CASE NO. 14-1717-GA-BLN
LON
AVON LAKE GAS ADDITION PROJECT
PROPOSED NATURAL GAS PIPELINE

ATTACHMENT G

U.S. FISH AND WILDLIFE SERVICE CORRESPONDENCE

AECOM
4 Neshaminy Interplex, Suite 300
Trevose, PA 19053-6940

215.244.7100 tel
215.244.7179 fax

January 22, 2014

Dr. Mary Knapp
U.S. Fish and Wildlife Service
4625 Morse Rd Suite 104
Columbus, OH, 43230

Subject: NRG Ohio Pipeline Company LLC
Avon Lake Pipeline Project
Lorain County, Ohio

Dear Dr. Knapp:

On behalf of NRG Ohio Pipeline Company LLC ("NRG"), AECOM hereby requests rare, threatened and endangered species consultation for NRG's proposed 20-mile Avon Lake Pipeline Project (the "Project") (Figure 1) which will be located in Lorain County, Ohio.

NRG will seek approval from the Ohio Power Siting Board ("OPSB") process. AECOM has been retained to assist NRG with the preparation of environmental studies, permits and consultations required for planning and construction of the Project. On behalf of NRG, AECOM hereby requests information related to the presence of federally-listed species and their habitats located within 0.5 miles (1 mile total centered over the pipeline centerline) of the Project area. More specifically, AECOM seeks the following information for the Project area:

- Federally-listed threatened or endangered species;
- Federally-proposed threatened or endangered species;
- Federally-proposed or designated critical habitat;
- Federally-designated trails, parks, nature preserves, Wildlife Management Areas, National Refuges, etc; and
- Other unique ecosystems or sensitive communities.

Upon your review, we ask that you please send a written response to the AECOM address above, listing specific findings or concerns. In order to assist you in this process, we have attached 7.5-minute USGS quadrangle maps of the Project area (Figure 1), aerial maps of the Project area with NWI wetlands (Figure 2), and shapefiles of the proposed alignment.

If you require any further information or have any questions regarding the Project, please do not hesitate to contact Heather Brewster at (215) 244-7155 or e-mail heather.brewster@aecom.com.

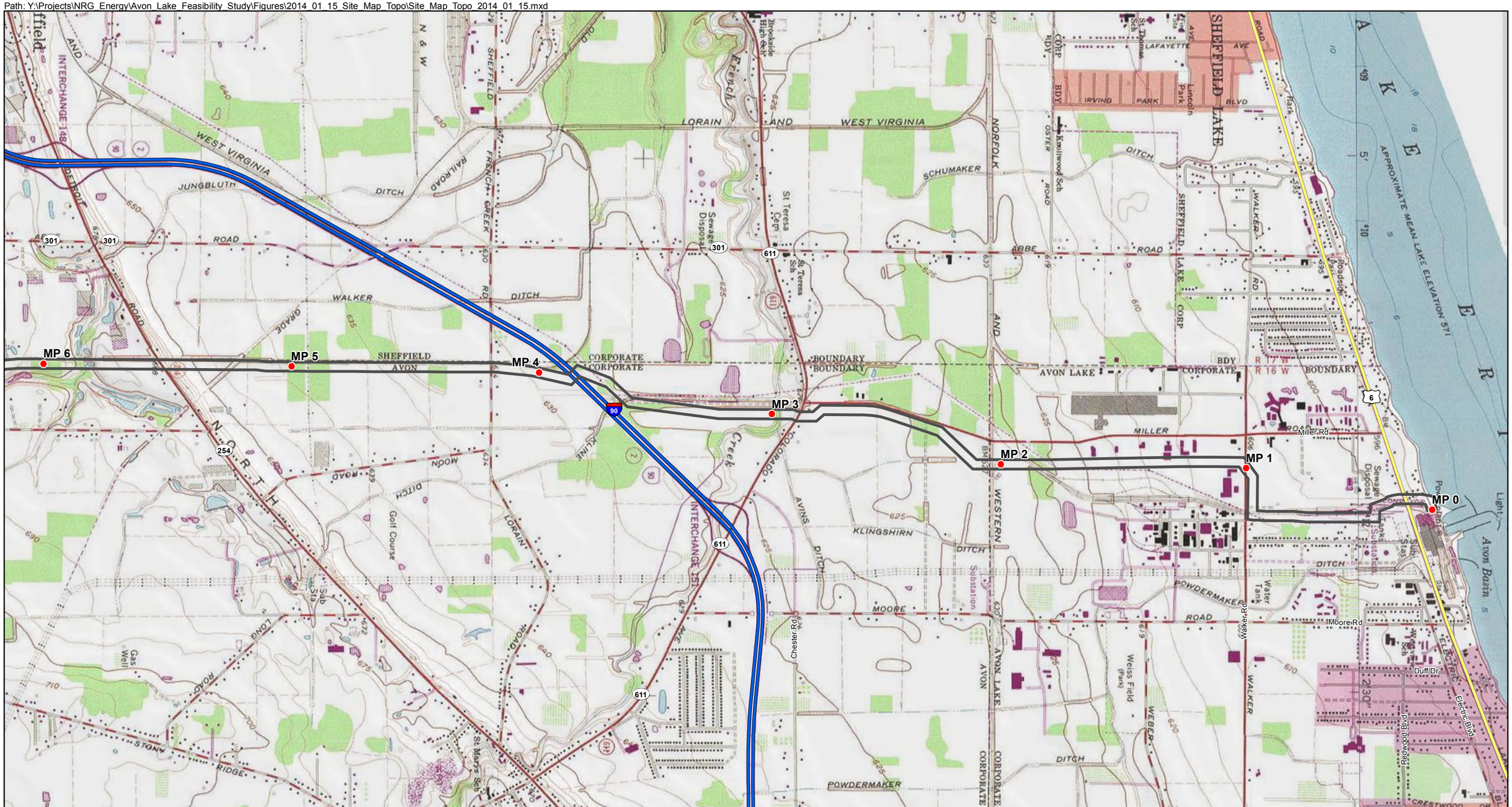
Sincerely,

Project Manager

cc: Mr. Ron Bevacqua, NRG
Mr. Nate Rozic, NRG

Attachments: USGS Location Map (Figure 1)
Aerial Location Map (Figure 2)
Project Shapefiles

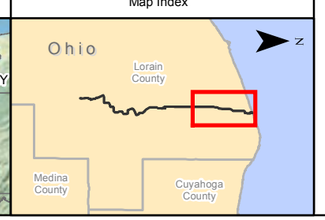
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Site Location



Map Index



Legend

- Milepost Preferred Route
- Preferred Route 200' Corridor
- Highway
- Major Road
- Other Major Road

0 1,000 2,000 4,000 Feet

1:24,000

NRG Ohio Pipeline Company LLC
Avon Lake Pipeline Project

Location Map

Page 1 of 3

AECOM

Figure 1
January 2014

Data Sources: Lorain County GIS Data 2013
Imagery: Bing Map Topo

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MP 6
MP 7
MP 8
MP 9
MP 10
MP 11
MP 12

Site Location



Map Index



Legend

- Milepost Preferred Route
- Preferred Route 200' Corridor
- Highway
- Major Road
- Other Major Road

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NRG Ohio Pipeline Company LLC
Avon Lake Pipeline Project

Location Map

AECOM

Figure 1
January 2014

Data Sources: Lorain County GIS Data 2013
Imagery: Bing Map Topo

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MP 19
MP 18
MP 17
MP 16
MP 15
MP 14
MP 13

Site Location



Map Index



Legend

- Milepost Preferred Route
- Preferred Route 200' Corridor
- Highway
- Major Road
- Other Major Road

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NRG Ohio Pipeline Company LLC
Avon Lake Pipeline Project

