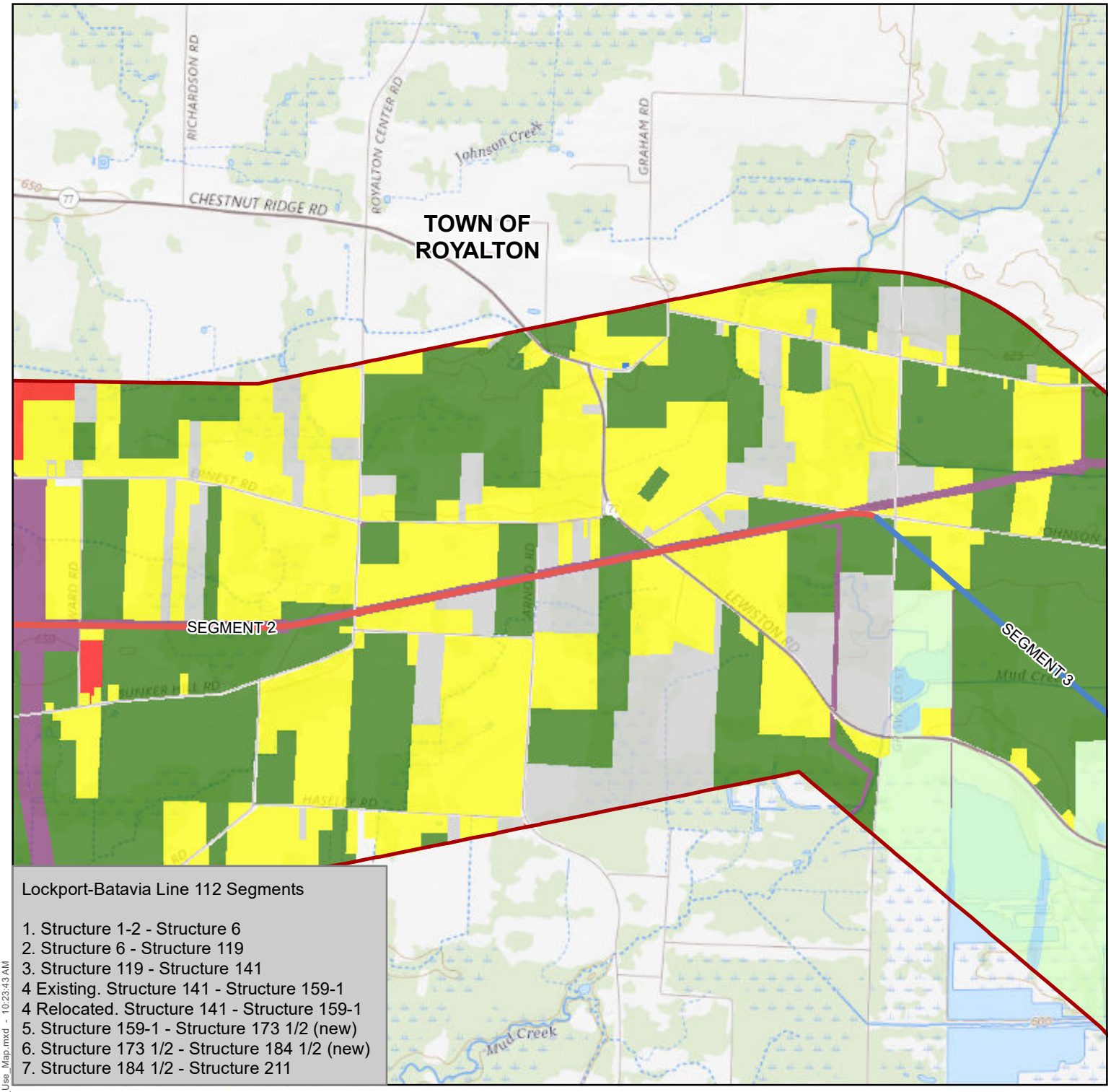


0 1,500 3,000 Feet

FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT – BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.3-1
LAND USE WITHIN 1 MILE OF THE PROJECT RIGHT OF WAY
SHEET 2 OF 6

H:\Projects\190176-00-NG_Batavia_Art_7\GIS\NG_Lockport_Batavia_4.3-1_Land_Use_Map.mxd - 10:23:43 AM



Lockport-Batavia Line 112 Segments

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Project USGS Quad(s):
Lockport
Gasport
Medina
Akron
Oakfield

Existing Land Use
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- 1 Mile Route Buffer
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Data Sources:
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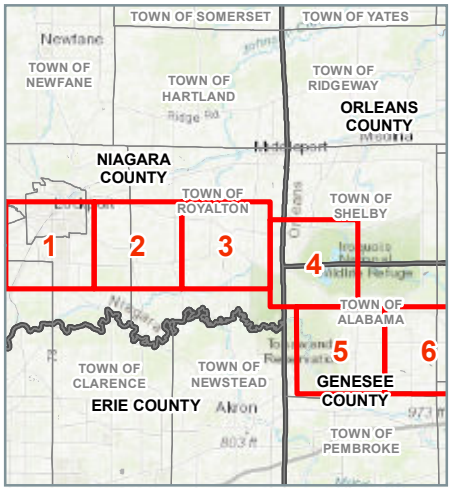

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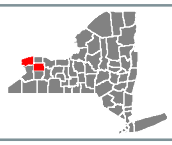

0 1,500 3,000 Feet

FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT – BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.3-1
LAND USE WITHIN 1 MILE OF THE PROJECT RIGHT OF WAY
SHEET 3 OF 6

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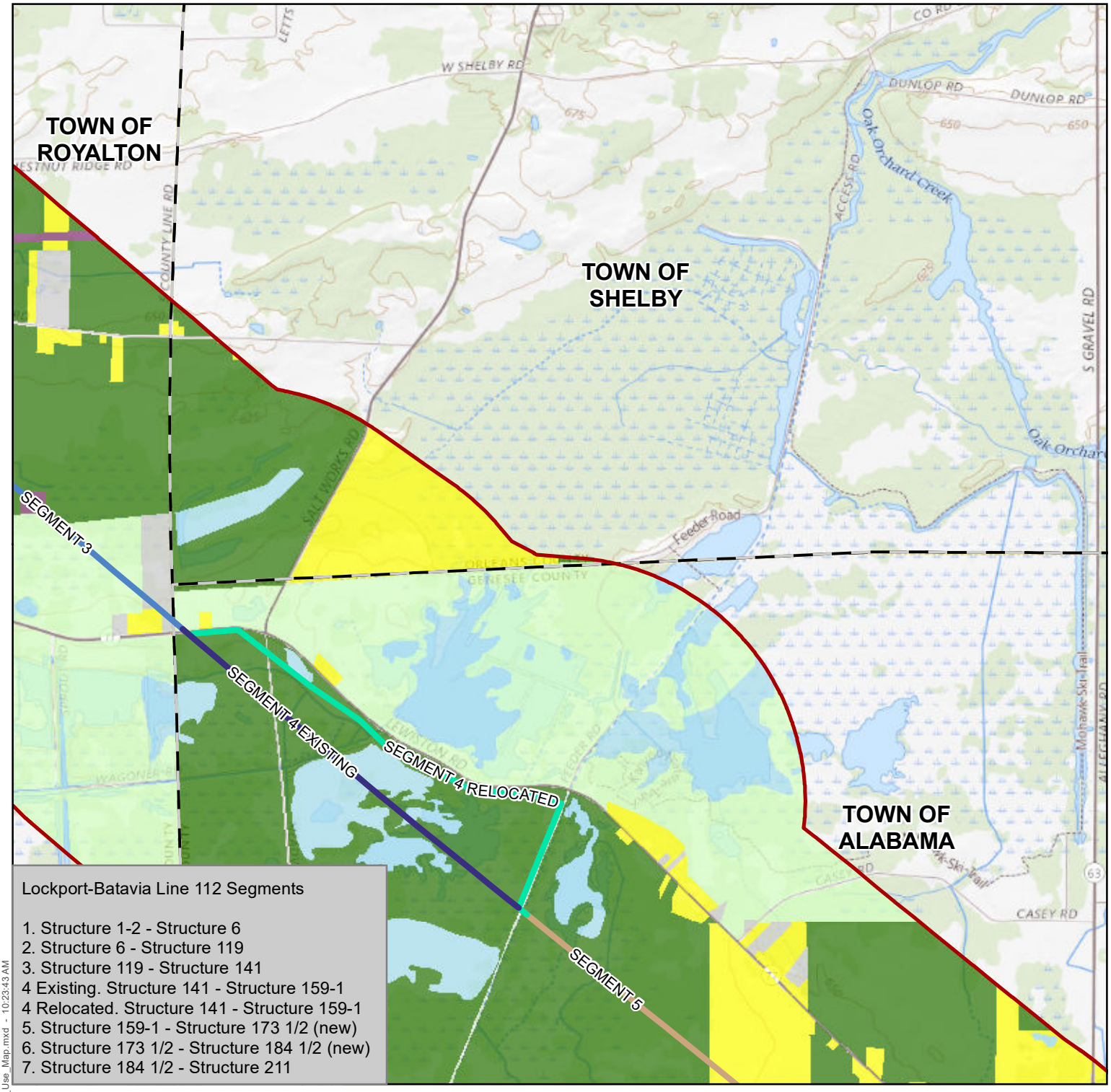

Lockport-Batavia Line 112 Segments

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Project USGS Quad(s):
Lockport
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Existing Land Use
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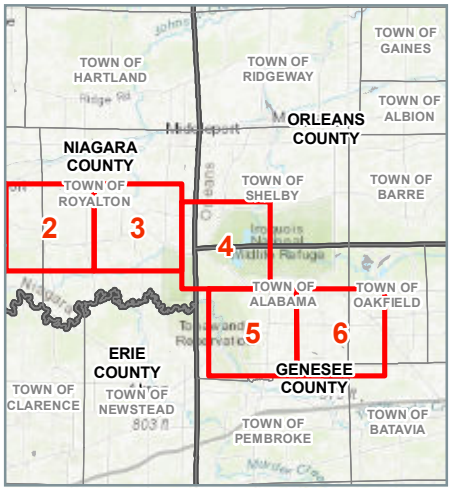

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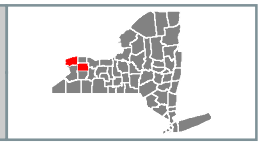

0 1,500 3,000 Feet

FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT – BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.3-1
LAND USE WITHIN 1 MILE OF THE PROJECT RIGHT OF WAY
SHEET 4 OF 6

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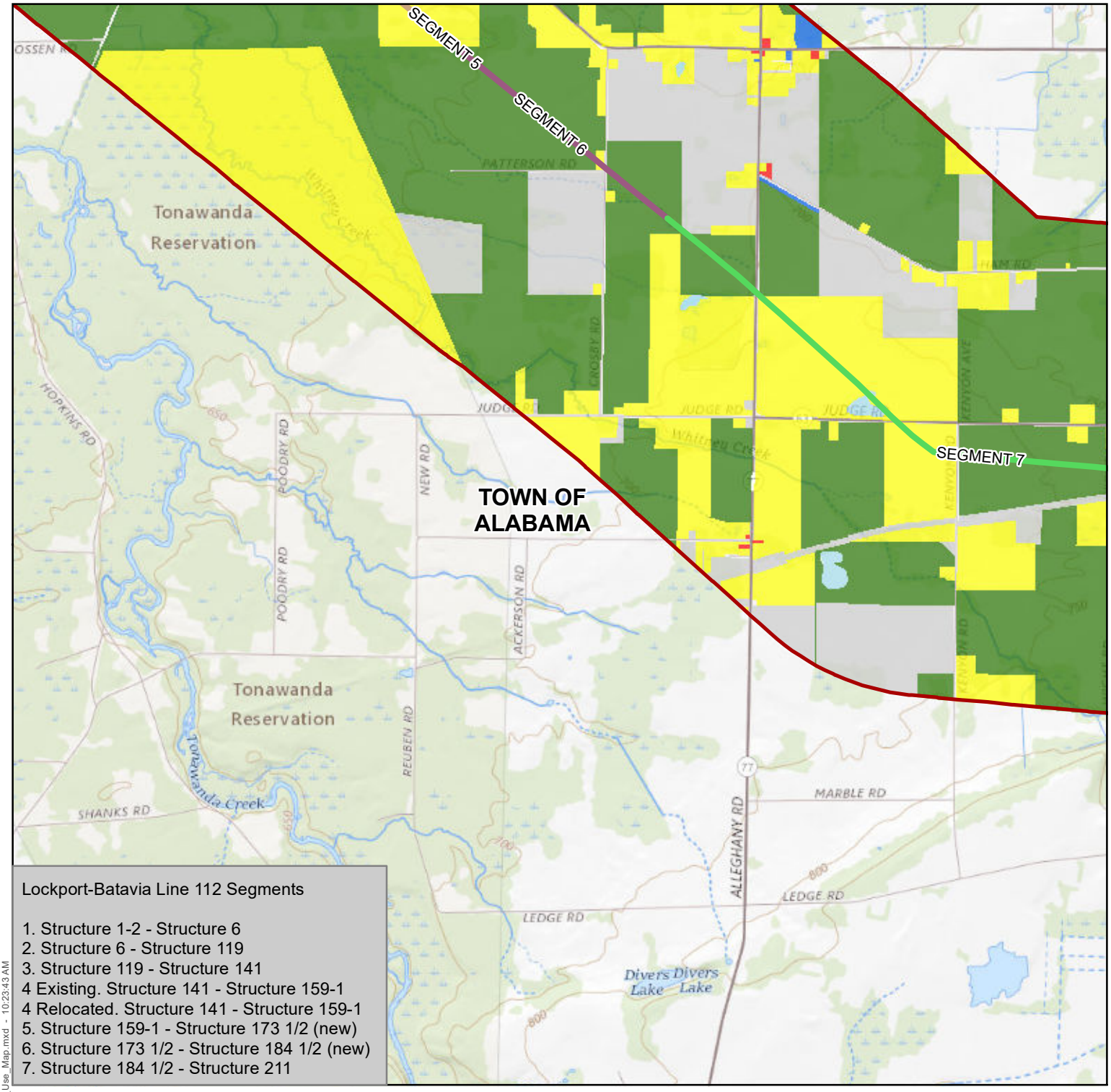

Lockport-Batavia Line 112 Segments

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Project USGS Quad(s):
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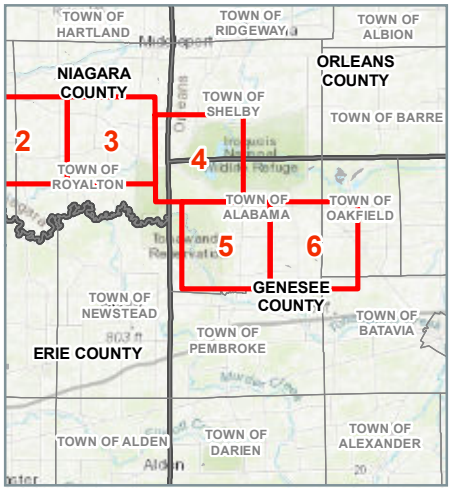
Author: MFA | Revision Date: 8/17/2021



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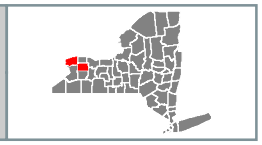

0 1,500 3,000 Feet

FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT – BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.3-1
LAND USE WITHIN 1 MILE OF THE PROJECT RIGHT OF WAY
SHEET 5 OF 6

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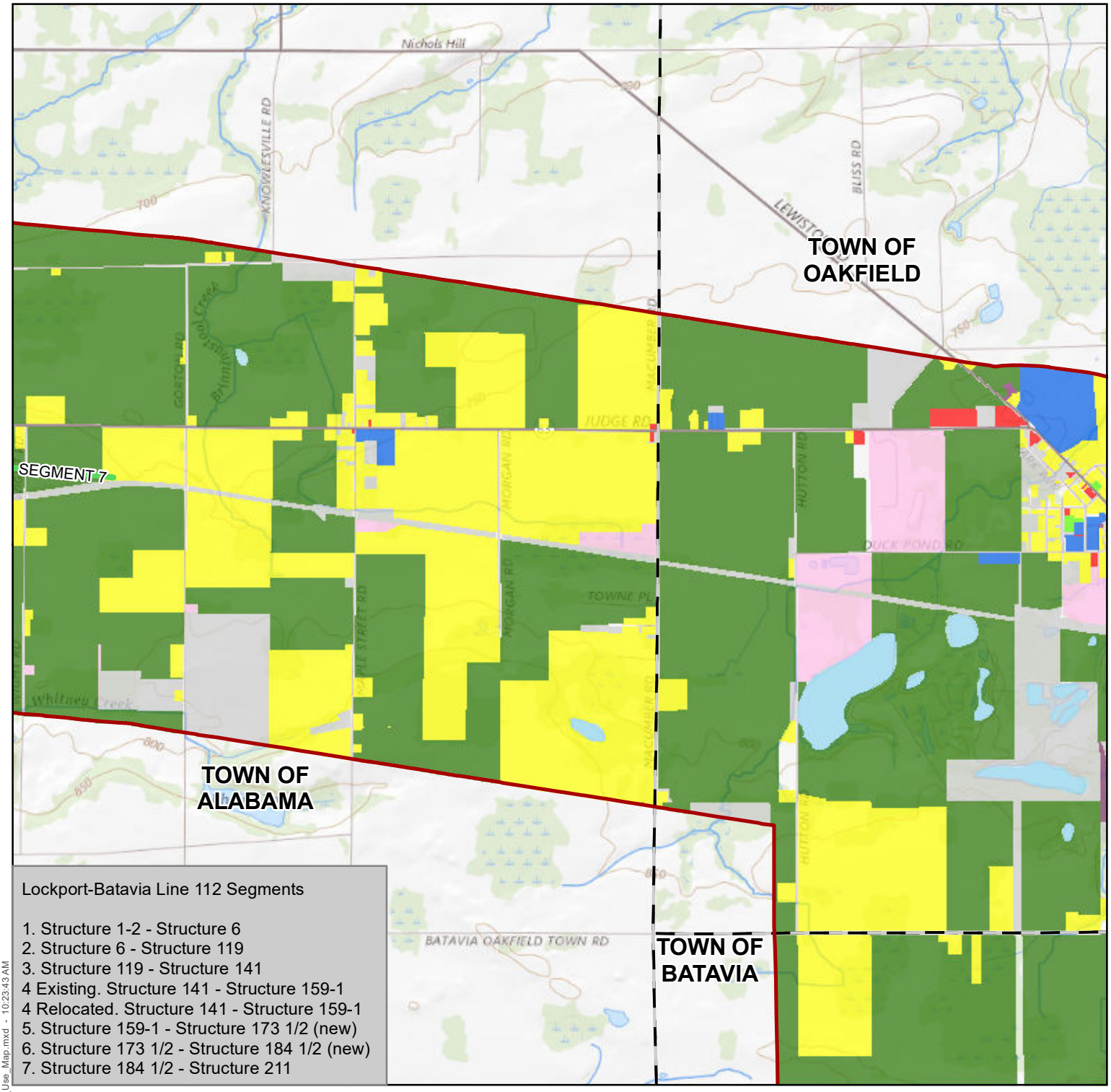