Location Map

Page 3 of 3

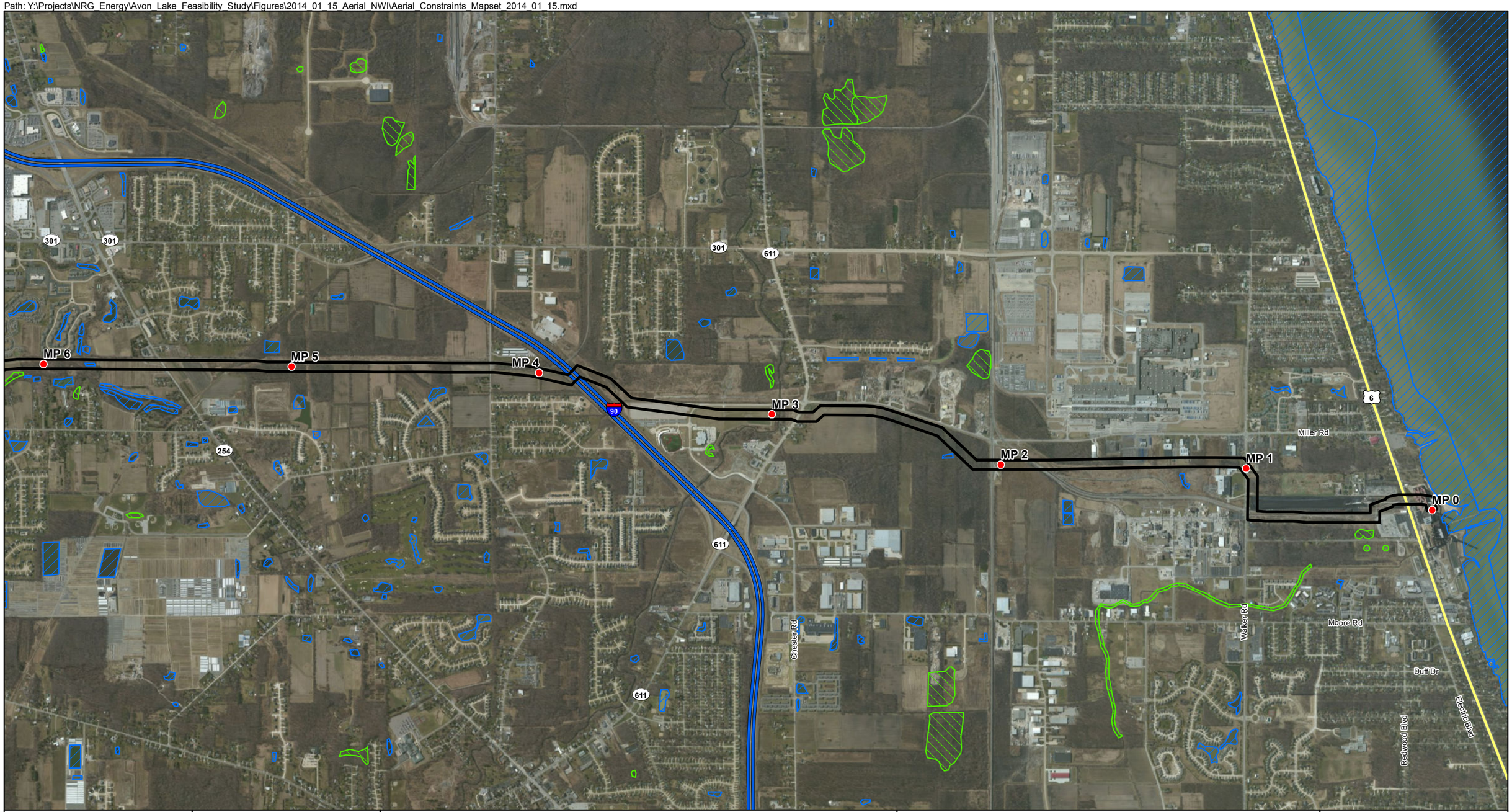
AECOM

Figure 1

January 2014

Data Sources: Lorain County GIS Data 2013
Imagery: Bing Map Topo

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Site Location



Map Index



Legend

- Milepost Preferred Route
- Preferred Route 200' Corridor
- NWI Wetland
- NWI Waterbody
- Highway
- Major Road
- Other Major Road

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NRG Ohio Pipeline Company LLC
Avon Lake Pipeline Project

Aerial Map

Page 1 of 3

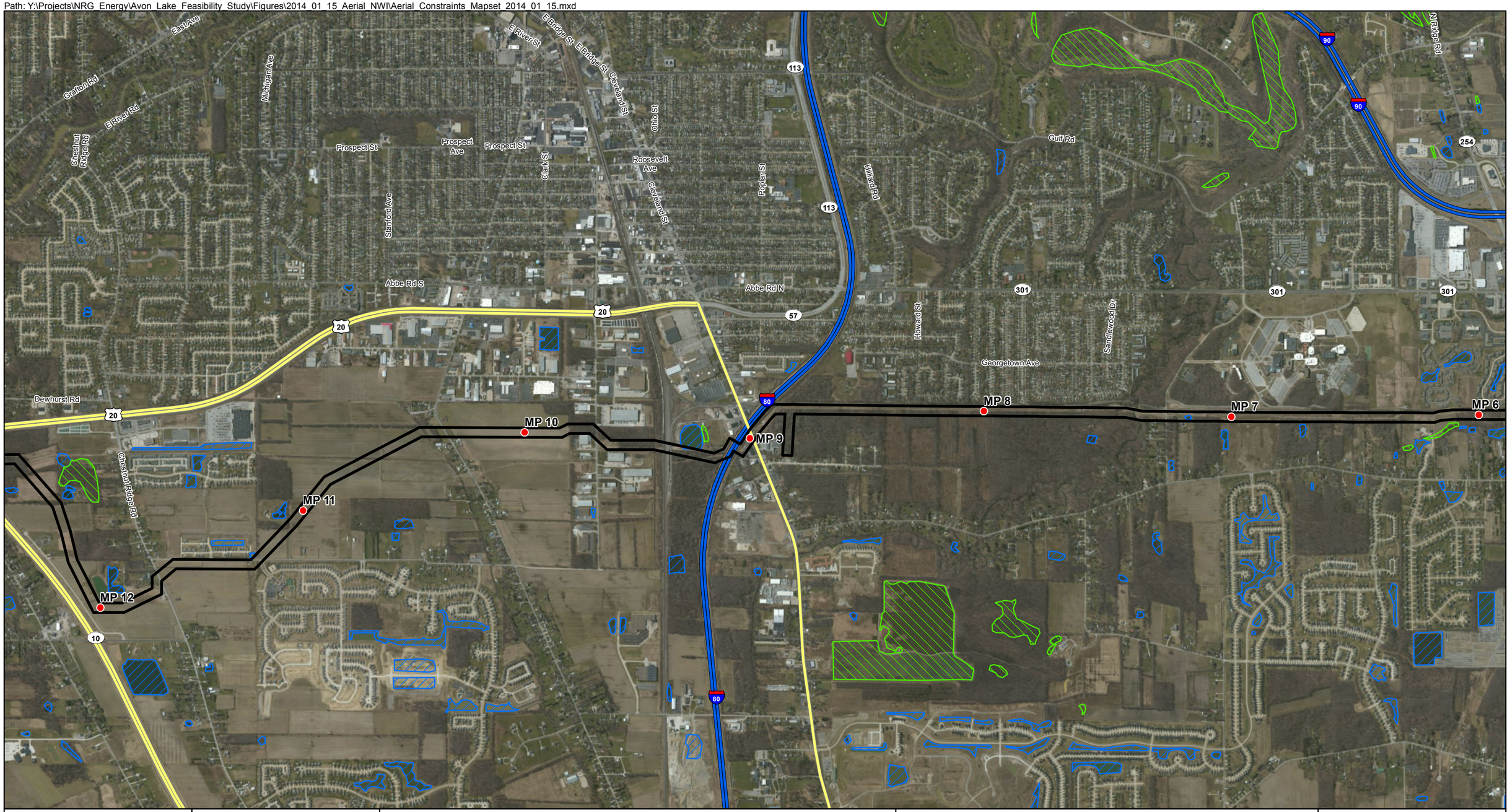
AECOM

Figure 2

January 2014

Data Sources: A Lorain County GIS Data 2013; NWI Data 2013
Imagery: Bing Map Aerials

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Site Location



Map Index



Legend

- Milepost Preferred Route
- Preferred Route 200' Corridor
- NWI Wetland
- NWI Waterbody
- Highway
- Major Road
- Other Major Road

0 1,000 2,000 4,000 Feet

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NRG Ohio Pipeline Company LLC
Avon Lake Pipeline Project

Aerial Map

AECOM

Figure 2

January 2014

Data Sources: A Lorain County GIS Data 2013; NWI Data 2013
Imagery: Bing Map Aerials

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MP 19
MP 18
MP 17
MP 16
MP 15
MP 14
MP 13
57
20
82
10
Crafton Rd
E River Rd
Dewhurst Rd

Site Location



Map Index



Legend

- Milepost Preferred Route
- Preferred Route 200' Corridor
- NWI Wetland
- NWI Waterbody
- Highway
- Major Road
- Other Major Road

0 1,000 2,000 4,000 Feet

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NRG Ohio Pipeline Company LLC
Avon Lake Pipeline Project

Aerial Map

AECOM

Figure 2
January 2014

Data Sources: A Lorain County GIS Data 2013; NWI Data 2013
Imagery: Bing Map Aerials

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / FAX (614) 416-8994

February 4, 2014

Heather Brewster
AECOM Neshaminy Interplex, Suite 300
Trevose, PA 19053-6940

Re: Avon Lake Pipeline Project in Lorain County, Ohio

Dear Ms. Brewster, TAILS# 03E15000-2014-TA-0602

We have received your recent correspondence requesting information about the subject proposal. There are no Federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. The following comments and recommendations will assist you in fulfilling the requirements for consultation under section 7 of the Endangered Species Act of 1973, as amended (ESA).

The Service recommends that proposed developments avoid and minimize water quality impacts and impacts to high quality fish and wildlife habitat (e.g., forests, streams, wetlands). Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. All disturbed areas should be mulched and revegetated with native plant species. Prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

ENDANGERED SPECIES COMMENTS: All projects in the State of Ohio lie within the range of the **Indiana bat** (*Myotis sodalis*), a federally listed endangered species. Since first listed as endangered in 1967, their population has declined by nearly 60%. Several factors have contributed to the decline of the Indiana bat, including the loss and degradation of suitable hibernacula, human disturbance during hibernation, pesticides, and the loss and degradation of forested habitat, particularly stands of large, mature trees. Fragmentation of forest habitat may also contribute to declines. During winter, Indiana bats hibernate in caves and abandoned mines. Summer habitat requirements for the species are not well defined but the following are considered important:

(1) dead or live trees and snags with peeling or exfoliating bark, split tree trunk and/or branches, or cavities, which may be used as maternity roost areas;
(2) live trees (such as shagbark hickory and oaks) which have exfoliating bark;

(3) stream corridors, riparian areas, and upland woodlots which provide forage sites.

It appears that habitat exhibiting the characteristics described above may be present along the proposed project route. However, the photos and site description provided indicate that habitat availability for the Indiana bat at the proposed site is limited. Therefore, we recommend that any trees exhibiting any of the characteristics listed above, as well as surrounding trees, be saved wherever possible. However, if these trees cannot be avoided, they should only be cut between October 1 and March 31.

If there is a Federal nexus for the project (Federal funding provided, Federal permits required to construct, etc.) then no tree clearing on any portion of the parcel should occur until consultation under section 7 of the Endangered Species Act of 1973, as amended, between the Service and the Federal action agency is completed. We recommend that the Federal action agency submit to this office a determination of effects to the Indiana bat for our review and concurrence.

If the applicant plans to clear trees prior to issuance of a 404 and/or 401 permit the following two conditions must be adhered to: 1) Section 7 consultation for the Indiana bat between the Service and the Corps of Engineers must be completed; and 2) No tree clearing on any portion of the parcel should occur until both the Corps and the Ohio EPA anticipate that issuance of both a 404/NWP and a 401 permit authorizing the project as a whole is imminent. This will ensure that clearing will be limited to the footprint of whichever alternative is ultimately permitted, and that no unnecessary clearing will occur. No tree clearing should occur until these two conditions have been satisfied.

All projects in the State of Ohio lie within the range of the **northern long-eared bat** (*Myotis septentrionalis*), a species that is currently proposed for listing as federally endangered. Recently white-nose syndrome (WNS), a novel fungal pathogen, has caused serious declines in the northern long-eared bat population in the northeastern U.S. WNS has also been documented in Ohio, but the full extent of the impacts from WNS in Ohio are not yet known.

During winter, northern long-eared bats hibernate in caves and abandoned mines. Summer habitat requirements for the species are not well defined but the following are considered important:

(1) Roosting habitat in dead or live trees and snags with cavities, peeling or exfoliating bark, split tree trunk and/or branches, which may be used as maternity roost areas;
(2) Foraging habitat in upland and lowland woodlots and tree lined corridors;
(3) Occasionally they may roost in structures like barns and sheds.

The proposed project is in the vicinity of one or more confirmed records of northern long-eared bats. Should habitat exhibiting the characteristics described above be present at the proposed project site, we recommend that they, as well as surrounding trees, be saved wherever possible. Because the project will result in a small amount of forest clearing relative to the available habitat in the immediately surrounding area, habitat removal is unlikely to result in significant impacts to this species. However, because northern long-eared bat presence in the vicinity of the project has been confirmed, clearing of trees during the summer roosting season

may result in direct take of individuals. Therefore, we recommend that any unavoidable tree clearing at the site occur only from October 1 through March 31. Following these seasonal tree clearing restrictions should ensure that any effects to northern long-eared bats are insignificant or discountable. **Please note that, because northern long-eared bat presence has already been confirmed in the project vicinity, any additional surveys would not constitute presence/absence surveys.**

The proposed project lies within the range of the **Kirtland's warbler** (*Setophaga kirtlandii*), a federally listed endangered species. The Kirtland's warbler is a small blue-gray songbird with a bright yellow breast. This species migrates through Ohio in the spring and fall, traveling between its breeding grounds in Michigan, Wisconsin, and Ontario and its wintering grounds in the Bahamas. While migration occurs in a broad front across the entire state, approximately half of all observations in Ohio have occurred within 3 miles of the shore of Lake Erie. During migration, individual birds usually forage in shrub/scrub or forested habitat and may stay in one area for a few days.

Migration is energetically demanding for birds of all species. During stop-over, birds are often faced with the need to acquire food in a short period of time, in unfamiliar surroundings, and while avoiding predators and competing with other migrants and resident birds for limited resources. Studies with captive migrants suggest that individuals in migratory disposition compensate for lost nighttime sleep by increasing the frequency of daytime sleep-like behaviors, potentially rendering them less able to quickly respond to disturbance.

In the spring, migrating Kirtland's warblers stopping over in Ohio will have traveled thousands of miles, will be immediately in need of food to satisfy energetic demands, and are thought to be racing to the breeding grounds to establish territories as early as possible. While fall migration is typically not as fast-paced as spring migration, it appears that fall migrating Kirtland's warblers do not build up fat reserves prior to initiating migration, and therefore nearby stopover habitat would be increasingly important for this species. Because so much of the southern Lake Erie shoreline is already developed, and stopover habitat is already so fragmented, a conservative approach such as avoiding impacts to suitable stopover habitat during the migratory period is appropriate to avoid and minimize potential adverse effects to Kirtland's warbler, as well as other migratory song birds.

Based on migration records of Kirtland's warbler in Ohio, as well as documented phenological patterns across the species' range, we recommend that suitable migration stopover habitat (scrub/shrub and forest habitat) within 3 miles of the shoreline of Lake Erie should be preserved whenever possible. If clearing of suitable habitat cannot be avoided, to preclude adverse effects to Kirtland's warblers, clearing within 3 miles of the shoreline of Lake Erie should not occur from April 22nd – June 1st, or from August 15th – October 15th.

BALD EAGLE COMMENTS: The project lies within the range of the **bald eagle** (*Haliaeetus leucocephalus*). Bald eagles are protected under the Migratory Bird Treaty Act (16 U.S.C. 703-712; MBTA), and are afforded additional legal protection under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d, BGEPA). BGEPA prohibits, among other things, the

killing and disturbance of eagles. To evaluate your project's potential to affect bald eagles, please visit: http://www.fws.gov/midwest/MidwestBird/EaglePermits/baeatake/index.html.

While our database of nest locations may not be complete because new nests are built each year, we currently have no records of bald eagle nests within ½ mile of your proposed project area. In order to avoid take of bald eagles, we recommend that no tree clearing occur within 660 feet of a bald eagle nest or within any woodlot supporting a nest tree. Further we request that work within 660 feet of a nest or within the direct line-of-site of a nest be restricted from January 15 through July 31. This will prevent disturbance of the eagles from the egg-laying period until the young fledge, which encompasses their most vulnerable times.

If these recommendations cannot be implemented and take of bald eagles is likely, a bald eagle take permit for this project may be necessary. Further information on eagle take permits can be found at: http://www.fws.gov/midwest/MidwestBird/EaglePermits/index.html.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species. Should the project design change, or during the term of this action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the Service should be initiated to assess any potential impacts.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the Endangered Species Act of 1973 (ESA), as amended, and are consistent with the intent of the National Environmental Policy Act of 1969 and the U. S. Fish and Wildlife Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed section 7 consultation document. We recommend that the project be coordinated with the Ohio Division of Wildlife due to the potential for the project to affect state listed species. Contact Nathan Reardon, Environmental Review Coordinator with the Division of Wildlife, at (614) 265- 6741 or at Nathan.Reardon@dnr.state.oh.us.

If you have questions, or if we may be of further assistance in this matter, please contact Angela Boyer at extension 22 in this office.

Sincerely,

Mary Knapp

Mary Knapp, Ph.D.
Field Supervisor

cc: Nathan Reardon, ODNR, Division of Wildlife
Jennifer Norris, ODNR, Division of Wildlife
Carolyn Caldwell, ODNR, Division of Wildlife

Environmental Resources Management

1701 Golf Road
Suite 1-700
Rolling Meadows, IL
60008-4242

+1 847 258 8900
+1 847 258 8901 (fax)

December 19, 2014

Angela Boyer
Columbus Ohio Field Office
U.S. Fish and Wildlife Service
4625 Morse Road, Suite 104
Columbus, Ohio 43230

Subject: Avon Lake Gas Addition Project
Lorain County, Ohio

Dear Ms. Boyer:

As you know, NRG Ohio Pipeline Company LLC ("NRG Ohio Pipeline") is planning to install a 24-inch diameter high-grade steel natural gas pipeline that will extend south approximately 20-miles from the existing Avon Lake Power Plant, which is located along the Lake Erie shoreline in the City of Avon Lake, to a proposed supply tap location southwest of the Village of Grafton.

The proposed pipeline will require siting approval from the Ohio Power Siting Board ("OPSB"), as well as permits and approvals from other local, State, and federal agencies. NRG Ohio Pipeline anticipates submitting a Letter of Notification ("LON") for OPSB review in December 2014. NRG Ohio Pipeline has been consulting with various federal, State and local authorities, such as the U.S. Army Corps of Engineers and the Ohio Department of Natural Resources, and will continue to consult with these authorities. Application for permits required for construction of the pipeline will be submitted to the appropriate agencies contemporaneously with the filing of the LON.

Field studies for NRG Ohio Pipeline's proposed route were completed in May 2014. Subsequent to completion of the field studies, some affected property owners requested adjustments to the proposed route, many of which NRG has accommodated. Additional field studies have been conducted in September and October 2014 where the route has been adjusted outside of the May 2014 survey corridor.

Maps illustrating the current proposed route are enclosed with this letter. ERM does not anticipate that the incorporated route adjustments would result in any new or significant adverse impacts to the Indiana bat (*Myotis sodalis*), Northern long-eared bat (*Myotis septentrionalis)* or Kirtland's warbler (*Setophaga kirtlandii*), as the same mitigation measures the Service previously recommended for these species (email correspondence dated April 11, 2014) will be implemented.

Based on the information provided above and as depicted on the enclosed maps, ERM respectfully requests your concurrence with our conclusion that no adverse effects to federal designated listed species are anticipated to occur.

Thank you in advance for your time and consideration. If you have any questions or require additional information about the Project, please do not hesitate to contact me at (616) 738-7370, or via email at jeff.williams@erm.com. You may also contact Nate Rozic at (724) 597-8630, or via email at nathan.rozic@nrg.com.

Sincerely,

Jeff Williams
Senior Biologist

Enclosures: Topographic and Aerial Maps of the Proposed Routes, including a CD

cc: Nate Rozic, NRG
Doni Murphy, ERM
Matt Teichert, ERM

Power to be free™

AVON LAKE GAS ADDITION PROJECT

Proposed Route Overview Map

Lake Erie

Avon Lake Plant

Potential Tap Location

Proposed Tap Location

CUYAHOGA COUNTY

LORAIN COUNTY

MEDINA COUNTY

Avon Lake
Sheffield Lake
Sheffield
Lorain
Avon
Bay Village
Lakewood
Rocky River
Westlake
Fairview Park
Cleveland
North Olmsted
Brook Park
North Ridgeville
Elyria
OLMSTED TOWNSHIP
Berea
Olmsted Falls
Middleburg Heights
South Amherst
Strongsville
Vermilion
Amherst
Oberlin
Kipton
Grafton
Eaton Estates
Brunswick

SHEFFIELD TOWNSHIP
ELYRIA TOWNSHIP
BROWNHELM TOWNSHIP
AMHERST TOWNSHIP
NEW RUSSIA TOWNSHIP
HENRIETTA TOWNSHIP
CARLISLE TOWNSHIP
EATON TOWNSHIP
COLUMBIA TOWNSHIP
CAMDEN TOWNSHIP
PITTSFIELD TOWNSHIP
LAGRANGE TOWNSHIP
GRAFTON TOWNSHIP
LIVERPOOL TOWNSHIP
BRUNSWICK HILLS TOWNSHIP

6 · 611 · 254 · 2 · 301 · 90 · 113 · 57 · 80 · 291 · Alt · 237 · 20 · 17 · 10 · 480 · 252 · 71 · 83 · 58 · 82 · 42 · 511

Legend

- Above Ground Proposed Route
- Below Ground Proposed Route
- County Boundary
- Political Township Boundary
- Municipal Boundary
- Railroad