Lockport-Batavia Line 112 Segments

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Project USGS Quad(s):
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Data Sources:
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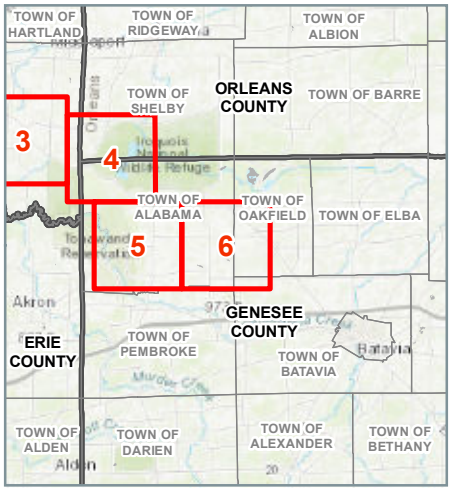
Author: MFA | Revision Date: 8/17/2021



Center of Project Study Limits:
43.139915 N, 78.54395 W
North American Datum 1983

0 1,500 3,000 Feet

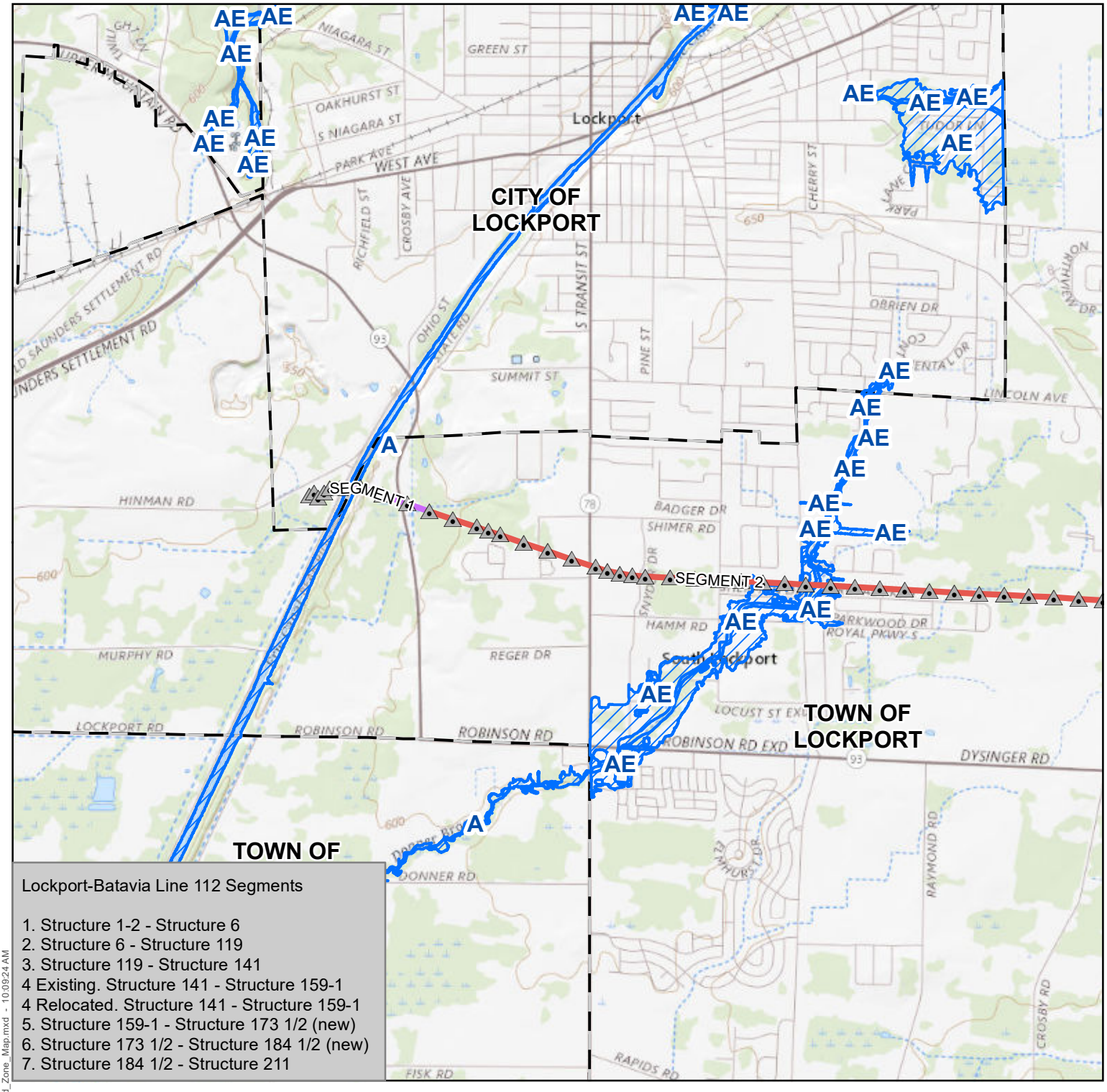
FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT – BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.3-1
LAND USE WITHIN 1 MILE OF THE PROJECT RIGHT OF WAY
SHEET 6 OF 6

H:\Projects\190176-00-NG_Batavia_Art_7\GIS\NG_Lockport_Batavia_4.3-1_Land_Use_Map.mxd - 10:23:43 AM

FIGURE 4.3-2 FEMA 100-YEAR FLOOD ZONES CROSSED BY THE PROJECT

(SHEETS 1 TO 6)



Lockport-Batavia Line 112 Segments

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6. Structure 173 1/2 - Structure 184 1/2 (new)
7. Structure 184 1/2 - Structure 211

Project USGS Quad(s):

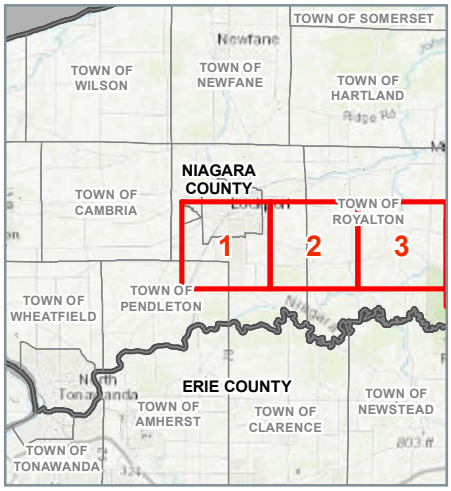
Niagara (HUC 04120104)
Oak Orchard - Twelvemile (HUC 04130001)

Existing Structure
FEMA Flood Hazard Area (100-year Flood Plain)
Municipal Boundary

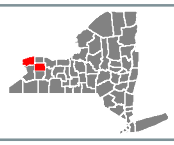
Data Sources:

United States Geological Survey 24k Topo Quad Map - usgs.gov

Author: MFA | Revision Date: 8/17/2021



Center of Project Study Limits:
43.139915 N, 78.54395 W
North American Datum 1983



0 1,500 3,000 Feet

FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT – BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.3-2
FEMA 100-YEAR FLOOD ZONES CROSSED BY THE PROJECT
SHEET 1 OF 6

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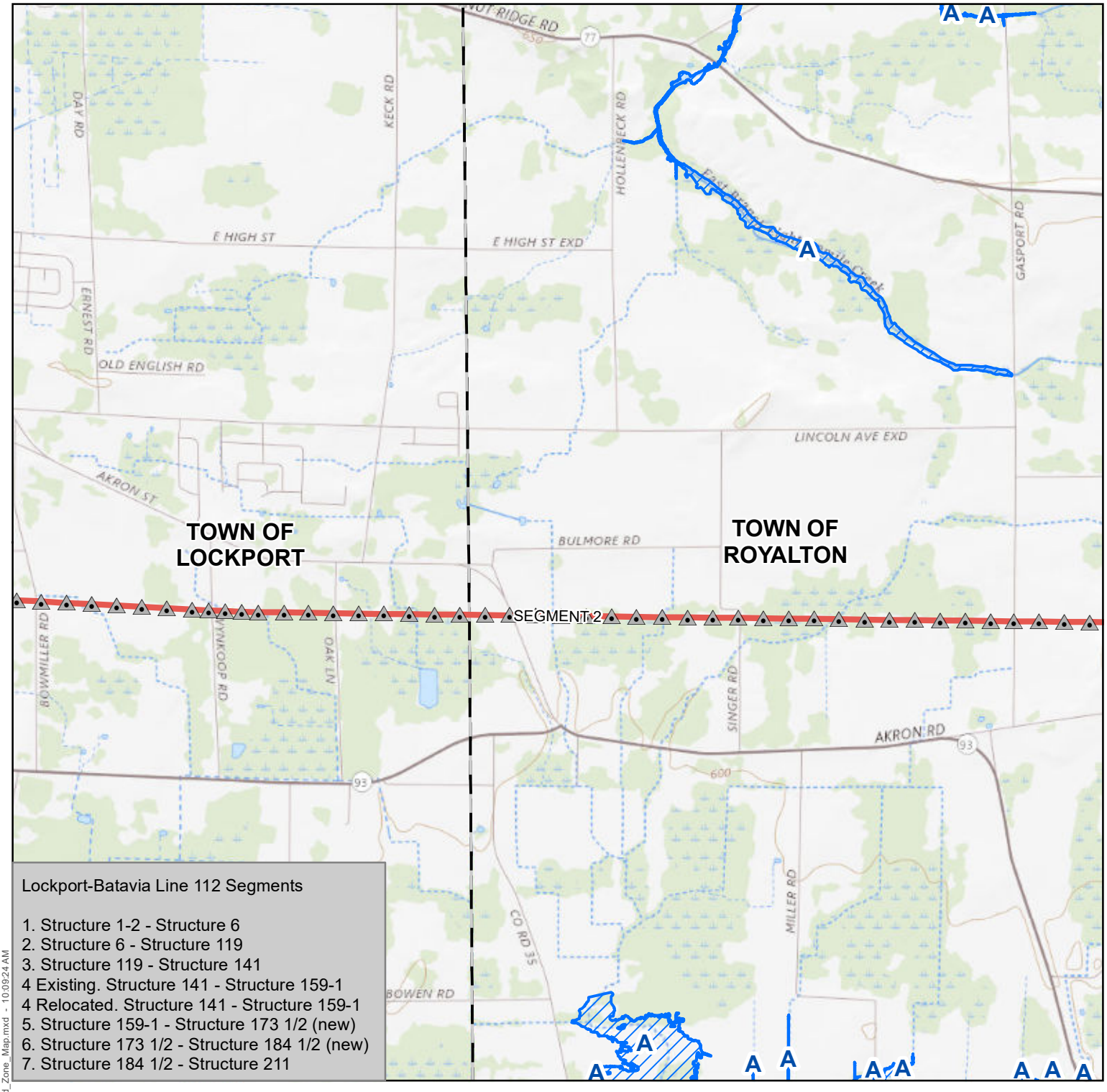


Lockport-Batavia Line 112 Segments

1. Structure 1-2 - Structure 6
2. Structure 6 - Structure 119
3. Structure 119 - Structure 141
4 Existing. Structure 141 - Structure 159-1
4 Relocated. Structure 141 - Structure 159-1
5. Structure 159-1 - Structure 173 1/2 (new)
6. Structure 173 1/2 - Structure 184 1/2 (new)
7. Structure 184 1/2 - Structure 211

Project USGS Quad(s):

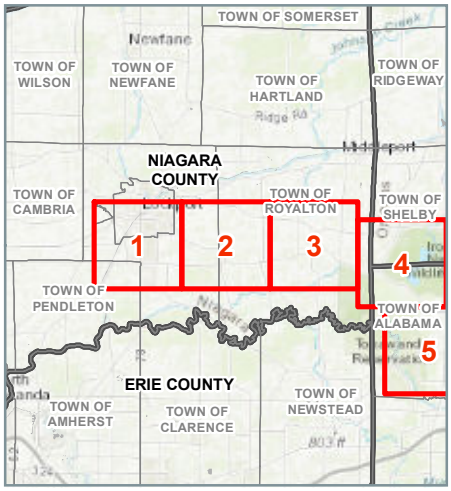
Niagara (HUC 04120104)
Oak Orchard - Twelvemile (HUC 04130001)

Existing Structure
FEMA Flood Hazard Area (100-year Flood Plain)
Municipal Boundary

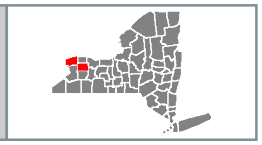
Data Sources:

United States Geological Survey 24k Topo Quad Map - usgs.gov

Author: MFA | Revision Date: 8/17/2021



Center of Project Study Limits:
43.139915 N, 78.54395 W
North American Datum 1983



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FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT – BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.3-2
FEMA 100-YEAR FLOOD ZONES CROSSED BY THE PROJECT
SHEET 2 OF 6

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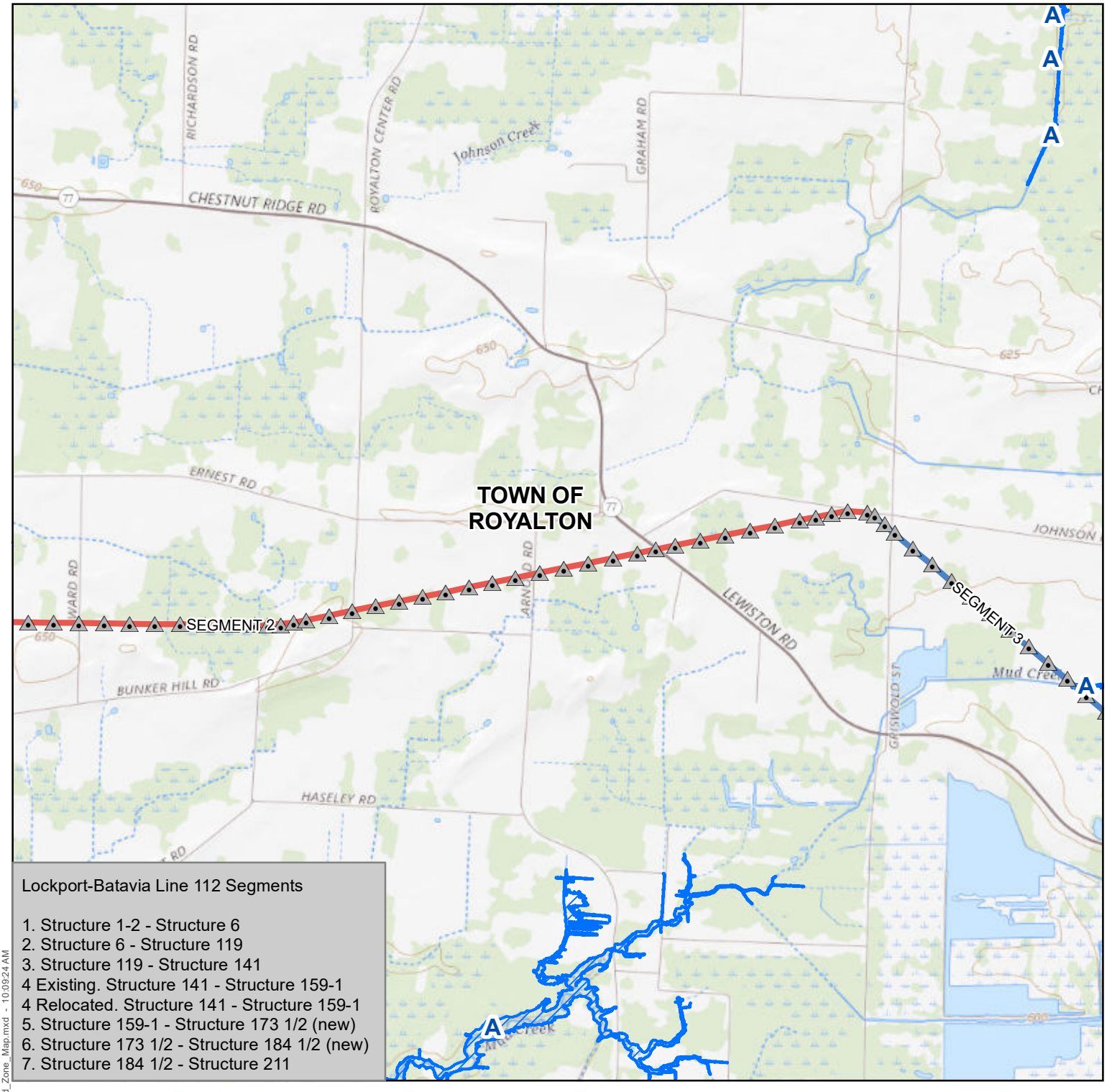