Roads

- Interstate
- US Highway
- State Highway

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AVON LAKE GAS ADDITION PROJECT

Proposed Route

Legend

- Above Ground Proposed Route
- Below Ground Proposed Route
- Mile Post
- NWI Wetland
- Ohio Wetland Inventory Wetland
- Known Protected Species Occurance
- Lake
- River/Stream
- County Boundary
- Political Township Boundary
- Municipal Boundary
- Railroad

Roads

- Interstate
- US Highway
- State Highway

Aerial Photo Source: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community

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AVON LAKE GAS ADDITION PROJECT

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Aerial Photo Source: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community

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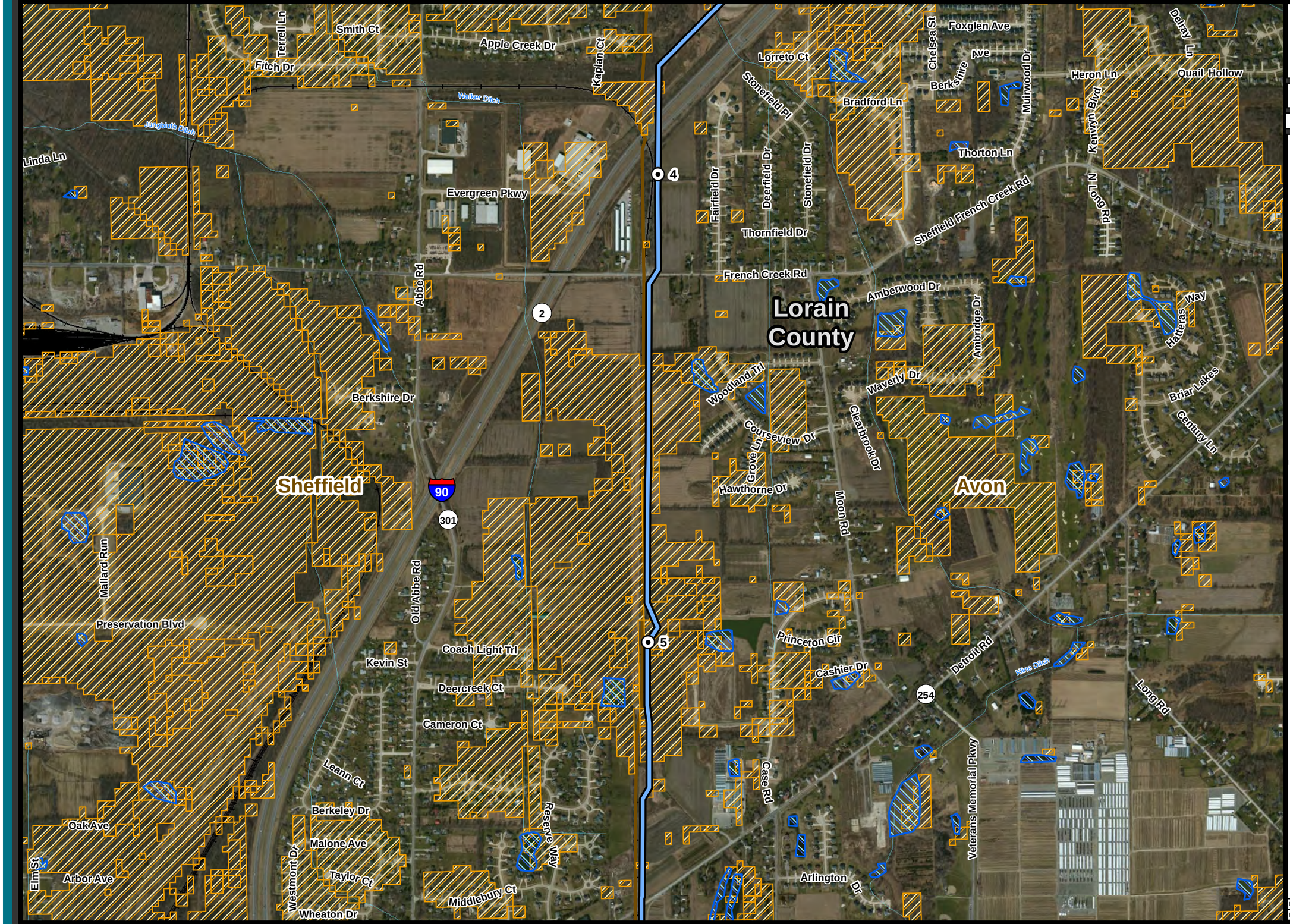
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Sheffield Lake
Oster Rd
Avon Lake
Pin Oak Pkwy
2
Miller Rd
Moore Rd
Freeman Dr
Lorain County
Schueller Ditch
Abbe Rd
Schueller Blvd
Kingsbury Ditch
Chester Industrial Pkwy
Sheffield
301
611
Avon
Birch Ln
Avins Ditch
Chester Rd
French Creek
Colorado Ave
3
90
Cypress W
Cypress E
N Doovys St
Caroline Dr
Lorie Blvd
Lake Dr
Doovys St
Eaton Dr
2
Barkwood Dr
Walker Ditch
Pin Oak Cir
Burrell Dr
Oakwood Dr
Terrell Ln
Chapman Ave
Fitch Dr
Country Club Dr
Chelsea St
Conrad St
Foxglen Ave
Quail Hollow



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AVON LAKE GAS ADDITION PROJECT

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Aerial Photo Source: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community

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nrg
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AVON LAKE GAS ADDITION PROJECT

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Arbor Ave
Elm St
Walnut Ave
Taylor Ct
Middlebury Ct
Wheaton Dr
Parkhurst Dr
Detroit Rd
254
Transportation Dr
2
Sheffield
Waterford Cir
Waterford Dr
Abbe Rd
Hoag Dr
Clover Dr
Meadow Lane Ct
Goldenrod Cir
90
Loyola Dr
301
Pepperdine Dr
Antioch Dr
Hemlock Dr
Timberlane Dr
Villanova Cir
Huntington Cir
Greenway Dr
Naples Dr
Campagna St
Gulf Rd
Antoinette St
College Park Dr
Elyria
Abbe Rd N
College Dr
Hillcrest Dr
Hillcrest
Black River
Riddeway Ditch
Windward Dr
Crestview Dr
Finwood Dr
Burns Rd
6
7
Arlington Dr
Evergreen Dr
Case Rd
Stallion Ct
Steeple Chase
Derby Dr
Belmont Dr
Secretariat Ct
Churchill Dr
Bridle Ct
Camelot Way
Somerset Ct
Veterans Memorial Pkwy
Kline Ditch
Avon
Lorain County
Park Tr/ Weatherstone Dr
Windsor Dr
Overlook Ct
Ravenway Dr
Hidden View Ct
Avalon Dr
Kingston Dr
Millenium Ct
Springdale Dr
Pelican Lake Dr
Country Meadow Way
Sun Meadow Ct
Autumn Ln
Lavender Ct
North Ridgeville
Otten Rd
Deer Lake Dr
Stoney Lake Dr
Barres Rd
Jungbluth Ditch
W Breezeway Dr

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AVON LAKE GAS ADDITION PROJECT

Proposed Route

Legend

- Above Ground Proposed Route
- Below Ground Proposed Route
- Mile Post
- NWI Wetland
- Ohio Wetland Inventory Wetland
- Known Protected Species Occurance
- Lake
- River/Stream
- County Boundary
- Political Township Boundary
- Municipal Boundary
- Railroad

Roads

- Interstate
- US Highway
- State Highway

Aerial Photo Source: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community

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Finwood Ct
Briar Lake Dr
Nottingham Dr
Woodridge Dr
Woodview Dr
Northfield Dr
Buckingham Dr
Brookvalley Dr
Meadow Dr
Rosewood Dr
Sandalwood Dr
Crestview Dr
Hollywood Dr
Windsor Dr
Alexander Dr
Salem Ave
Canterbury Rd
Fairwood Blvd
Belmar Ct
Jamestown Ave
Tarry Ln
Whitman Blvd
Skylark Ct
Livermore Ln
Gulf Rd
Wilder Ave
Stafford Dr
Sherwood Ave
Black River
Vista Ct
Hartford Dr
Elyria
Randall Rd
Nash Ave
Bedford Ave
Abbe Rd N
Bennett Dr
Rosealee Ave
Berkshire Rd
Wilshire Ct
N Pasadena Ave
Howard St
Metcalf Rd
Augdon Dr
Olivet Dr
Dorset Ct
Valley Blvd
Dowd Rd
Reeve Rd
Ambler Dr
Edwin Ave
Case Rd
Hilliard Rd
Lucille Dr
Duffey St
Alden Ave
Songbird Ln
Larkmont Dr
Watson St
Potential Tap Location
John F Kennedy Mem Pkwy
Dyke Ave
Fowlers Run
Sycamore St
Simon St
N Glen
S Glen
Center Ridge Rd
Ohio Turnpike
Ridgeway Ditch
Race Rd
Poplar St
Elma Dr
Dilworth St
Caroline St
Preston St
Greely St
Cleveland St
Harwood St
Brandtson Ave
Pasadena Ave
Roosevelt Ave
Olive St
Bellfield Ave
Longford Ave
Marseilles Ave
Beebe Ave
Hawthorne St
Longfellow St
Bon Air Ave
Wesley Ave
White Oak Dr
Frances Blvd
Brittany Ln
Lorain County
North Ridgeville
Otten Rd
W Breezeway Dr
Sandy Ridge Dr
Majestic Dr
Wildlife Trl
Meadow Lakes Blvd
301
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AVON LAKE GAS ADDITION PROJECT

Proposed Route

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AVON LAKE GAS ADDITION PROJECT

Proposed Route

Legend

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Date: 12/15/2014 | Page: 7

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AVON LAKE GAS ADDITION PROJECT