Lockport-Batavia Line 112 Segments

1. Structure 1-2 - Structure 6
2. Structure 6 - Structure 119
3. Structure 119 - Structure 141
4 Existing. Structure 141 - Structure 159-1
4 Relocated. Structure 141 - Structure 159-1
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6. Structure 173 1/2 - Structure 184 1/2 (new)
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Project USGS Quad(s):

Niagara (HUC 04120104)
Oak Orchard - Twelvemile (HUC 04130001)

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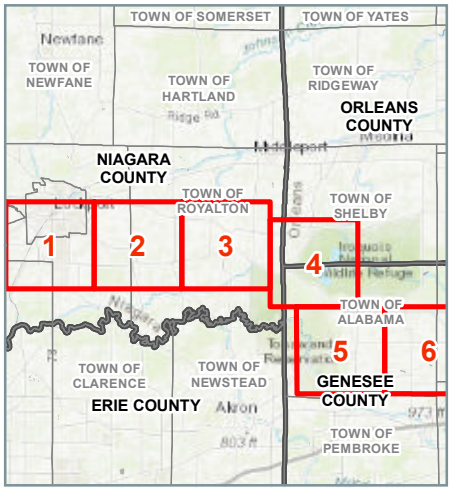

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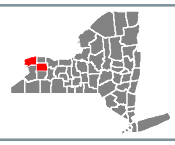

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FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT – BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.3-2
FEMA 100-YEAR FLOOD ZONES CROSSED BY THE PROJECT
SHEET 3 OF 6

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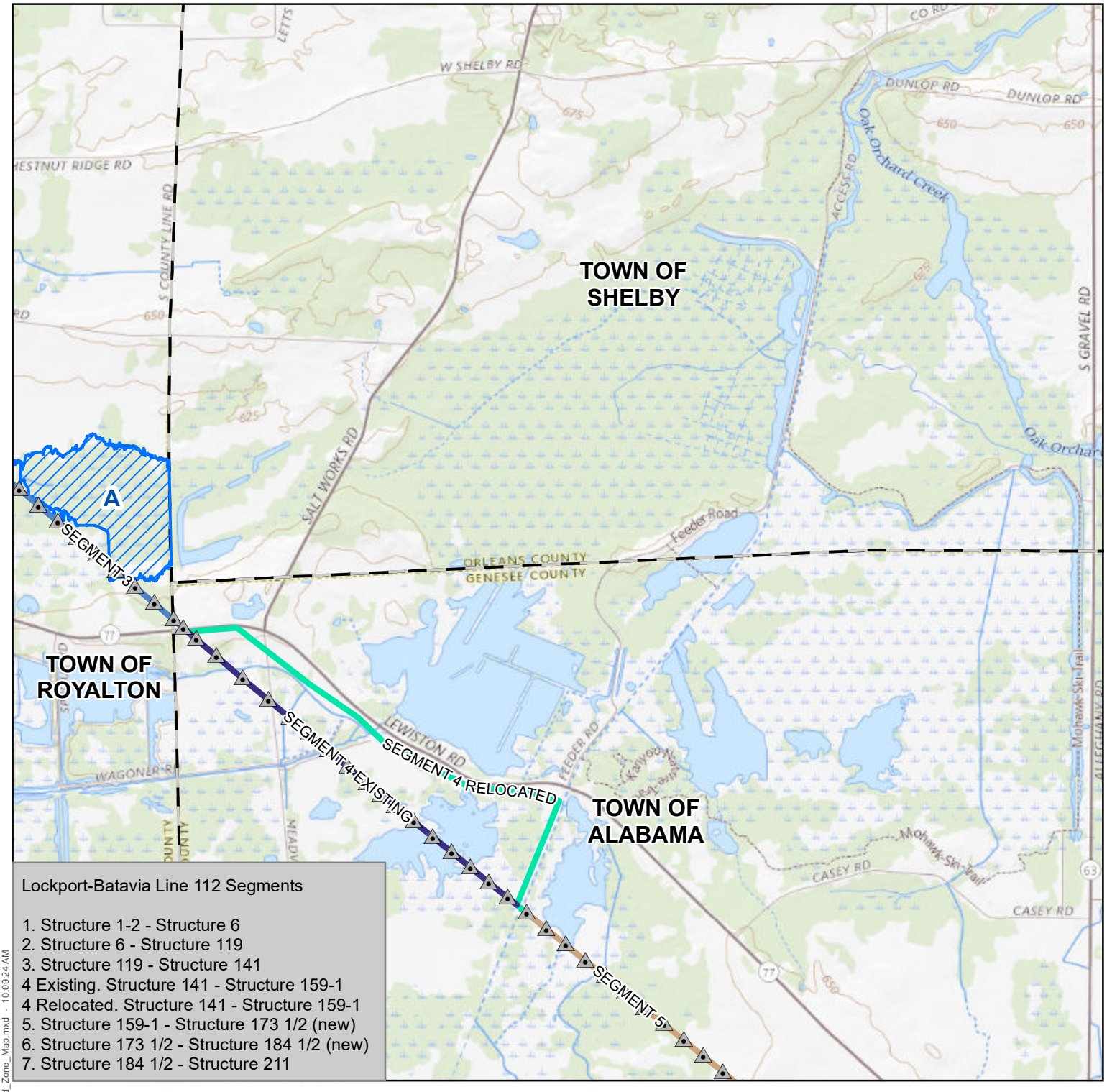

Lockport-Batavia Line 112 Segments

1. Structure 1-2 - Structure 6
2. Structure 6 - Structure 119
3. Structure 119 - Structure 141
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4 Relocated. Structure 141 - Structure 159-1
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Project USGS Quad(s):

Niagara (HUC 04120104)
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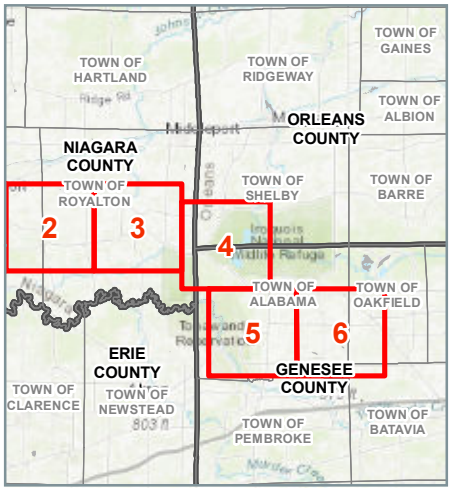

Center of Project Study Limits:
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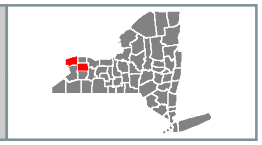

0 1,500 3,000 Feet

FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT – BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.3-2
FEMA 100-YEAR FLOOD ZONES
CROSSED BY THE PROJECT
SHEET 4 OF 6

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Lockport-Batavia Line 112 Segments

1. Structure 1-2 - Structure 6
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4 Relocated. Structure 141 - Structure 159-1
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6. Structure 173 1/2 - Structure 184 1/2 (new)
7. Structure 184 1/2 - Structure 211

Project USGS Quad(s):

Niagara (HUC 04120104)
Oak Orchard - Twelvemile (HUC 04130001)

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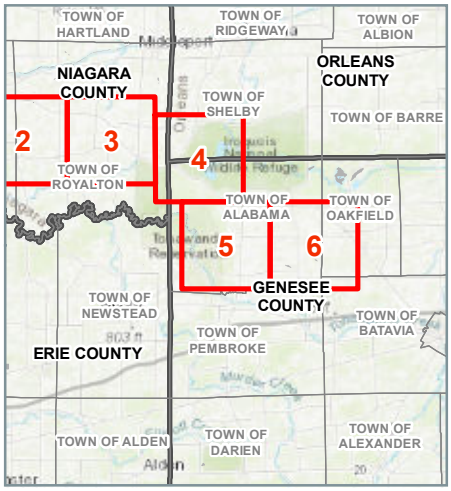
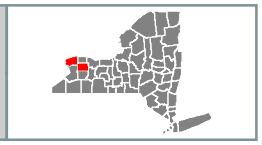
Data Sources:

United States Geological Survey 24k Topo Quad Map - usgs.gov

Author: MFA | Revision Date: 8/17/2021



Center of Project Study Limits:
43.139915 N, 78.54395 W
North American Datum 1983



0 1,500 3,000 Feet

FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT – BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.3-2
FEMA 100-YEAR FLOOD ZONES CROSSED BY THE PROJECT
SHEET 5 OF 6

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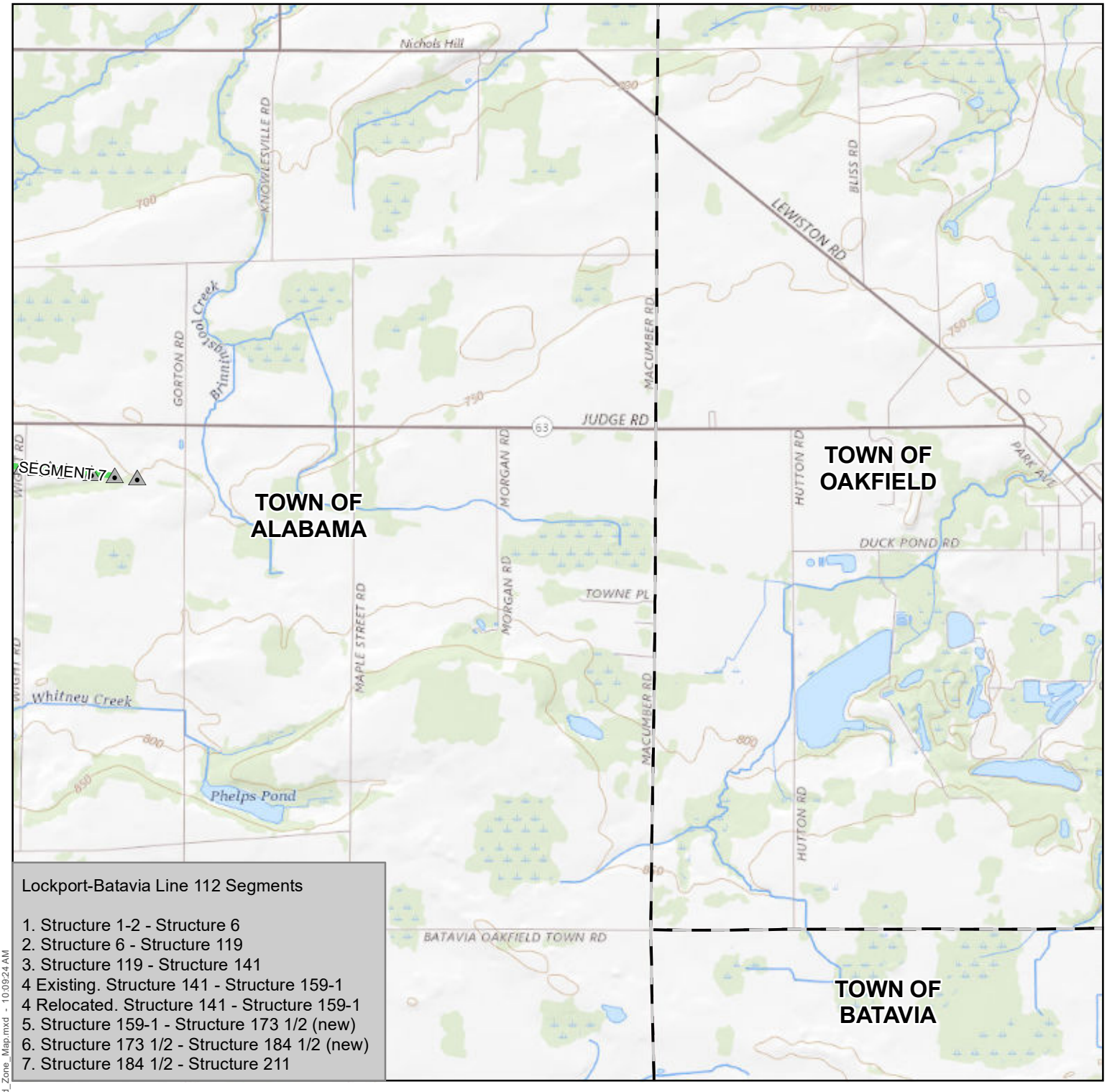

Lockport-Batavia Line 112 Segments

1. Structure 1-2 - Structure 6
2. Structure 6 - Structure 119
3. Structure 119 - Structure 141
4 Existing. Structure 141 - Structure 159-1
4 Relocated. Structure 141 - Structure 159-1
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6. Structure 173 1/2 - Structure 184 1/2 (new)
7. Structure 184 1/2 - Structure 211

Project USGS Quad(s):

Niagara (HUC 04120104)
Oak Orchard - Twelvemile (HUC 04130001)

Existing Structure
FEMA Flood Hazard Area (100-year Flood Plain)
Municipal Boundary

Data Sources:

United States Geological Survey 24k Topo Quad Map - usgs.gov

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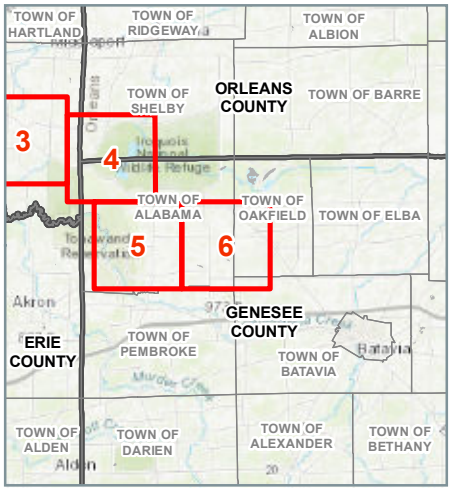

Center of Project Study Limits:
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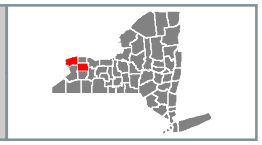

0 1,500 3,000 Feet

FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT – BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.3-2
FEMA 100-YEAR FLOOD ZONES CROSSED BY THE PROJECT
SHEET 6 OF 6

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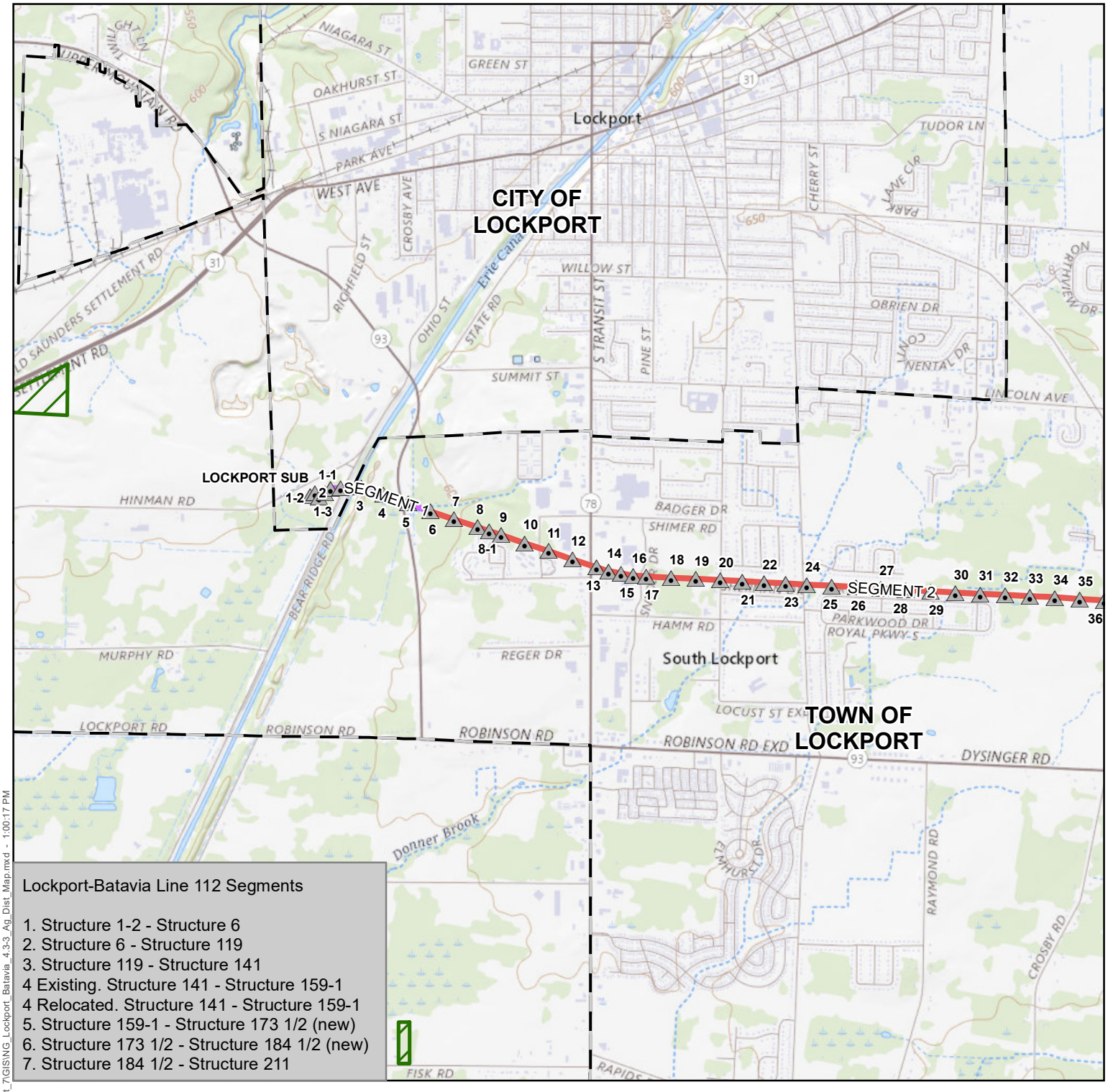
FIGURE 4.3-3 AGRICULTURAL DISTRICTS ALONG THE PROJECT