Proposed Route

Legend

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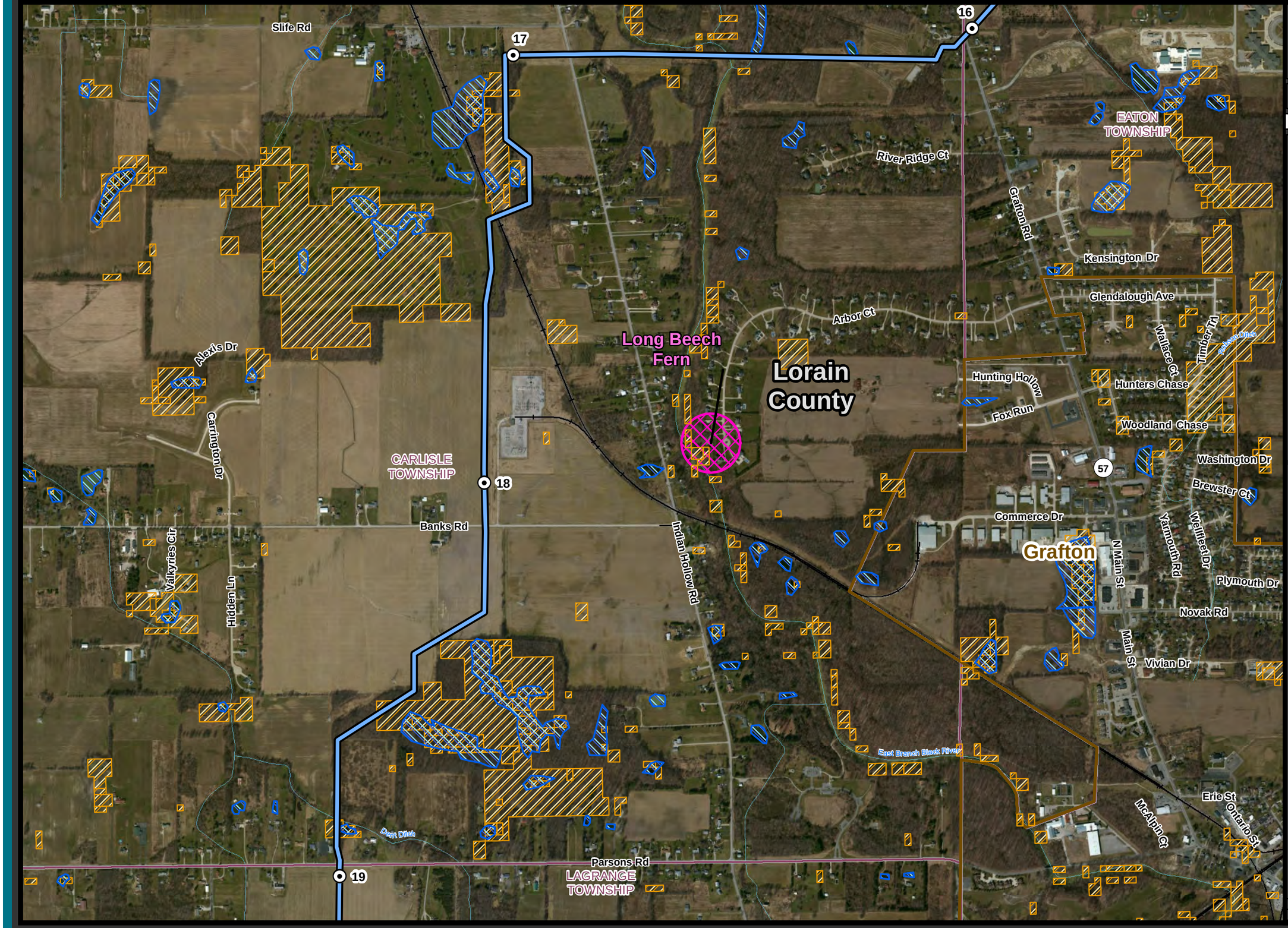


Date: 12/15/2014 | Page: 8

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Flint Ridge Dr
Overlook Dr
Davis Dr
East Branch Black River
Sabol Ct
Giles Rd
Willow Creek
Jackson Ditch
14
Robson Rd
Edgewood Dr
Georgette Dr
Brentview Dr
Waterfall Dr
Lakeview Dr
Meadowbrook Dr
Esther Dr
Sycamore Ln
CARLISLE TOWNSHIP
Grafton Rd
Eastwood Dr
Castleton Ln
Hill Ditch
82
Royalton Rd
Lorain County
EATON TOWNSHIP
Durkee Rd
Great Blue Heron Rookery
57
Beaver Creek Ln
15
Capel Rd
Alexander Ditch
Liberty Ln
16



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AVON LAKE GAS ADDITION PROJECT

Proposed Route

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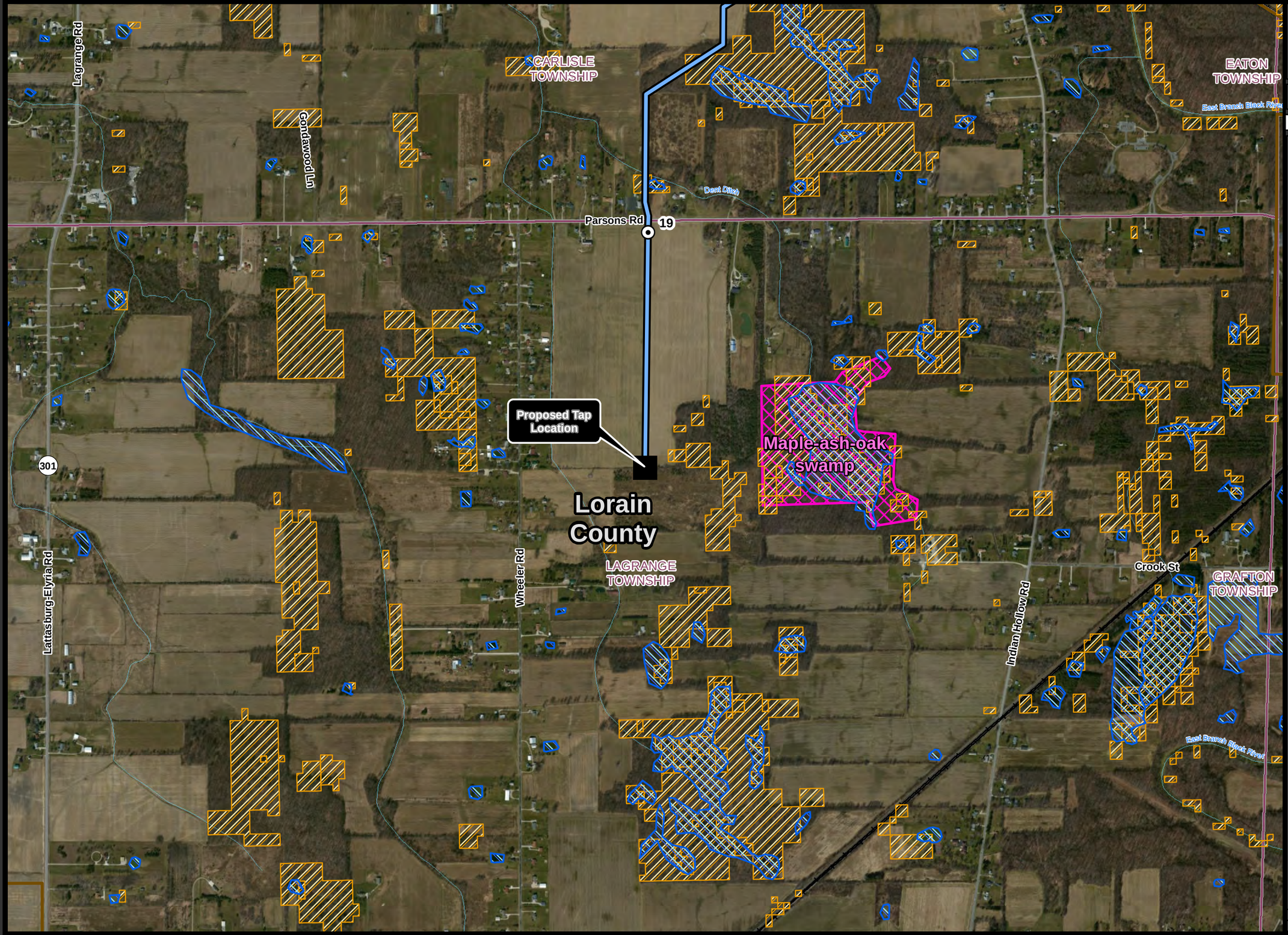
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AVON LAKE GAS ADDITION PROJECT

Proposed Route

Legend

- Above Ground Proposed Route
- Below Ground Proposed Route
- Mile Post
- NWI Wetland
- Ohio Wetland Inventory Wetland
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- Municipal Boundary
- Railroad

Roads

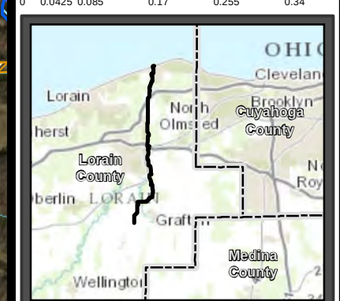
- Interstate
- US Highway
- State Highway

Aerial Photo Source: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community