(SHEETS 1 TO 6)



Lockport-Batavia Line 112 Segments

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2. Structure 6 - Structure 119
3. Structure 119 - Structure 141
4 Existing. Structure 141 - Structure 159-1
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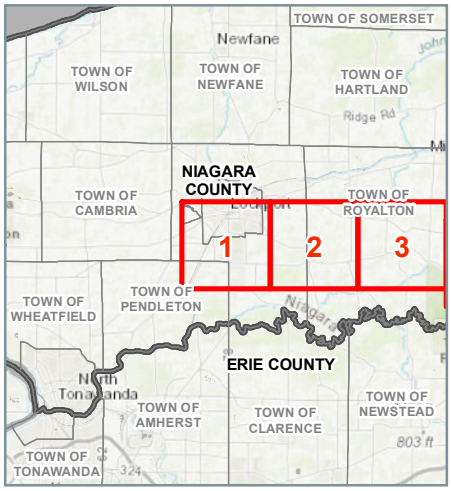
5. Structure 159-1 - Structure 173 1/2 (new)
6. Structure 173 1/2 - Structure 184 1/2 (new)
7. Structure 184 1/2 - Structure 211

Project USGS Quad(s):
Lockport
Gasport
Medina
Akron
Oakfield

- Structures
- Genesee County Agricultural District 1
- Genesee County Agricultural District 2
- Genesee County Agricultural District 4
- Niagara County Agricultural District 7
- Orleans County Agricultural District 1
- Municipal Boundary

Data Sources:
United States Geological Survey 24k Topo Quad Map - usgs.gov

Author: MFA | Revision Date: 8/17/2022



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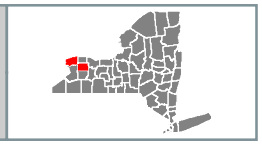
North American Datum 1983



0 1,450 2,900 Feet

FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT-BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.3-3
AGRICULTURAL DISTRICTS ALONG THE PROJECT
SHEET 1 OF 6

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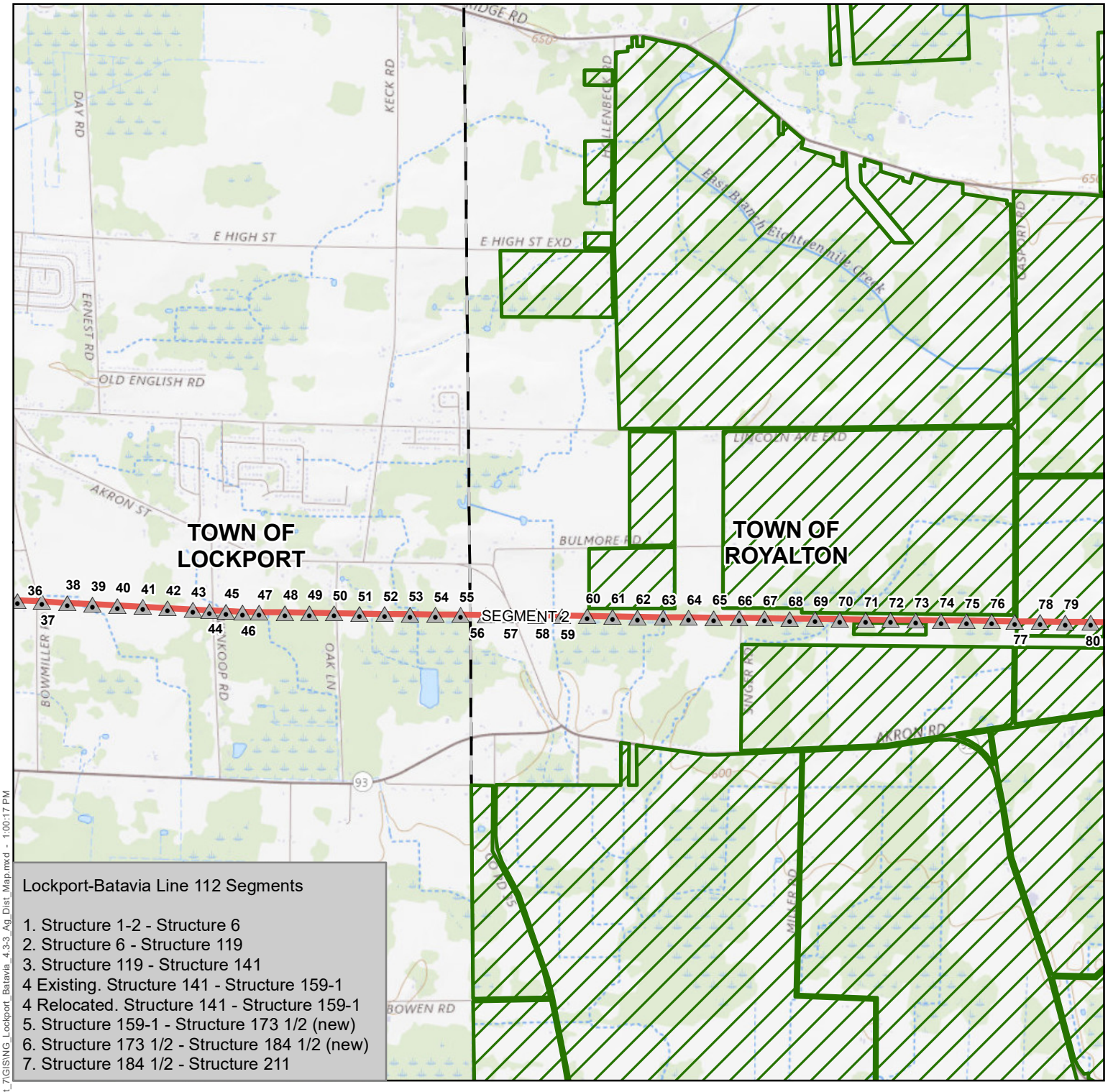

Lockport-Batavia Line 112 Segments

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3. Structure 119 - Structure 141
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4 Relocated. Structure 141 - Structure 159-1
5. Structure 159-1 - Structure 173 1/2 (new)
6. Structure 173 1/2 - Structure 184 1/2 (new)
7. Structure 184 1/2 - Structure 211

Project USGS Quad(s):
Lockport
Gasport
Medina
Akron
Oakfield

- Structures
- Genesee County Agricultural District 1
- Genesee County Agricultural District 2
- Genesee County Agricultural District 4
- Niagara County Agricultural District 7
- Orleans County Agricultural District 1
- Municipal Boundary

Data Sources:
United States Geological Survey 24k Topo Quad Map - usgs.gov

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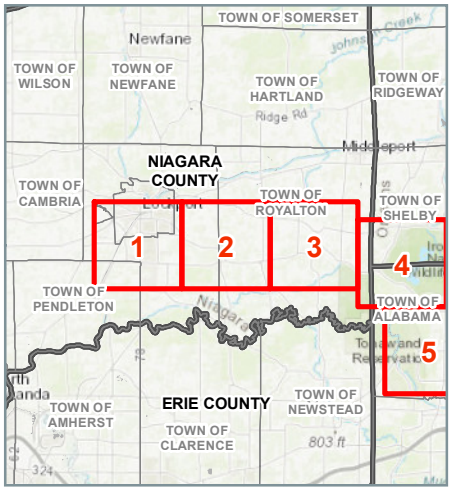

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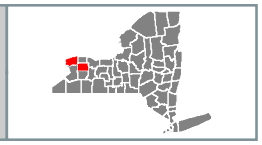

0 1,450 2,900 Feet

FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT-BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.3-3
AGRICULTURAL DISTRICTS ALONG THE PROJECT

SHEET 2 OF 6

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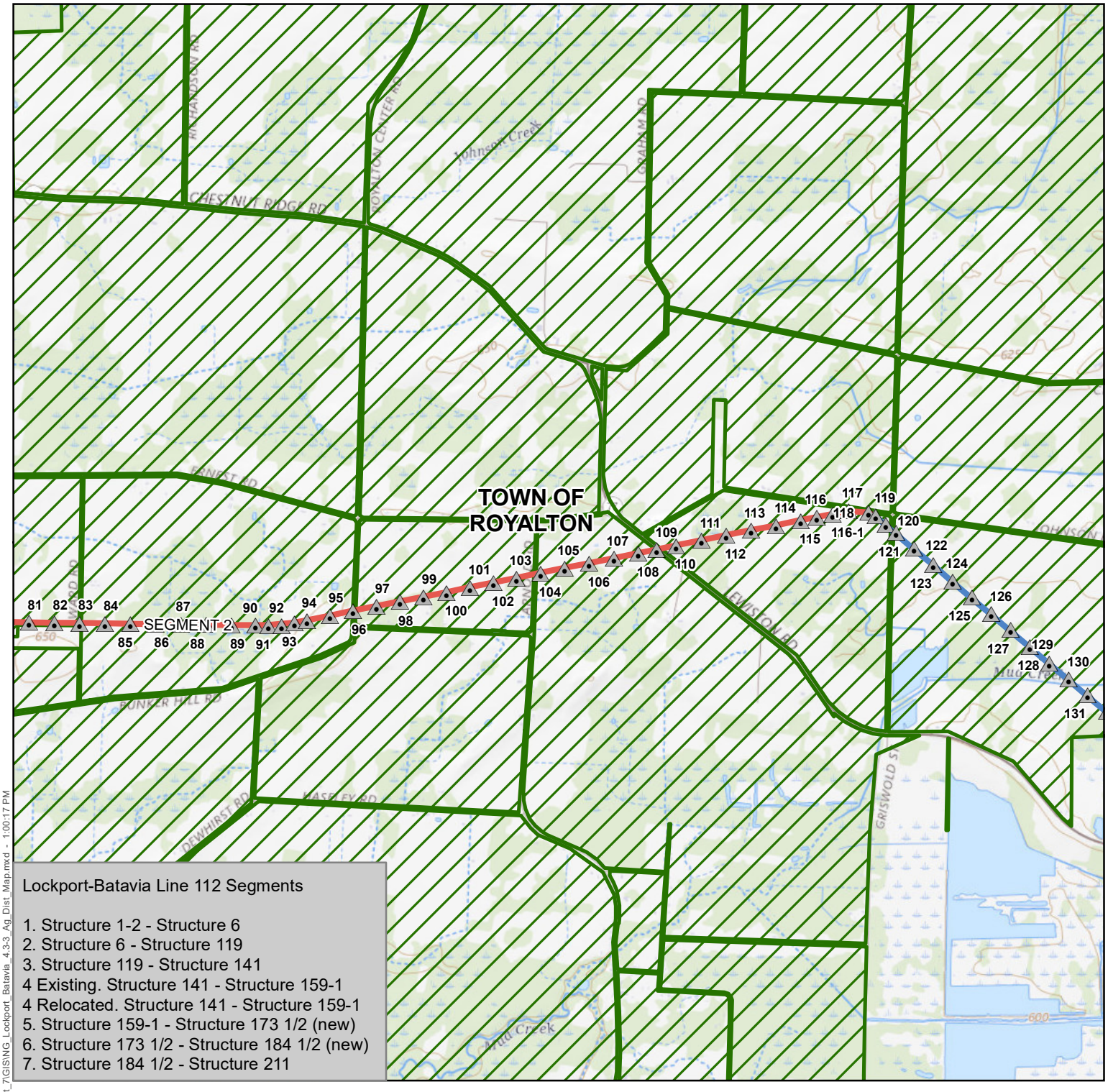

Lockport-Batavia Line 112 Segments

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Project USGS Quad(s):
Lockport
Gasport
Medina
Akron
Oakfield

Structures
Genesee County Agricultural District 1
Genesee County Agricultural District 2
Genesee County Agricultural District 4
Niagara County Agricultural District 7
Orleans County Agricultural District 1
Municipal Boundary

Data Sources:
United States Geological Survey 24k Topo Quad Map - usgs.gov

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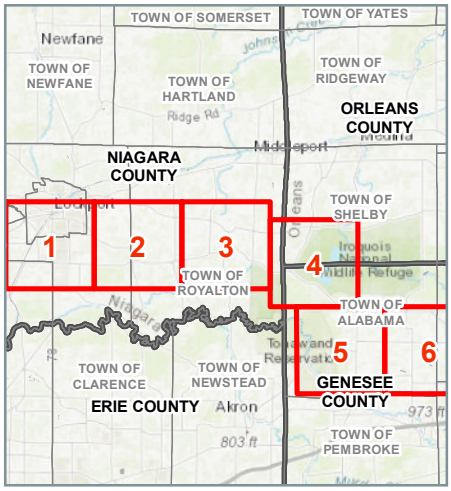
Revision Date: 8/17/2022



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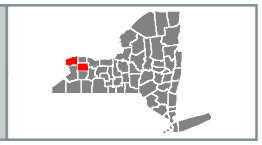

0 1,450 2,900 Feet

FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT-BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.3-3
AGRICULTURAL DISTRICTS ALONG THE PROJECT

SHEET 3 OF 6

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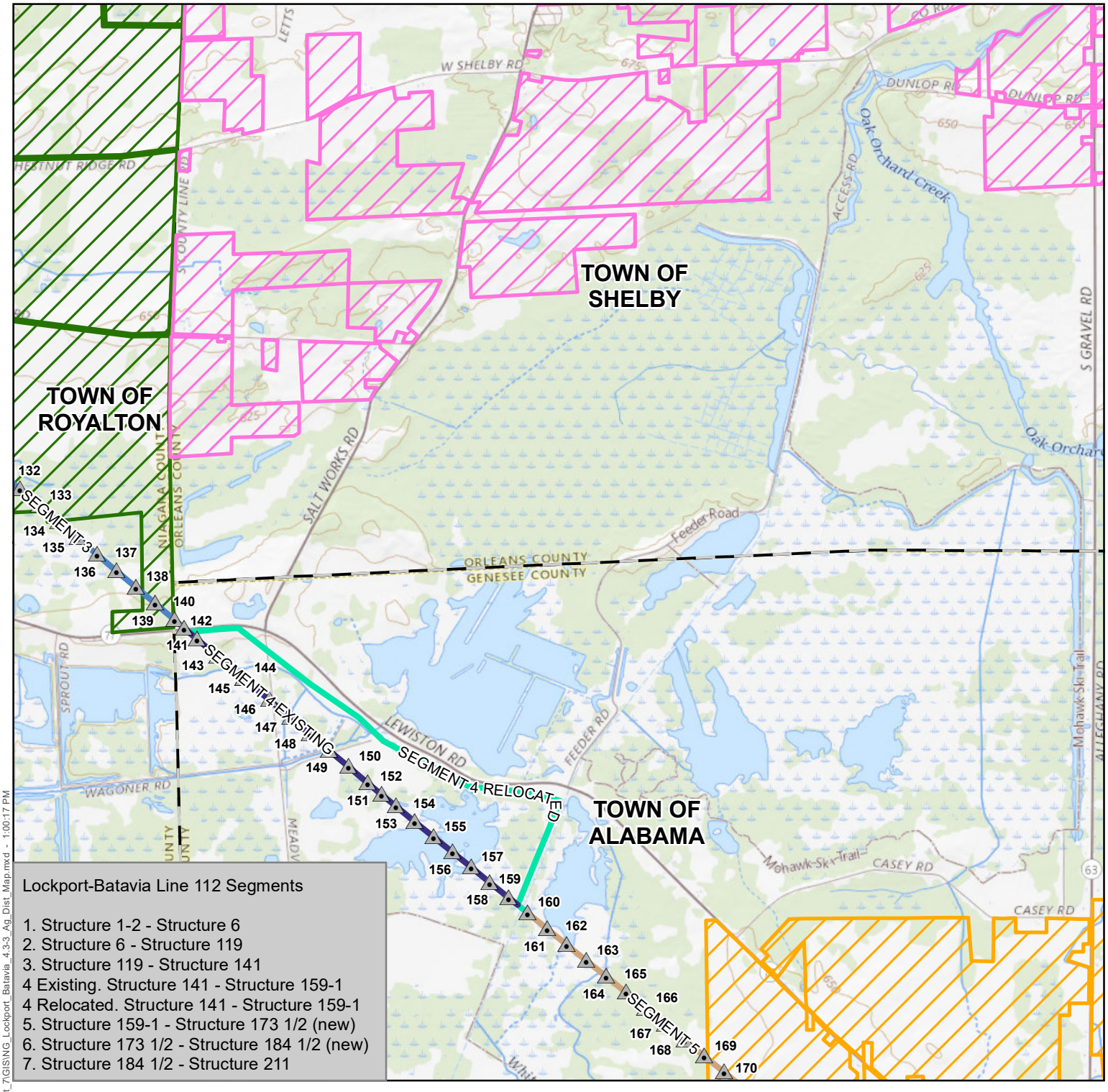