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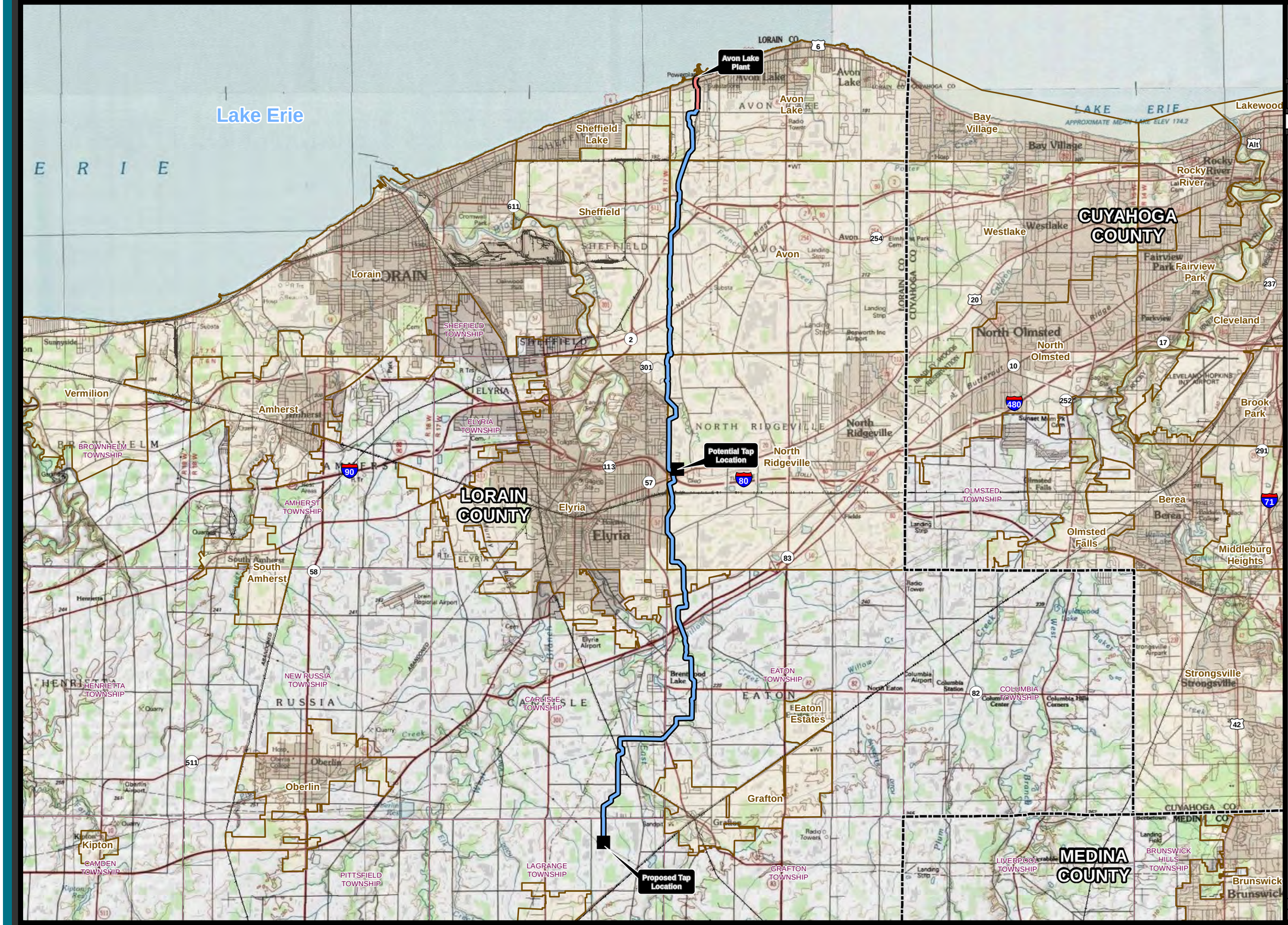
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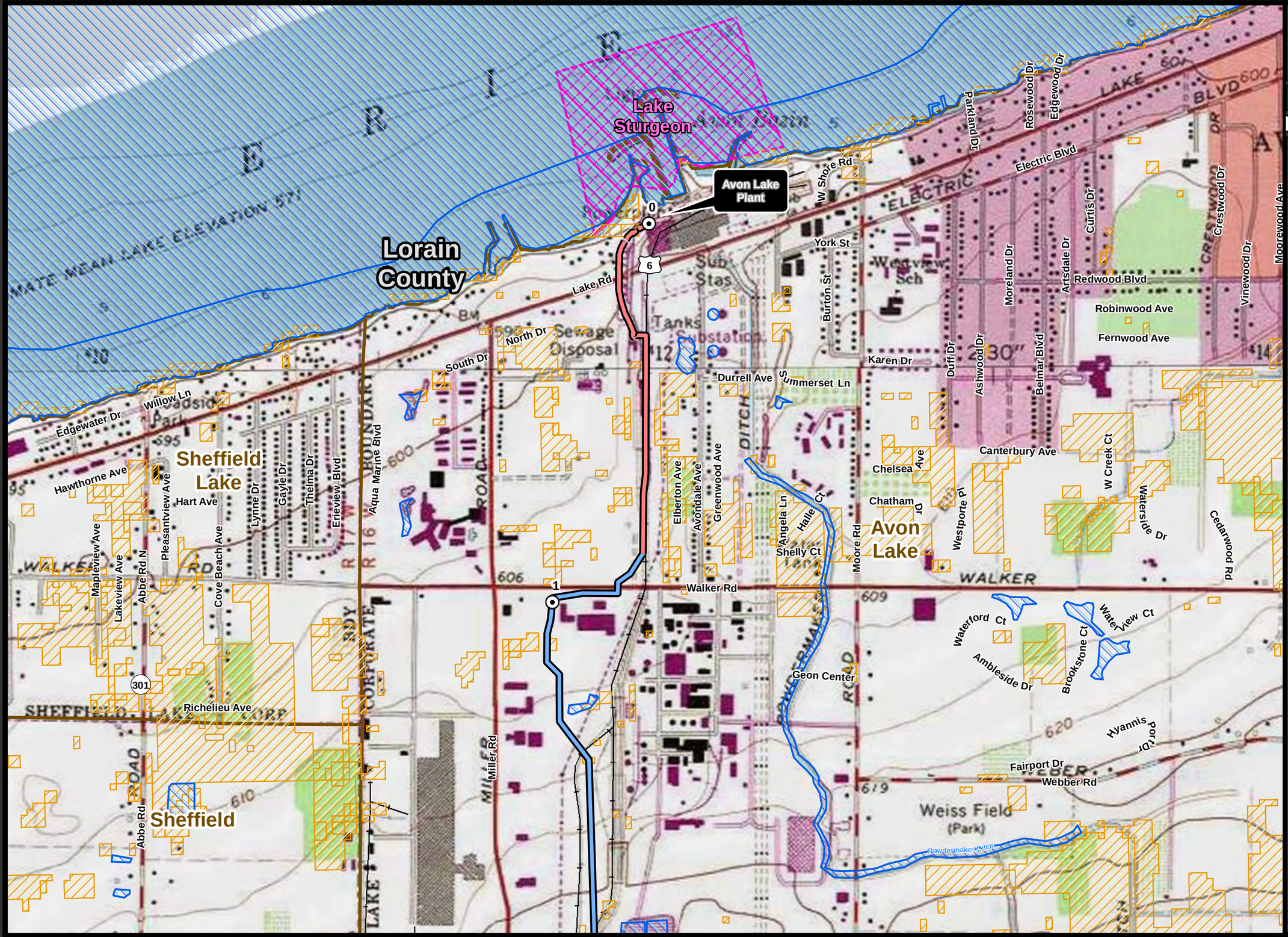
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AVON LAKE GAS ADDITION PROJECT

Proposed Route Overview Map



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AVON LAKE GAS ADDITION PROJECT

Proposed Route

Legend

- Above Ground Proposed Route
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- Mile Post
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Topo Base Map Source: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community
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AVON LAKE GAS ADDITION PROJECT

Proposed Route

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Sheffield Lake
Knollwood Sch
Oster Rd
OSTER ROAD
ABBE
AVON LAKE
Avon Lake
Pin Oak Pkwy
WESTERN
AVON LAKE
AVON
Substation
DITCH
Miller Rd
Moore Rd
Freeman Dr
Lorain County
Schumaker Ditch
Sheffield
Abbe Rd
Schueller Blvd
Klingshirn Ditch
Chester Industrial Pkwy
Birch Ln
Avins Ditch
Avon
Chester Rd
AVINS
Cypress W
Cypress E
St Teresa Sch
St Teresa Cem
French Creek
Colorado Ave
Creek
90
N Doovys St
Caroline Dr
Lorie Blvd
Lake Dr
Doovys St
Eaton Dr
INTERCHANGE 151
AVE
Sewage Disposal
Barkwood Dr
Pin Oak Cir
Walker Ditch
Burrell Dr
Oakwood Dr
Terrell Ln
Chapman Ave
Fitch Dr
Country Club Dr
Chelsea St
Conrad St
Foxglen Ave
Quail Hollow
LORAIN
2
3
301
611
625
630

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AVON LAKE GAS ADDITION PROJECT

Proposed Route

Legend

- Above Ground Proposed Route
- Below Ground Proposed Route
- Mile Post
- NWI Wetland
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Topo Base Map Source: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community
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AVON LAKE GAS ADDITION PROJECT

Proposed Route

Legend

- Above Ground Proposed Route
- Below Ground Proposed Route
- Mile Post
- NWI Wetland
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- Known Protected Species Occurance
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AVON LAKE GAS ADDITION PROJECT

Proposed Route

Legend

- Above Ground Proposed Route
- Below Ground Proposed Route
- Mile Post
- NWI Wetland
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Elyria
Lorain County
North Ridgeville
Potential Tap Location
Elyria Park
Shopping Center
Spring Valley Golf Club
Spring Valley Sch
High Sch
St Judes Sch
Allen Sch
Finwood Ct
Briar Lake Dr
Nottingham Dr
Buckingham Dr
Woodridge Dr
Woodview Dr
Northfield Dr
Rosewood Dr
Brookvalley Dr
Meadow Dr
Sandalwood Dr
Crestview Dr
Hollywood Dr
Windsor Dr
Alexander Dr
Salem Ave
Canterbury Rd
Fairwood Blvd
Belmar Ct
Jamestown Ave
Tarry Ln
Whitman Blvd
Skylark Ct
Livermore Ln
Guilford Rd
Stafford Dr
Wilder Ave
Sherwood Ave
Vista Ct
Hartford Dr
Randall Rd
Nash Ave
Bennett Dr
Bedford Ave
Berkshire Rd
Wilshire Ct
Howard St
Metcalf Rd
Dorset Ct
Olivet Dr
Augdon Dr
Valley Blvd
Dowd Rd
Reeve Rd
Ambler Dr
Edwin Ave
Hilliard Rd
Duffey St
Alden Ave
Lucille Dr
Watson St
Larkmont Dr
John F Kennedy Mem Pkwy
Dyke Ave
Sycamore St
Simon St
N Glen
S Glen
Center Ridge Rd
Poplar St
Ridgeway Ditch
Elma Dr
Dilworth St
Caroline St
Preston St
Greely St
Cleveland St
Otten Rd
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W Breezeway Dr
Majestic Dr
Wildlife Trl
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Fowlers Run
Race Rd
Ohio Turnpike
Frances Blvd
Wesley Ave
White Oak Dr
Bon Air Ave
Longfellow St
Hawthorne St
Beebe Ave
Marseilles Ave
Longford Ave
Bellfield Ave
Olive St
Roosevelt Ave
Pasadena Ave
Brandtson Ave
Harwood St
Rosealee Ave
Abbe Rd N
Black River