Lockport-Batavia Line 112 Segments

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Project USGS Quad(s):
Lockport
Gasport
Medina
Akron
Oakfield

- Structures
- Genesee County Agricultural District 1
- Genesee County Agricultural District 2
- Genesee County Agricultural District 4
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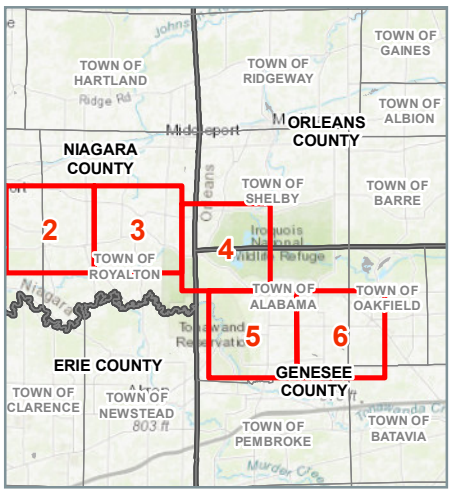
- Orleans County Agricultural District 1
- Municipal Boundary

Data Sources:
United States Geological Survey 24k Topo Quad Map - usgs.gov

Author: MFA | Revision Date: 8/17/2022



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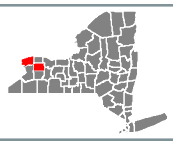

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FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT-BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.3-3
AGRICULTURAL DISTRICTS ALONG THE PROJECT

SHEET 4 OF 6

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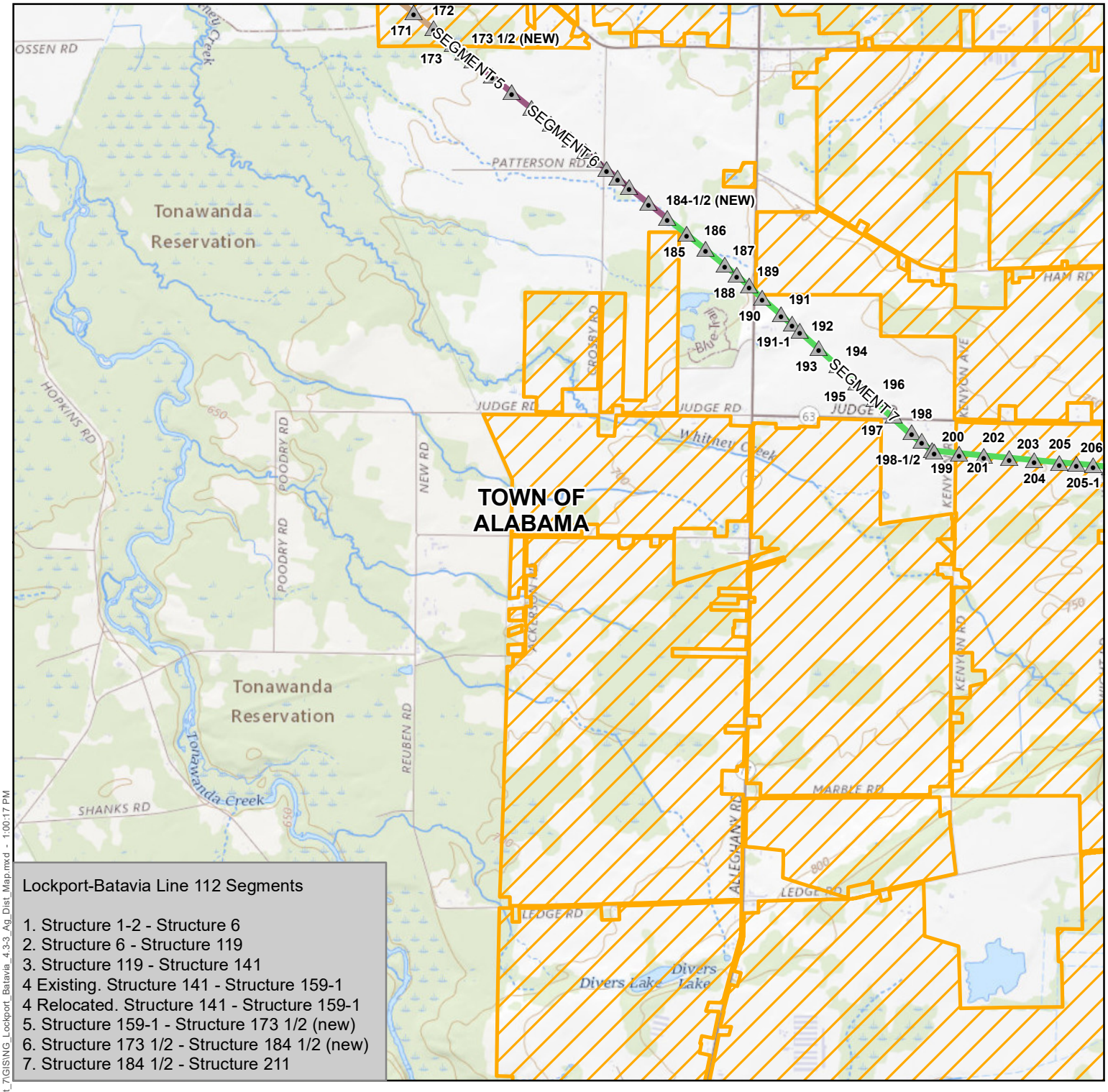

Lockport-Batavia Line 112 Segments

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Project USGS Quad(s):
Lockport
Gasport
Medina
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Oakfield

- Structures
- Genesee County Agricultural District 1
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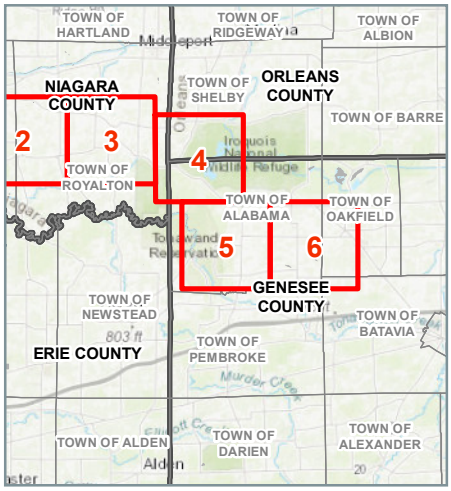

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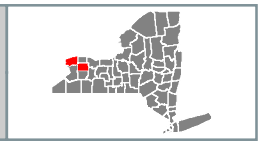

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FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT-BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.3-3
AGRICULTURAL DISTRICTS ALONG THE PROJECT
SHEET 5 OF 6

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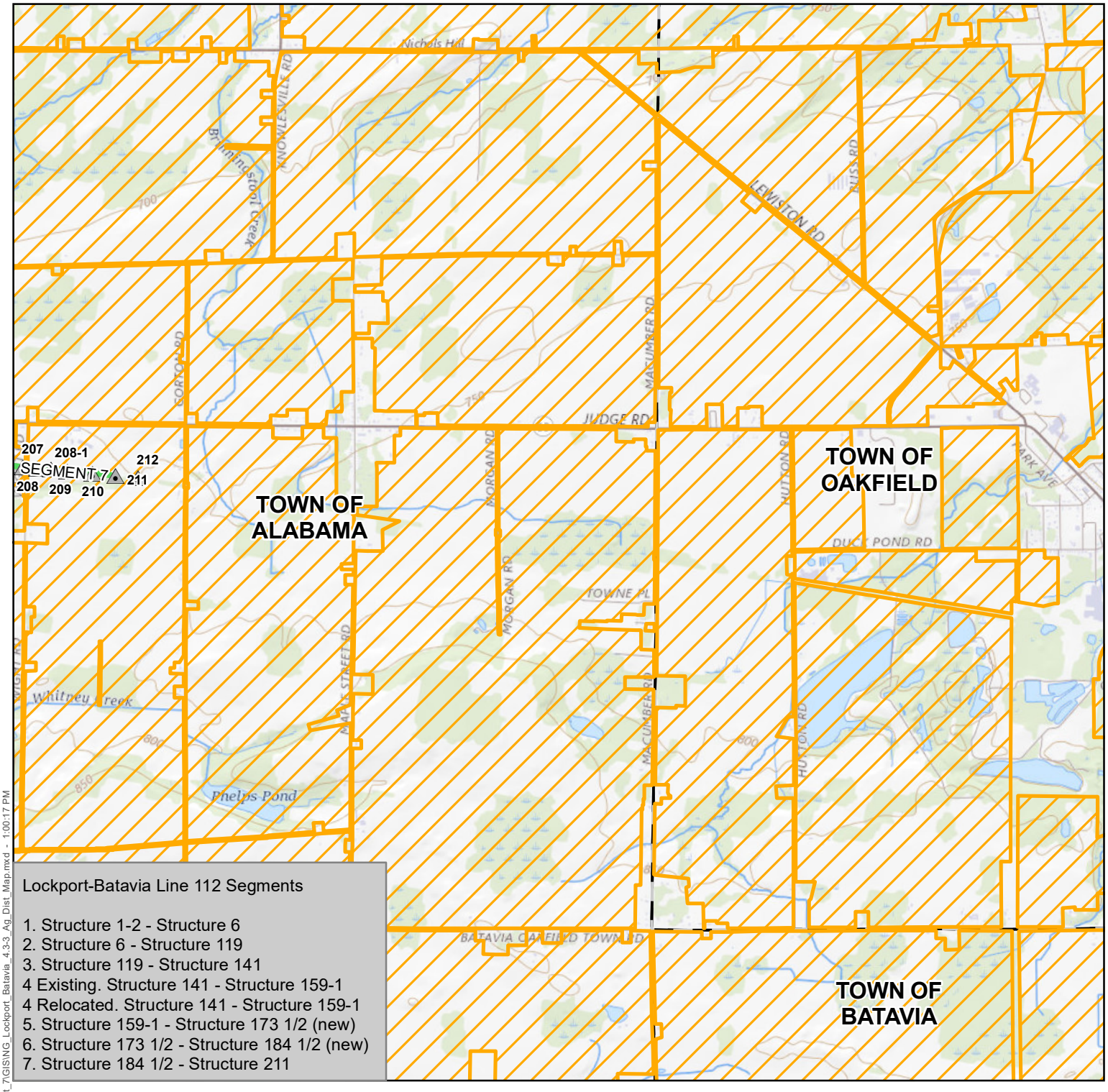


Lockport-Batavia Line 112 Segments

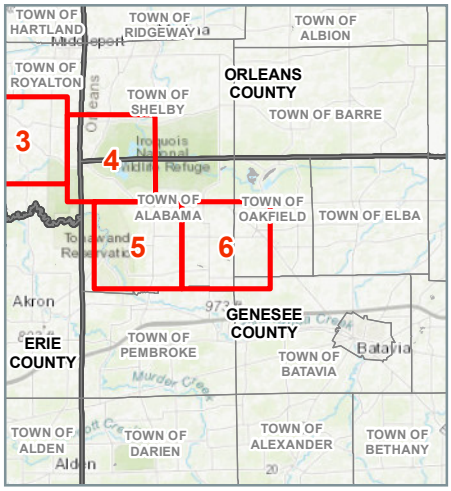
1. Structure 1-2 - Structure 6
2. Structure 6 - Structure 119
3. Structure 119 - Structure 141
4 Existing. Structure 141 - Structure 159-1
4 Relocated. Structure 141 - Structure 159-1
5. Structure 159-1 - Structure 173 1/2 (new)
6. Structure 173 1/2 - Structure 184 1/2 (new)
7. Structure 184 1/2 - Structure 211

Project USGS Quad(s):
Lockport
Gasport
Medina
Akron
Oakfield

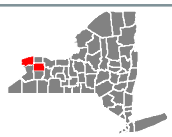
Structures
Genesee County Agricultural District 1
Genesee County Agricultural District 2
Genesee County Agricultural District 4
Niagara County Agricultural District 7
Orleans County Agricultural District 1
Municipal Boundary

Data Sources:
United States Geological Survey 24k Topo Quad Map - usgs.gov

Author: MFA | Revision Date: 8/17/2022



Center of Project Study Limits:
43.139915 N, 78.54395 W
North American Datum 1983



0 1,450 2,900 Feet

FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT-BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.3-3
AGRICULTURAL DISTRICTS ALONG THE PROJECT
SHEET 6 OF 6

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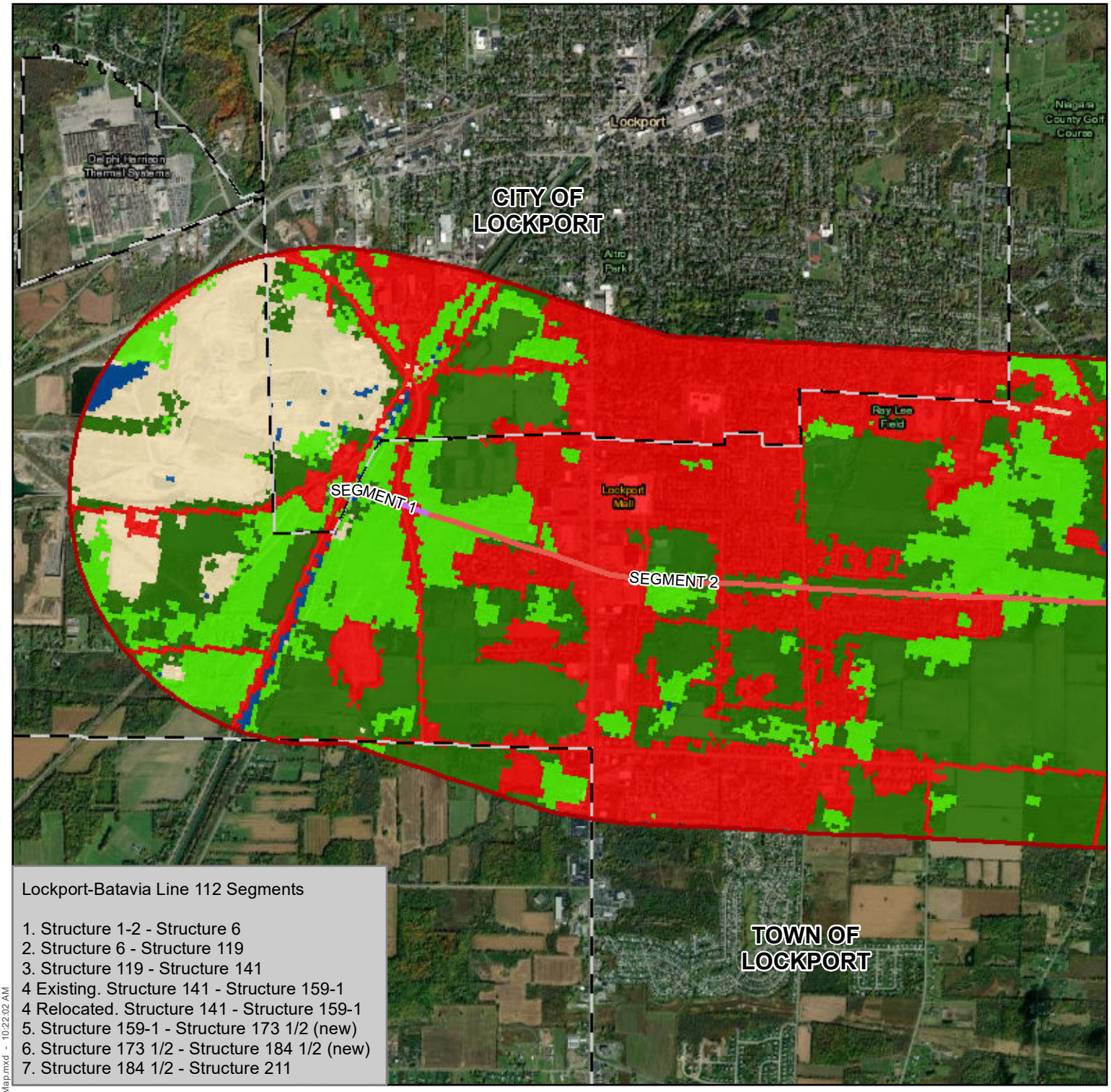
FIGURE 4.4-1 LANDSCAPE SIMILARITY ZONES

(SHEETS 1 TO 6)