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AVON LAKE GAS ADDITION PROJECT

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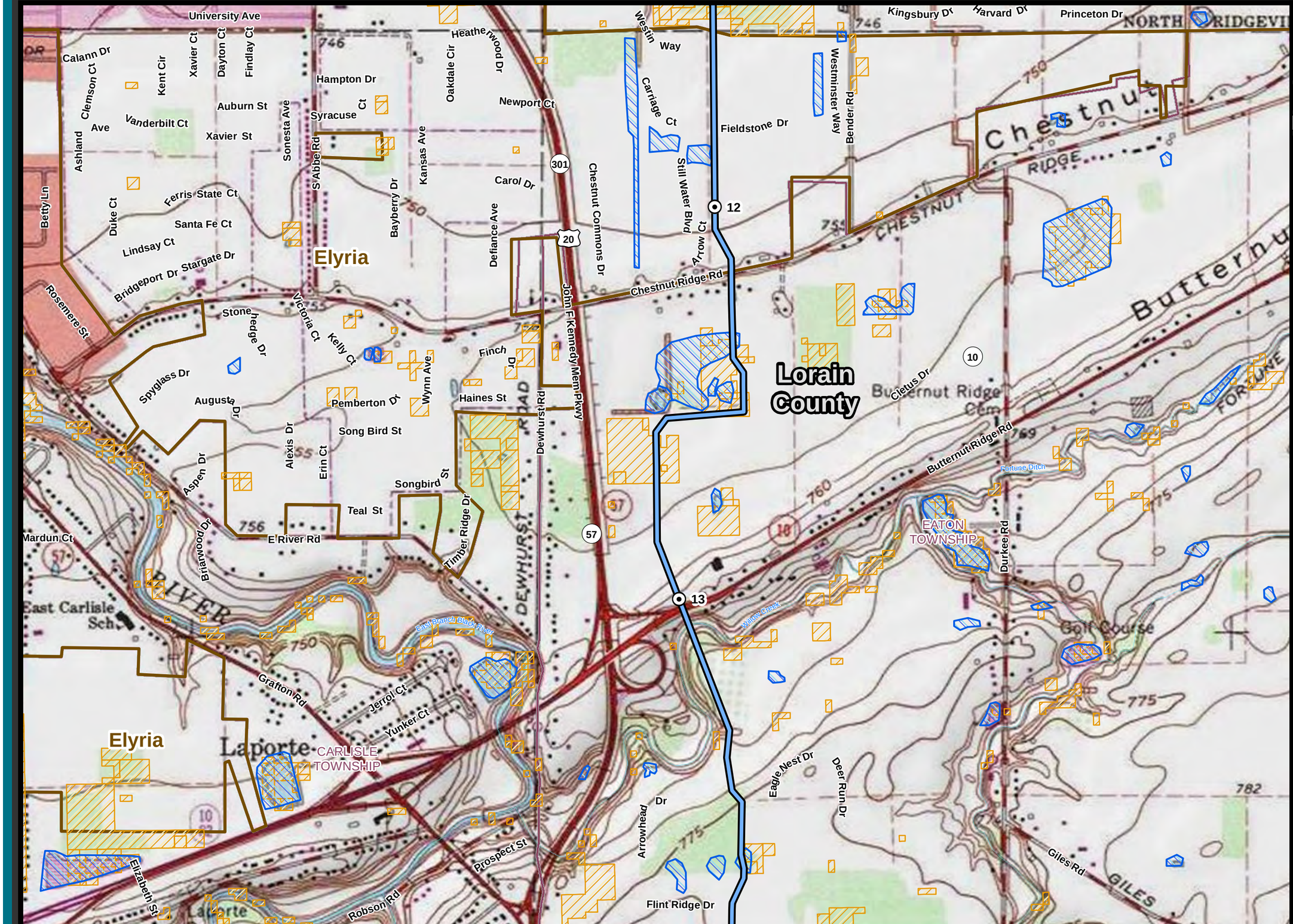
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AVON LAKE GAS ADDITION PROJECT

Proposed Route

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AVON LAKE GAS ADDITION PROJECT

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Sabol Ct
Giles Rd
Willow Creek
Jackson Ditch
Brush Sch
Castleton Ln
Hill Ditch
Eastwood Dr
Royalton Rd
Lorain County
Field
EATON TOWNSHIP
Durkee Rd
Great Blue Heron Rookery
Overlook Dr
Davis Dr
East Branch Black River
Robson Rd
Edgewood Dr
Georgette Dr
Brentview Dr
Waterfall Dr
Lakeview Dr
Meadowbrook Dr
Esther Dr
Brentwood Lake
Sycamore Ln
CARLISLE TOWNSHIP
Grafton Rd
Beaver Creek Ln
ROBSON ROAD
Golf Course
Capel Rd
Midview High Sch
Alexander Ditch
Liberty Ln
Gas Well
St Mary
14
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16
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82

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AVON LAKE GAS ADDITION PROJECT

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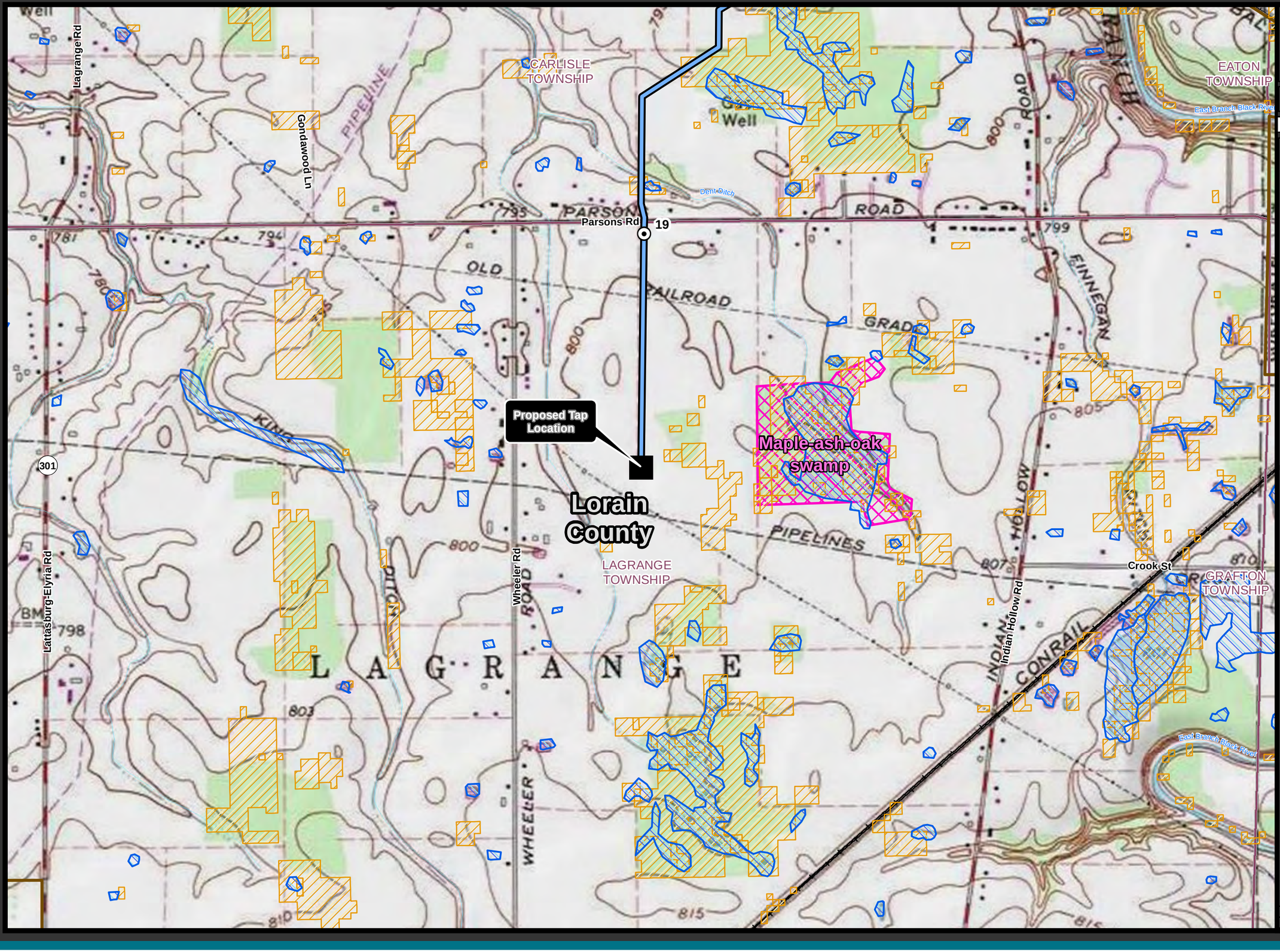


Date: 12/15/2014 | Page: 9

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Slife Rd
ROAD
PIPELINE
Alexis Dr
Carrington Dr
DITCH
CARLISLE TOWNSHIP
Gas Well
Banks Rd
Valkyries Cir
Hidden Ln
Indian Hollow Rd
Long Beech Fern
Lorain County
Arbor Ct
River Ridge Ct
St Marys Cem
EATON TOWNSHIP
Grafton Rd
Kensington Dr
Glendalough Ave
Wallace Ct
Timber Trl
Raiser Ditch
Hunting Hollow
Fox Run
Hunters Chase
Woodland Chase
Washington Dr
Brewster Ct
Commerce Dr
Grafton
N Main St
Yarmouth Rd
Wellfleet Dr
Plymouth Dr
Novak Rd
Vivian Dr
Main St
BOUNDARY
BALTIMORE
BRANCH
East Branch Black River
Sewage Disposal
McAlpin Ct
Erie St
Ontario St
Brandt Ditch
PARSONS
Parsons Rd
LAGRANGE TOWNSHIP
BLACK
Snoopit
OLD
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AVON LAKE GAS ADDITION PROJECT