Lockport-Batavia Line 112 Segments

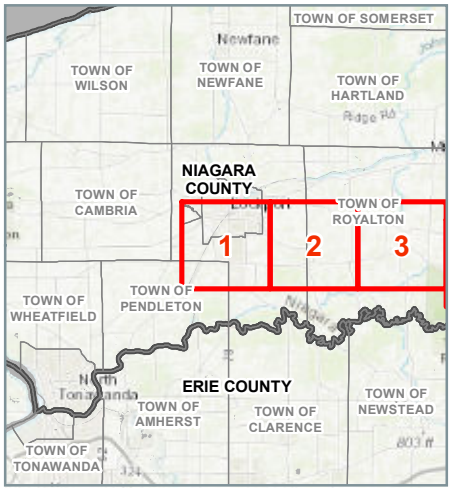
1. Structure 1-2 - Structure 6
2. Structure 6 - Structure 119
3. Structure 119 - Structure 141
4 Existing. Structure 141 - Structure 159-1
4 Relocated. Structure 141 - Structure 159-1
5. Structure 159-1 - Structure 173 1/2 (new)
6. Structure 173 1/2 - Structure 184 1/2 (new)
7. Structure 184 1/2 - Structure 211

Project USGS Quad(s):
Lockport
Gasport
Medina
Akron
Oakfield

- 1 Mile Route Buffer
- Municipal Boundary
- Zone 1 Forested
- Zone 2 Developed
- Zone 3 Open Space, Low Vegetation
- Zone 4 Agricultural
- Zone 5 Open Water

Data Sources:
United States Geological Survey 24k Topo Quad Map - usgs.gov

Author: MFA | Revision Date: 8/17/2021



Center of Project Study Limits:
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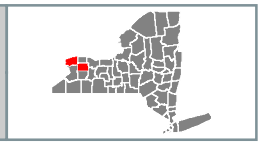
North American Datum 1983



0 1,500 3,000 Feet

FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT-BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.4-1
LANDSCAPE SIMILARITY ZONES

SHEET 1 OF 6

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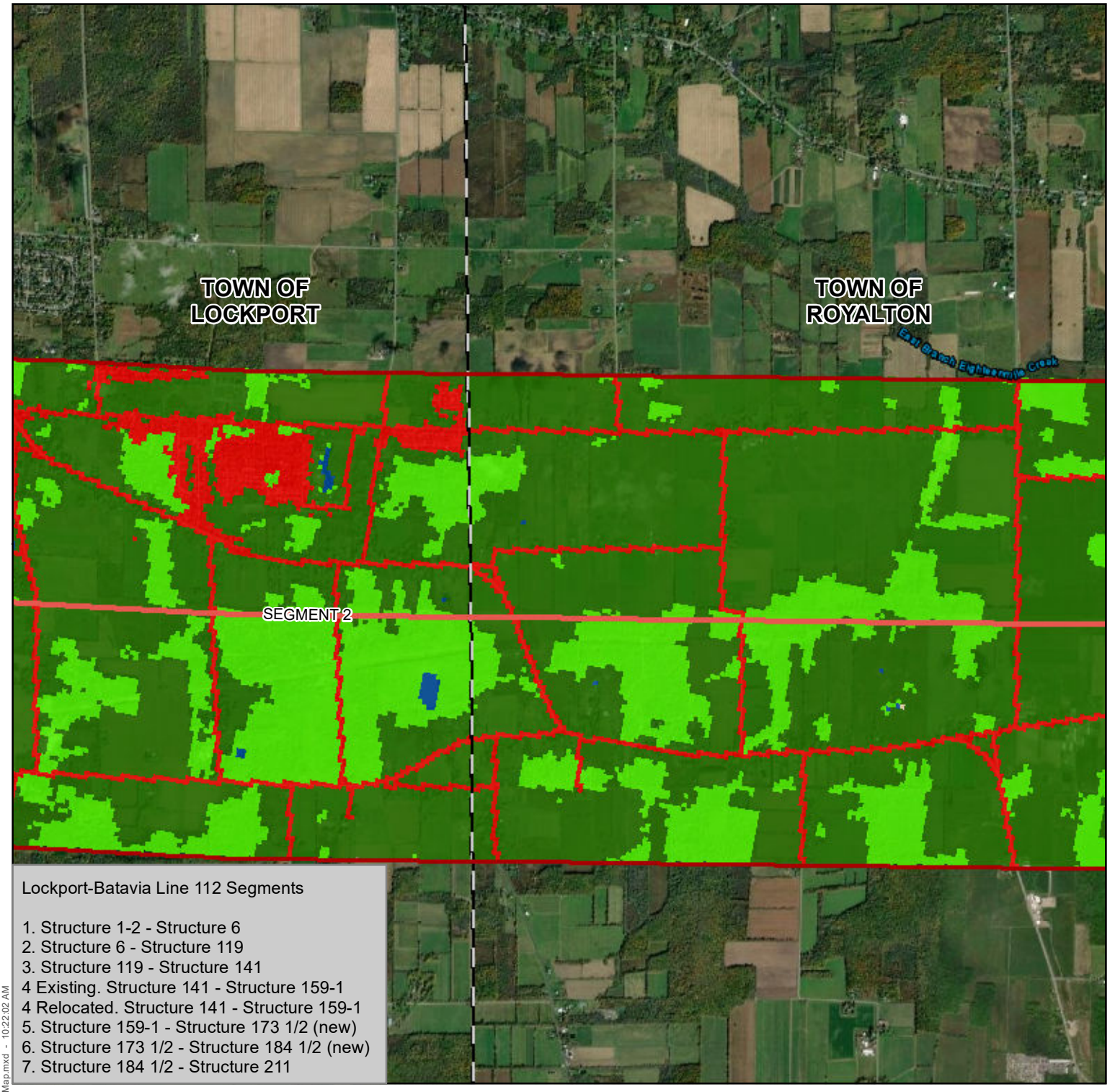

Lockport-Batavia Line 112 Segments

1. Structure 1-2 - Structure 6
2. Structure 6 - Structure 119
3. Structure 119 - Structure 141
4 Existing. Structure 141 - Structure 159-1
4 Relocated. Structure 141 - Structure 159-1
5. Structure 159-1 - Structure 173 1/2 (new)
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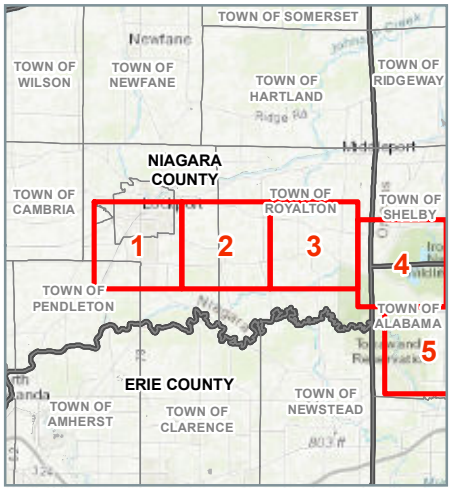
Project USGS Quad(s):
Lockport
Gasport
Medina
Akron
Oakfield

- 1 Mile Route Buffer
- Municipal Boundary
- Zone 1 Forested
- Zone 2 Developed
- Zone 3 Open Space, Low Vegetation
- Zone 4 Agricultural
- Zone 5 Open Water

Data Sources:
United States Geological Survey 24k Topo Quad Map - usgs.gov

Author: MFA | Revision Date: 8/17/2021



Center of Project Study Limits:
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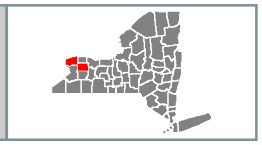
North American Datum 1983



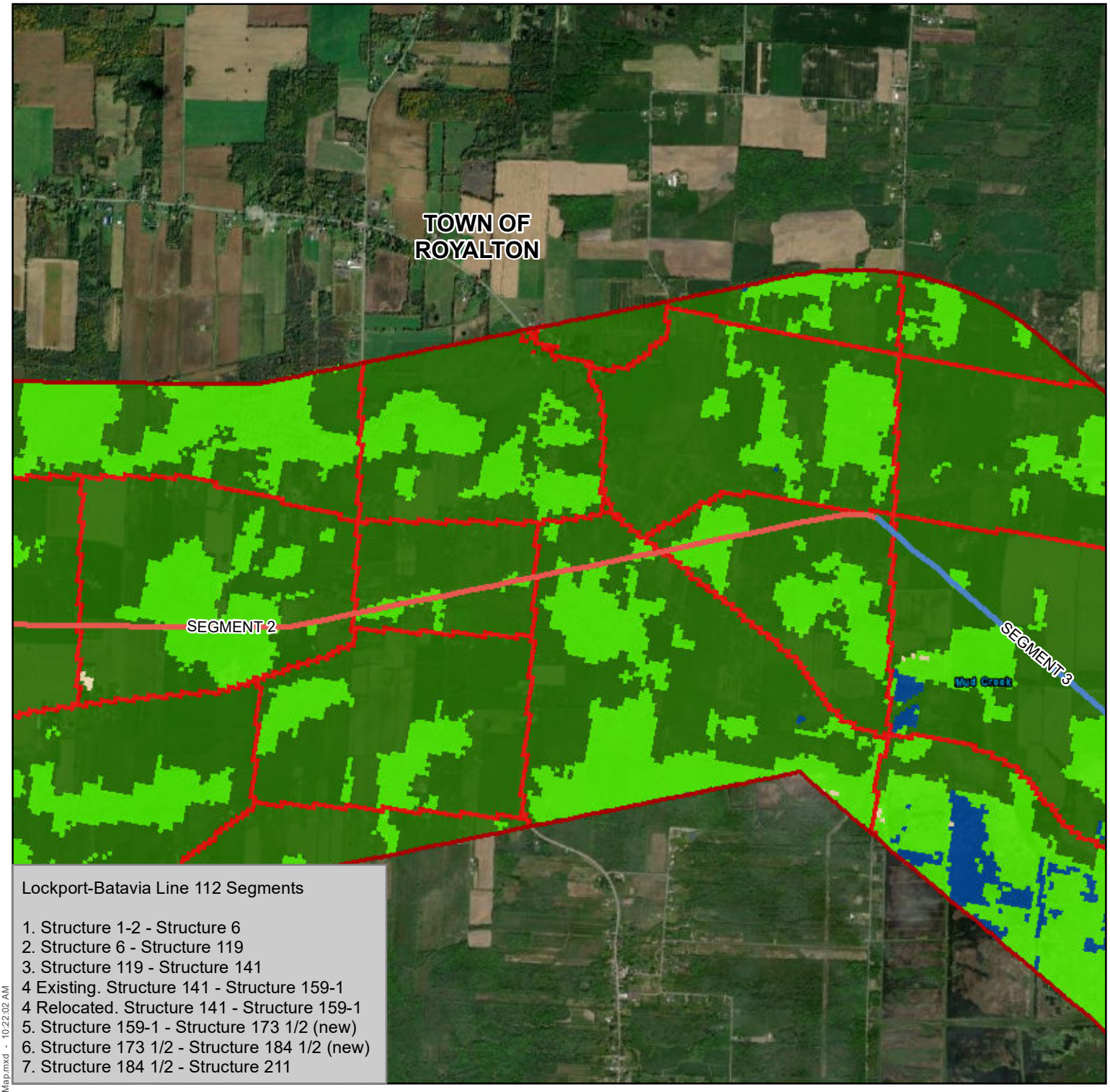
0 1,500 3,000 Feet

FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT-BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.4-1
LANDSCAPE SIMILARITY ZONES

SHEET 2 OF 6

H:\Projects\190176-00-NG_Batavia_Art_7\GIS\NG_Lockport_Batavia_4.4-1_LSZ_Map.mxd - 10:22:02 AM



Lockport-Batavia Line 112 Segments

1. Structure 1-2 - Structure 6
2. Structure 6 - Structure 119
3. Structure 119 - Structure 141
4 Existing. Structure 141 - Structure 159-1
4 Relocated. Structure 141 - Structure 159-1
5. Structure 159-1 - Structure 173 1/2 (new)
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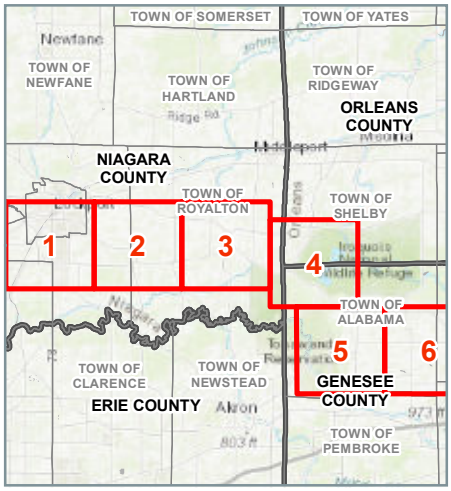
7. Structure 184 1/2 - Structure 211

Project USGS Quad(s):
Lockport
Gasport
Medina
Akron
Oakfield

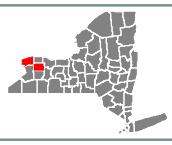
1 Mile Route Buffer
Municipal Boundary
Zone 1 Forested
Zone 2 Developed
Zone 3 Open Space, Low Vegetation
Zone 4 Agricultural
Zone 5 Open Water

Data Sources:
United States Geological Survey 24k Topo Quad Map - usgs.gov

Author: MFA | Revision Date: 8/17/2021



Center of Project Study Limits:
43.139915 N, 78.54395 W
North American Datum 1983



0 1,500 3,000 Feet

FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT-BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.4-1
LANDSCAPE SIMILARITY ZONES

SHEET 3 OF 6

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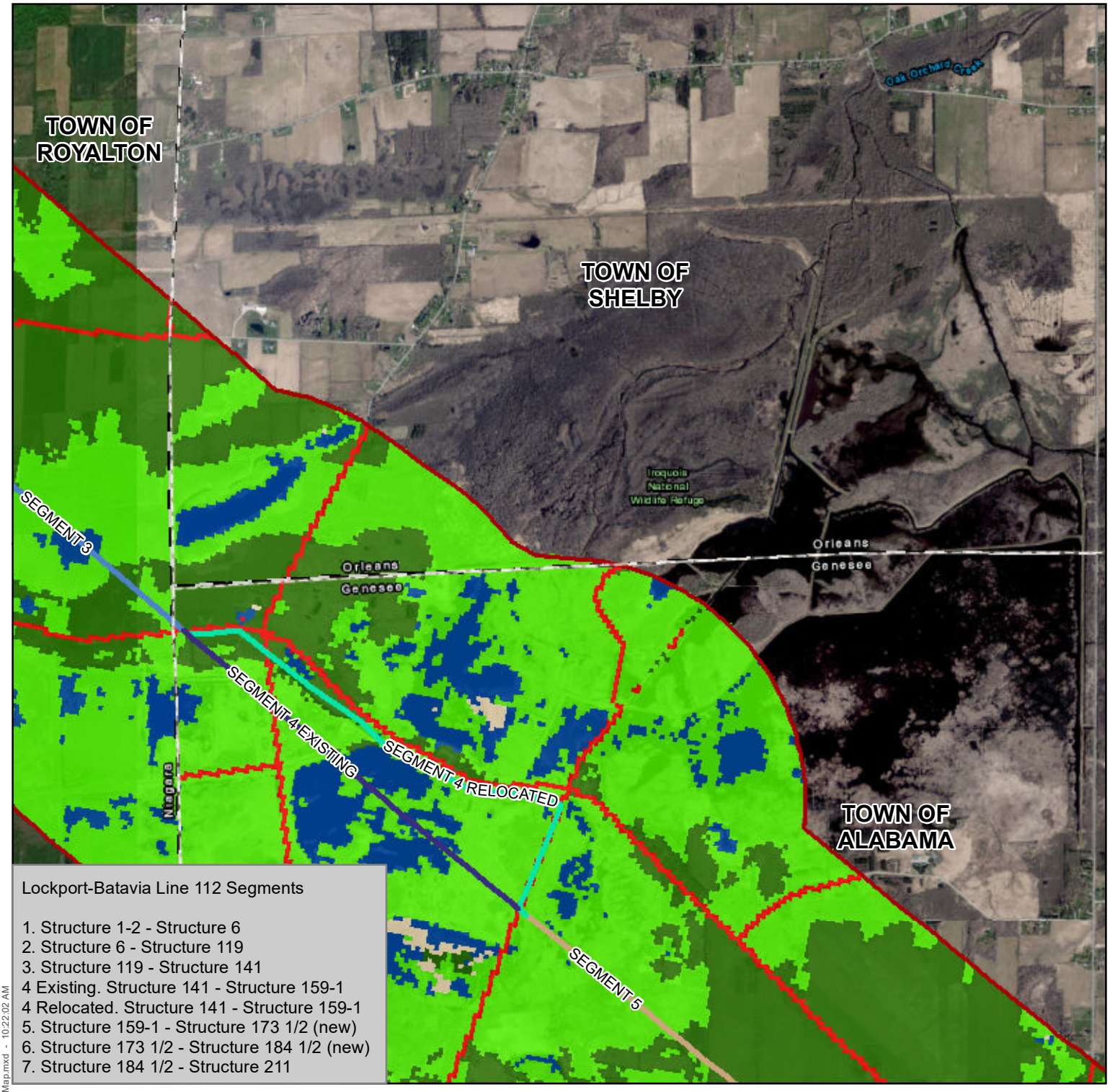

Lockport-Batavia Line 112 Segments

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2. Structure 6 - Structure 119
3. Structure 119 - Structure 141
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4 Relocated. Structure 141 - Structure 159-1
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Project USGS Quad(s):
Lockport
Gasport
Medina
Akron
Oakfield

- 1 Mile Route Buffer
- Municipal Boundary
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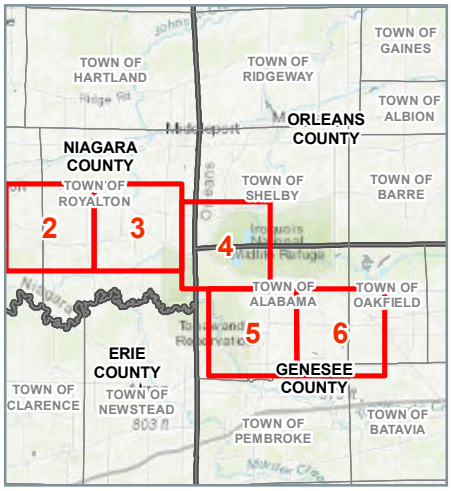
- Zone 5 Open Water

Data Sources:
United States Geological Survey 24k Topo Quad Map - usgs.gov

Author: MFA | Revision Date: 8/17/2021



Center of Project Study Limits:
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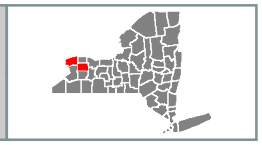
North American Datum 1983



0 1,500 3,000 Feet

FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT-BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.4-1
LANDSCAPE SIMILARITY ZONES

SHEET 4 OF 6

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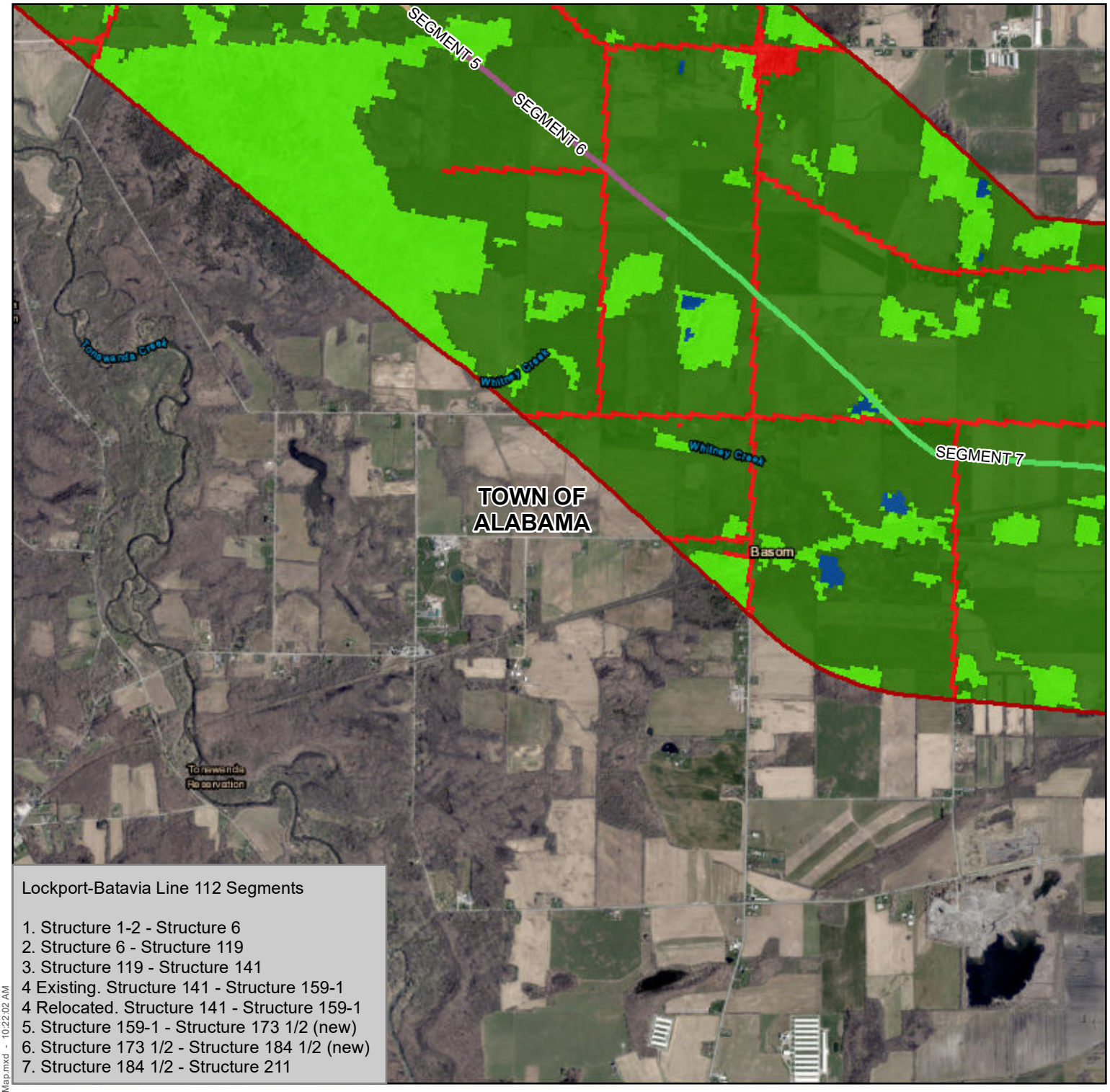

Lockport-Batavia Line 112 Segments

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2. Structure 6 - Structure 119
3. Structure 119 - Structure 141
4 Existing. Structure 141 - Structure 159-1
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Project USGS Quad(s):
Lockport
Gasport
Medina
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Oakfield

- 1 Mile Route Buffer
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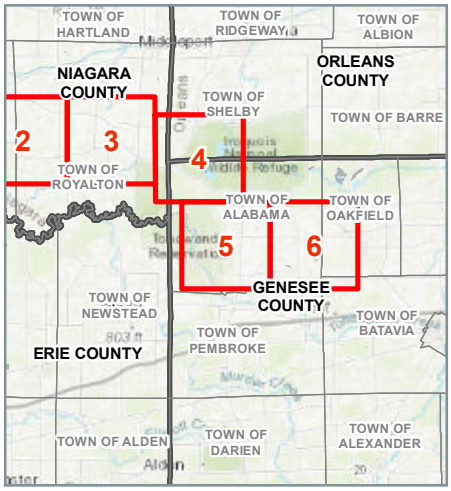
Data Sources:
United States Geological Survey 24k Topo Quad Map - usgs.gov

Author: MFA | Revision Date: 8/17/2021



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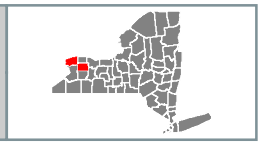


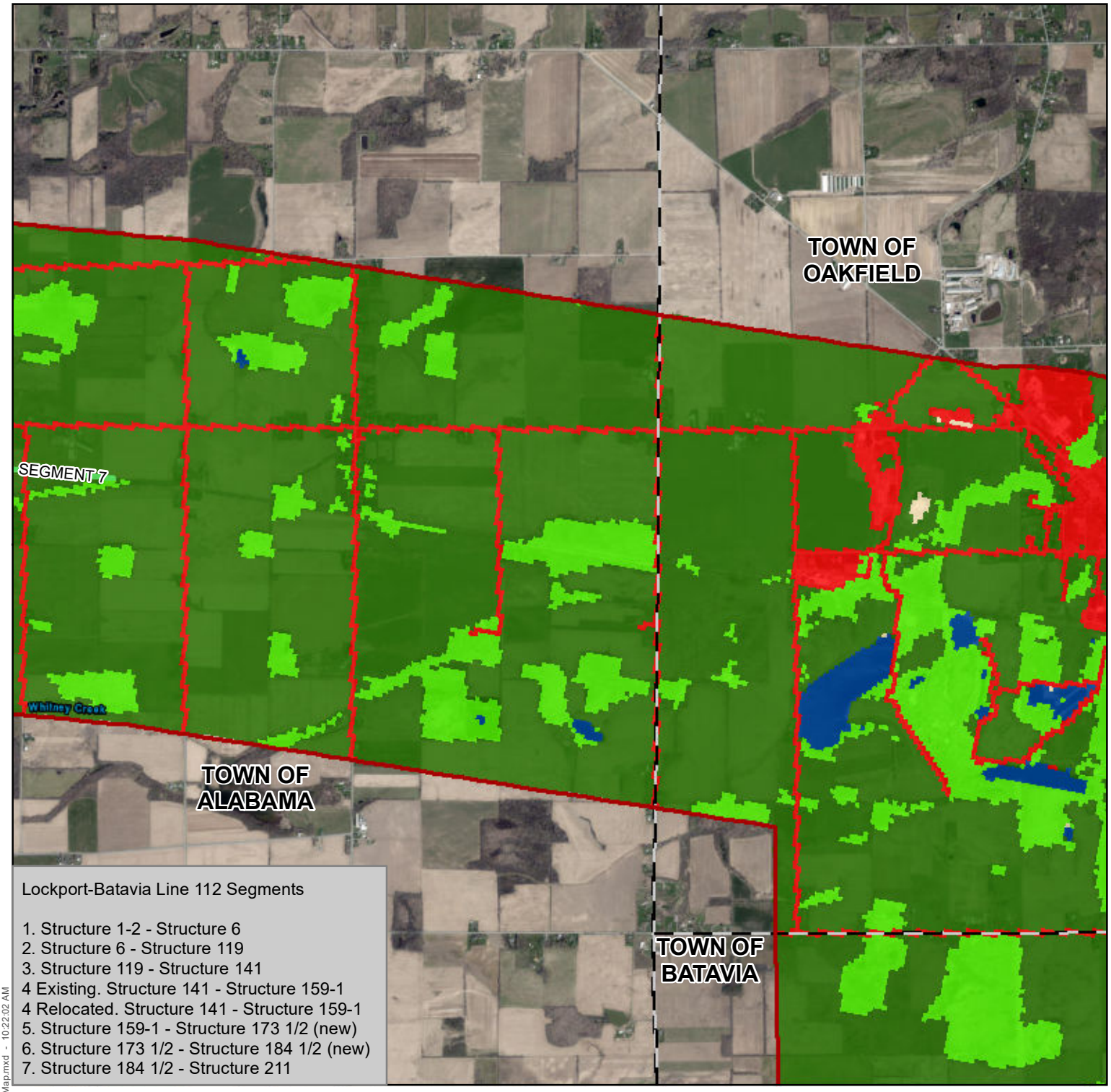
0 1,500 3,000 Feet

FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT-BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.4-1
LANDSCAPE SIMILARITY ZONES

SHEET 5 OF 6

H:\Projects\190176-00-NG_Batavia_Art_7\GIS\NG_Lockport_Batavia_4.4-1_LSZ_Map.mxd - 10:22:02 AM



Lockport-Batavia Line 112 Segments

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2. Structure 6 - Structure 119
3. Structure 119 - Structure 141
4 Existing. Structure 141 - Structure 159-1
4 Relocated. Structure 141 - Structure 159-1
5. Structure 159-1 - Structure 173 1/2 (new)
6. Structure 173 1/2 - Structure 184 1/2 (new)
7. Structure 184 1/2 - Structure 211

Project USGS Quad(s):
Lockport
Gasport
Medina
Akron
Oakfield

- 1 Mile Route Buffer
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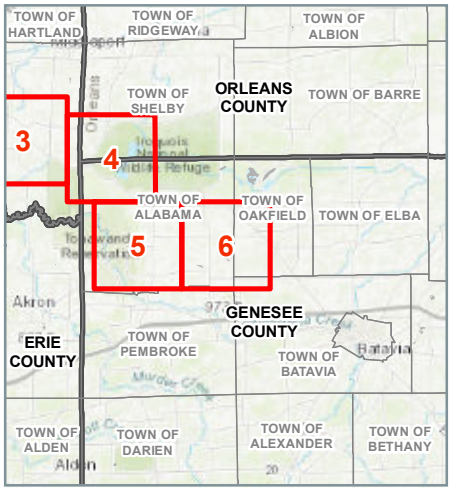
Data Sources:
United States Geological Survey 24k Topo Quad Map - usgs.gov

Author: MFA | Revision Date: 8/17/2021



Center of Project Study Limits:
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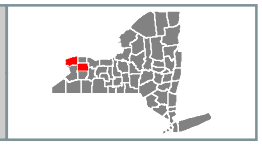


0 1,500 3,000 Feet

FISHER ASSOCIATES

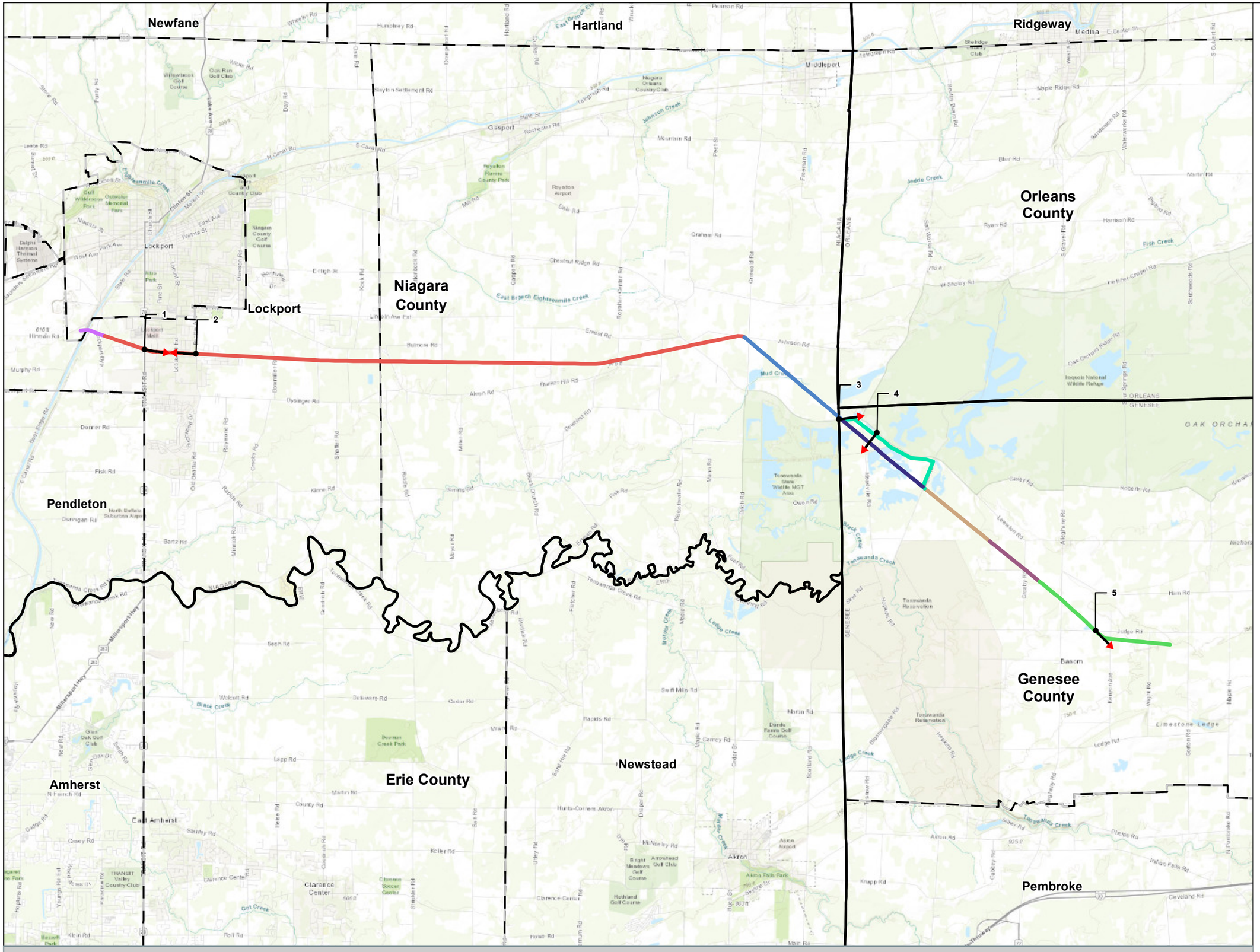
NATIONAL GRID
LOCKPORT-BATAVIA LINE 112 REBUILD PROJECT
FIGURE 4.4-1
LANDSCAPE SIMILARITY ZONES

SHEET 6 OF 6

H:\Projects\190176-00-NG_Batavia_Art_7\GIS\NG_Lockport_Batavia_4.4-1_LSZ_Map.mxd - 10:22:02 AM

FIGURE 4.4-2 VISUAL SIMULATIONS FOR THE PROJECT

(SHEETS 1 TO 6)



View Point Overview

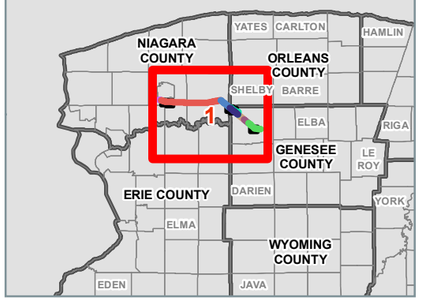
FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT – BATAVIA LINE 112 REBUILD PROJECT
VISUAL SIMULATIONS FOR THE PROJECT
FIGURE 4.4-2

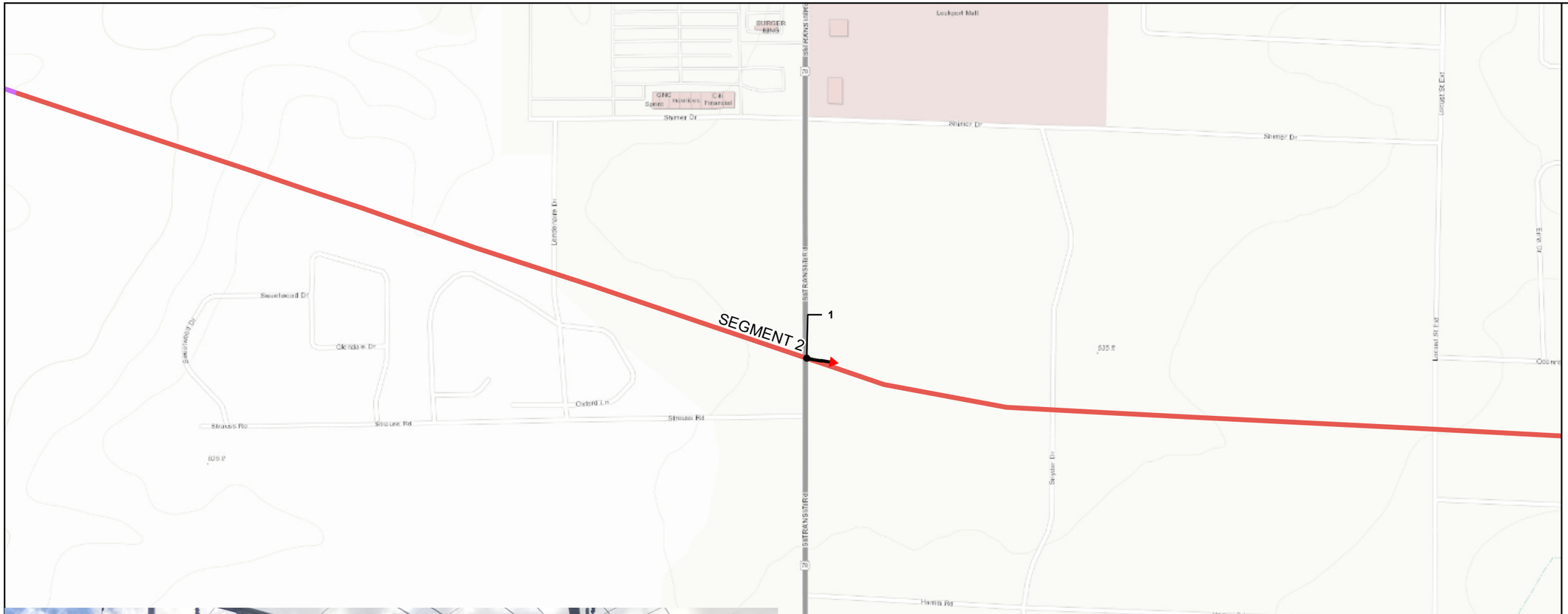
- Simulation Viewpoint
- Segment 1
- Segment 2
- Segment 3
- Segment 4 Existing
- Segment 4 Relocated
- Segment 5
- Segment 6
- Segment 7
- Town Boundary
- County Boundary

Map Revision Date: 8/19/2021 | Aerial Date: 8/19/2021

0 4,000 8,000 Feet



SHEET 1 OF 6



Viewpoint 1 - S. Transit Rd, Lockport - Segment 2

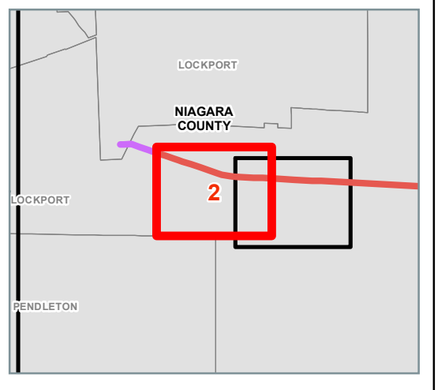
FISHER ASSOCIATES

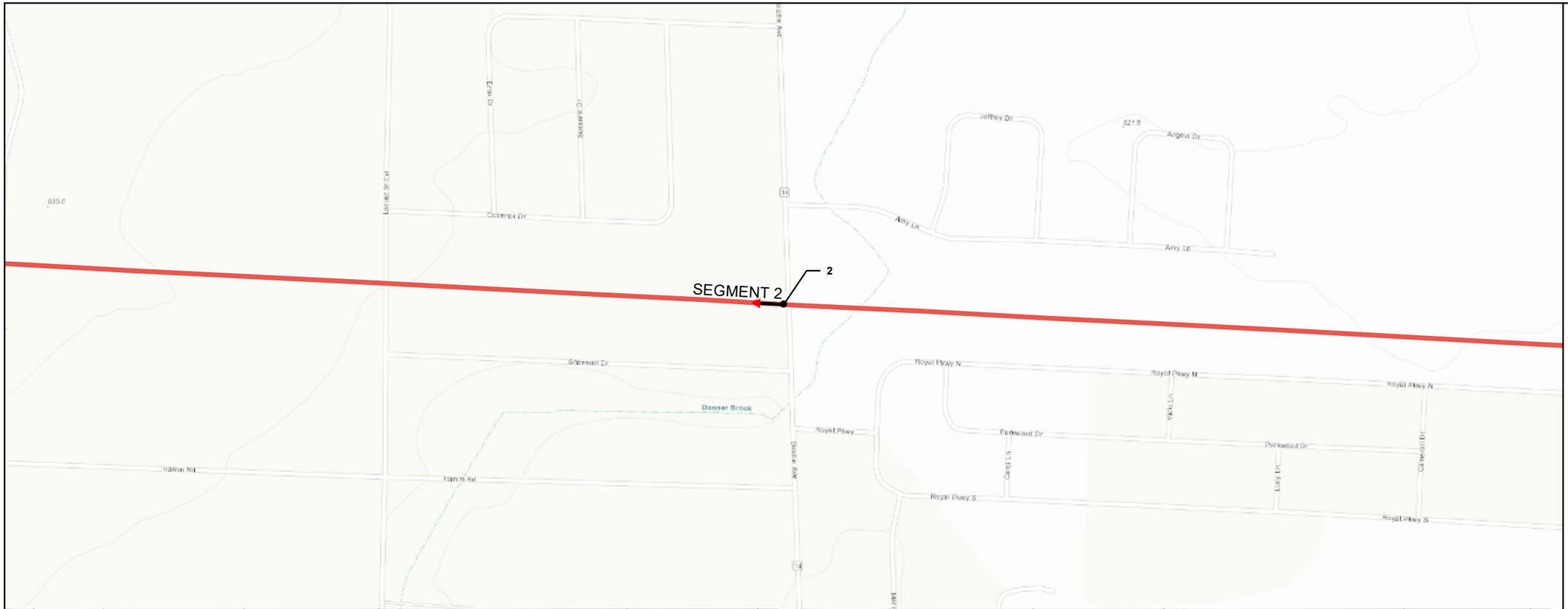
NATIONAL GRID
LOCKPORT – BATAVIA LINE 112 REBUILD PROJECT
VISUAL SIMULATIONS FOR THE PROJECT
FIGURE 4.4-2

- Simulation Viewpoint
- Segment 1
- Segment 2
- Segment 3
- Segment 4 Existing
- Segment 4 Relocated
- Segment 5
- Segment 6
- Segment 7
- Town Boundary
- County Boundary

Map Revision Date: 8/19/2021 | Aerial Date: 8/19/2021

0 260 520 Feet





Viewpoint 2 - Beattie Ave, Lockport - Segment 2

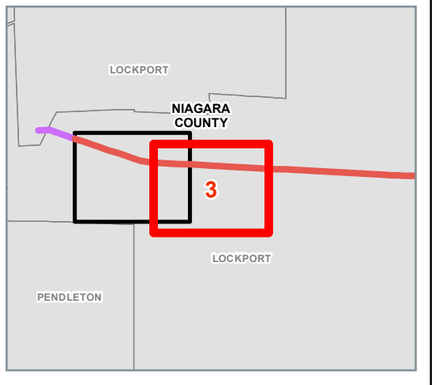
FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT – BATAVIA LINE 112 REBUILD PROJECT
VISUAL SIMULATIONS FOR THE PROJECT
FIGURE 4.4-2

- Simulation Viewpoint
- Segment 1
- Segment 2
- Segment 3
- Segment 4 Existing
- Segment 4 Relocated
- Segment 5
- Segment 6
- Segment 7
- Town Boundary
- County Boundary

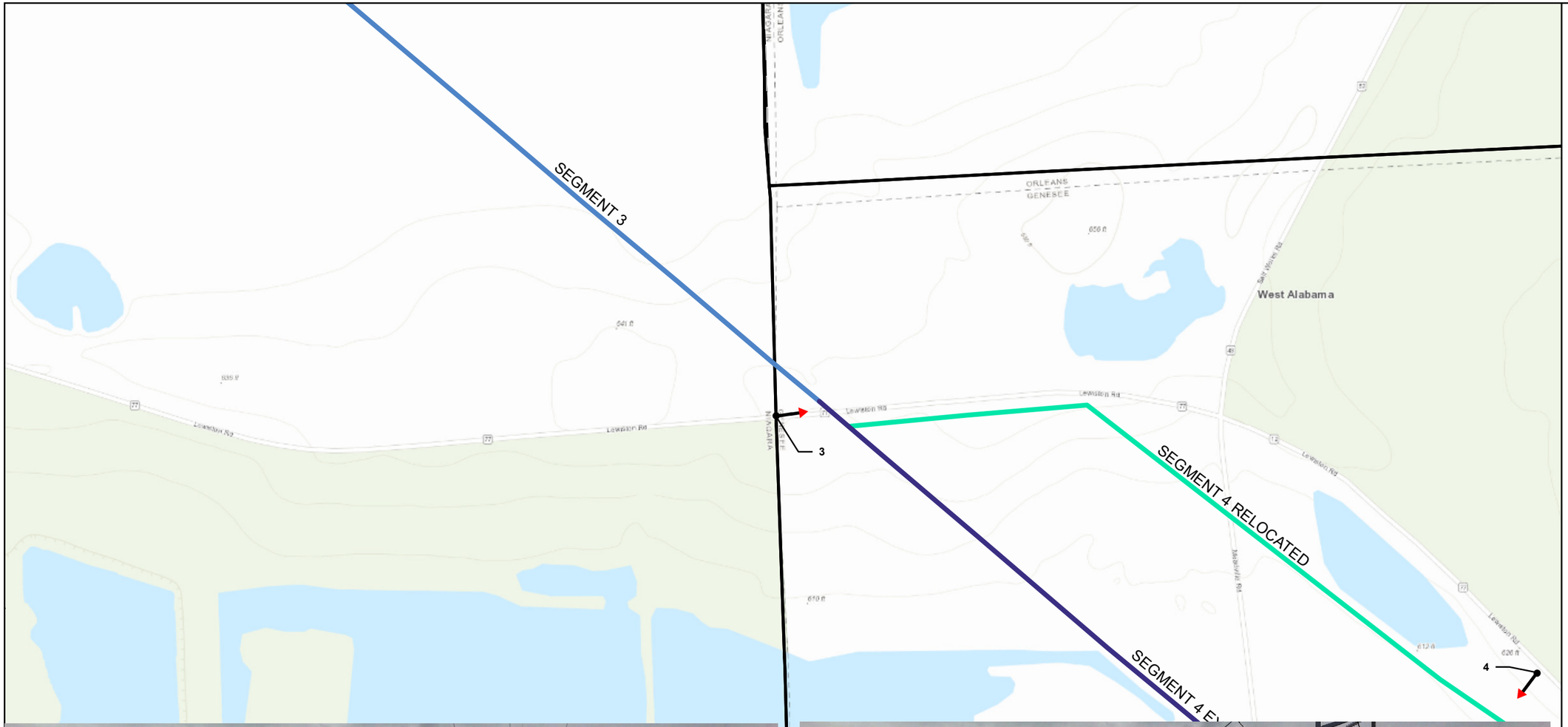
Map Revision Date: 8/19/2021 | Aerial Date: 8/19/2021

0 260 520 Feet



FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT – BATAVIA LINE 112 REBUILD PROJECT
VISUAL SIMULATIONS FOR THE PROJECT
FIGURE 4.4-2

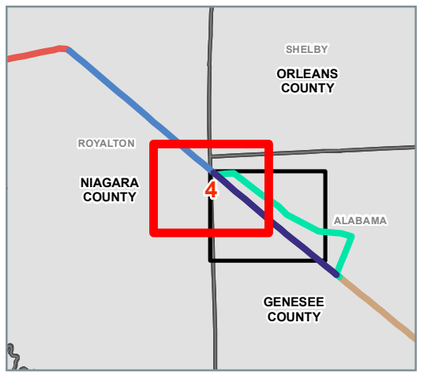


Viewpoint 3 - Lewiston Rd, Alabama - Segment 4

- Simulation Viewpoint
- Segment 1
- Segment 2
- Segment 3
- Segment 4 Existing
- Segment 4 Relocated
- Segment 5
- Segment 6
- Segment 7
- Town Boundary
- County Boundary

Map Revision Date: 8/19/2021 | Aerial Date: 8/19/2021

0 260 520 Feet



FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT – BATAVIA LINE 112 REBUILD PROJECT
VISUAL SIMULATIONS FOR THE PROJECT
FIGURE 4.4-2

SEGMENT 3

3

4

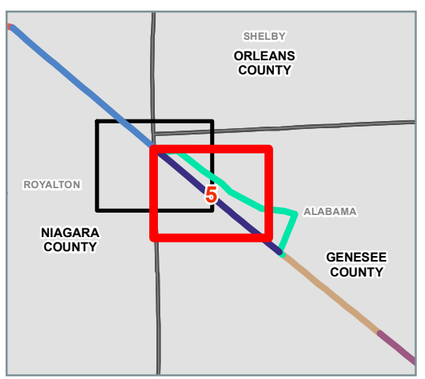
SEGMENT 4 RELOCATED

SEGMENT 4 EXISTING

- Simulation Viewpoint
- Segment 1
- Segment 2
- Segment 3
- Segment 4 Existing
- Segment 4 Relocated
- Segment 5
- Segment 6
- Segment 7
- Town Boundary
- County Boundary

Map Revision Date: 8/19/2021 | Aerial Date: 8/19/2021

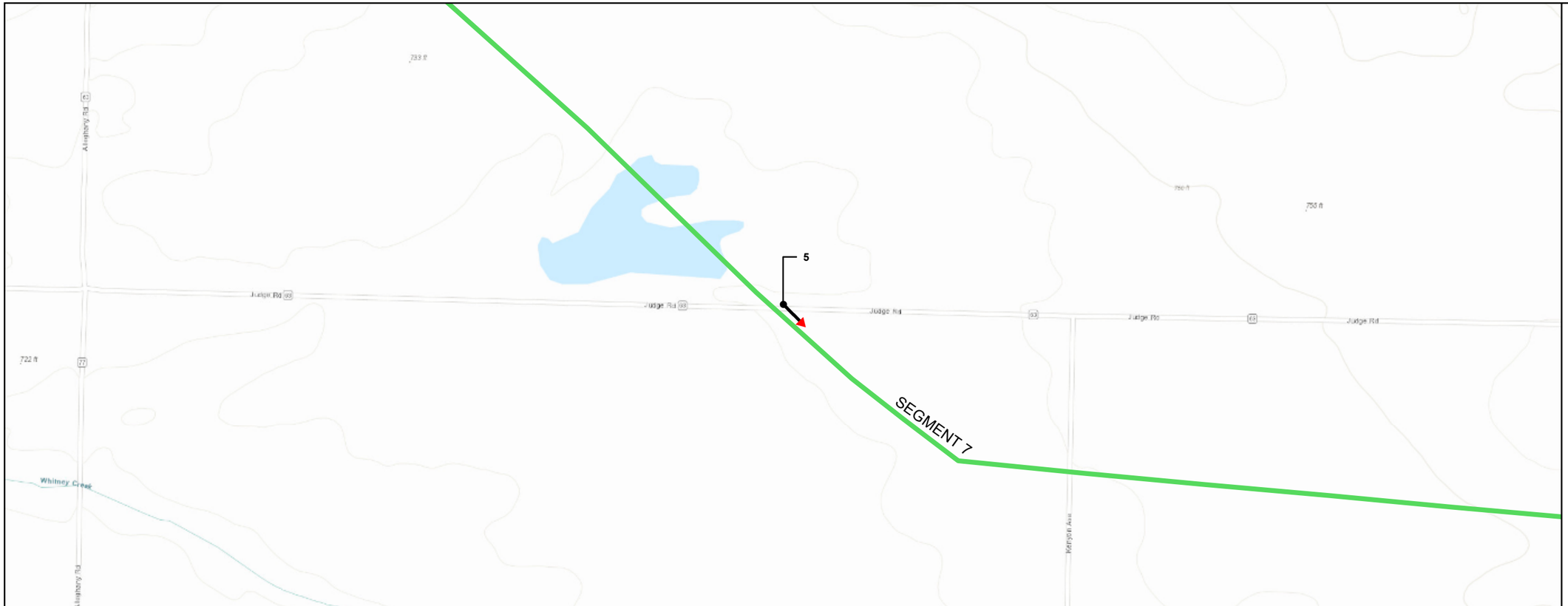
0 260 520 Feet



Viewpoint 4 - Lewiston Rd, Alabama - Segment 4

FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT – BATAVIA LINE 112 REBUILD PROJECT
VISUAL SIMULATIONS FOR THE PROJECT
FIGURE 4.4-2



Viewpoint 5 - Lewiston Rd, Alabama - Segment 7

- Simulation Viewpoint
- Segment 1
- Segment 2
- Segment 3
- Segment 4 Existing
- Segment 4 Relocated
- Segment 5
- Segment 6
- Segment 7
- Town Boundary
- County Boundary

Map Revision Date: 8/19/2021 | Aerial Date: 8/19/2021

0 260 520 Feet