Proposed Route

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- River/Stream
- County Boundary
- Political Township Boundary
- Municipal Boundary
- Railroad

Roads

- Interstate
- US Highway
- State Highway

Topo Base Map Source: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community
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MP 6
MP 7
MP 8
MP 9
MP 10
MP 11
MP 12

Site Location



Map Index



Legend

- Milepost Preferred Route
- Preferred Route 200' Corridor
- Highway
- Major Road
- Other Major Road

0 1,000 2,000 4,000 Feet

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NRG Ohio Pipeline Company LLC
Avon Lake Pipeline Project

Location Map

AECOM

Figure 1
January 2014

Data Sources: Lorain County GIS Data 2013
Imagery: Bing Map Topo

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MP 19
MP 18
MP 17
MP 16
MP 15
MP 14
MP 13

Site Location



Map Index



Legend

- Milepost Preferred Route
- Preferred Route 200' Corridor
- Highway
- Major Road
- Other Major Road

0 1,000 2,000 4,000 Feet

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NRG Ohio Pipeline Company LLC
Avon Lake Pipeline Project

Location Map

Page 3 of 3

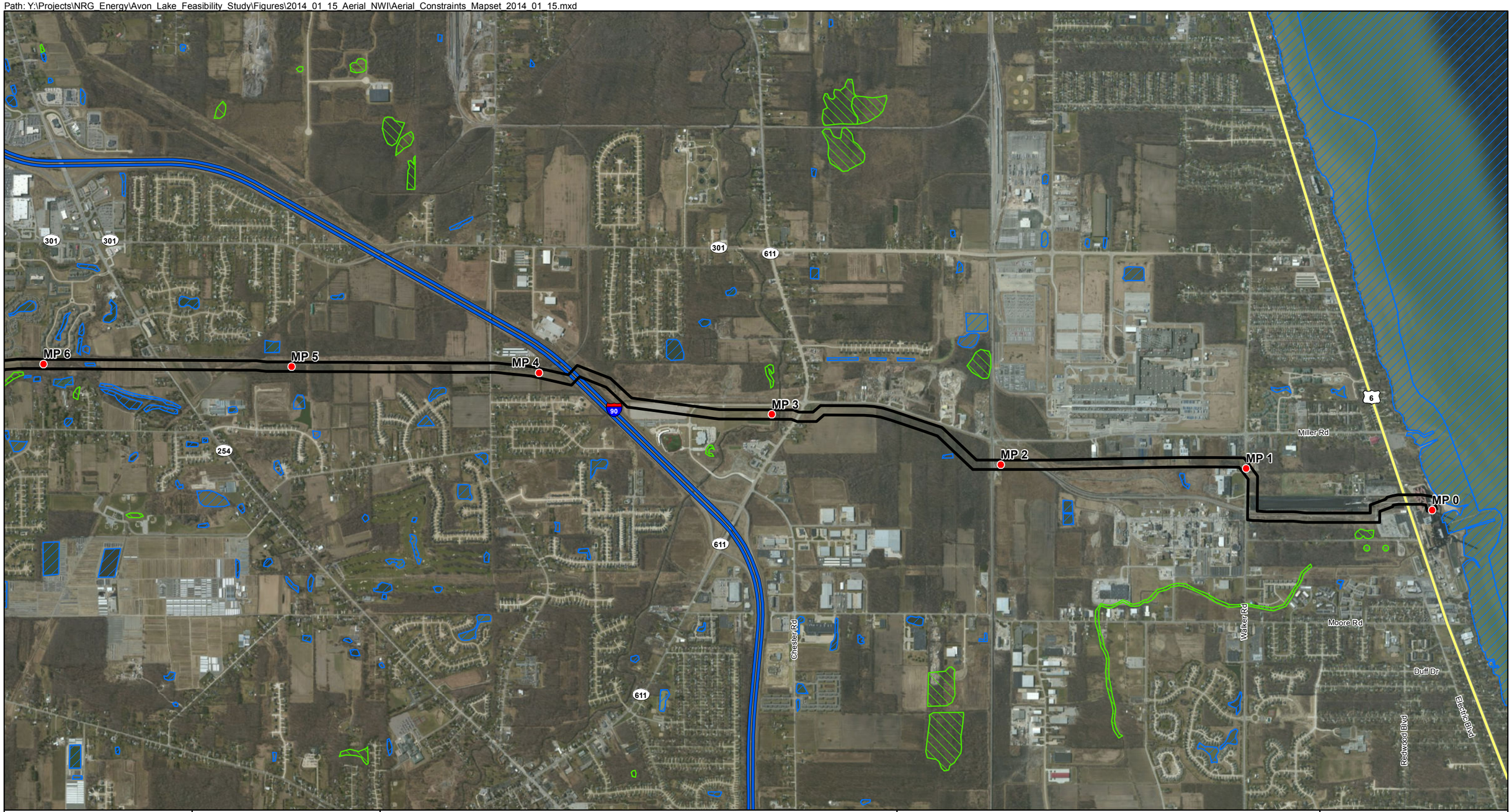
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Figure 1

January 2014

Data Sources: Lorain County GIS Data 2013
Imagery: Bing Map Topo

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Site Location



Map Index



Legend

- Milepost Preferred Route
- Preferred Route 200' Corridor
- NWI Wetland
- NWI Waterbody
- Highway
- Major Road
- Other Major Road

0 1,000 2,000 4,000 Feet

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NRG Ohio Pipeline Company LLC
Avon Lake Pipeline Project

Aerial Map

Page 1 of 3

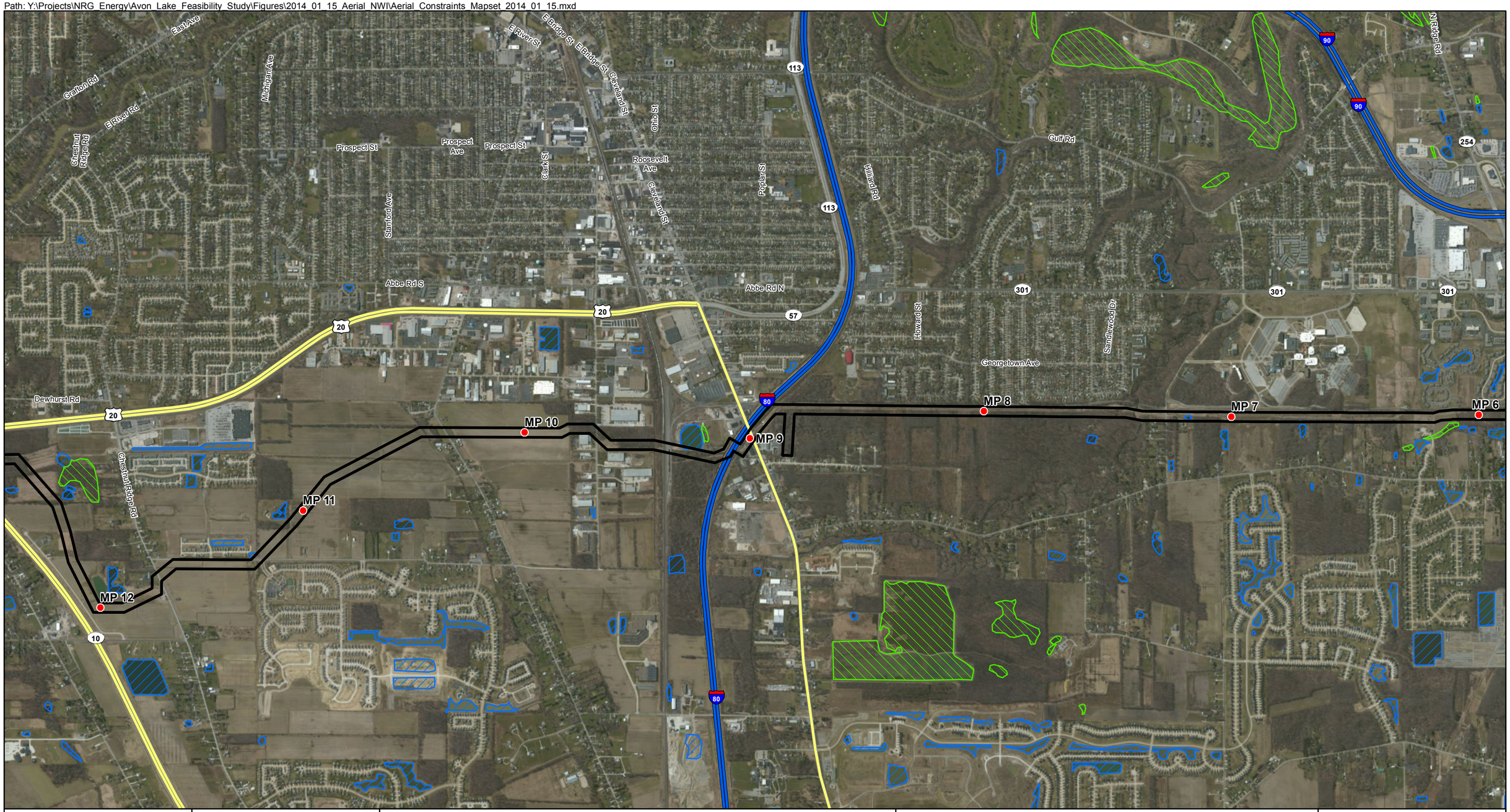
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Figure 2

January 2014

Data Sources: A Lorain County GIS Data 2013; NWI Data 2013
Imagery: Bing Map Aerials

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Site Location



Map Index



Legend

- Milepost Preferred Route
- Preferred Route 200' Corridor
- NWI Wetland
- NWI Waterbody
- Highway
- Major Road
- Other Major Road

0 1,000 2,000 4,000 Feet

1:24,000

NRG Ohio Pipeline Company LLC
Avon Lake Pipeline Project

Aerial Map

AECOM

Figure 2

January 2014

Data Sources: A Lorain County GIS Data 2013; NWI Data 2013
Imagery: Bing Map Aerials

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MP 19
MP 18
MP 17
MP 16
MP 15
MP 14
MP 13
57
20
82
10
Crafton Rd
E River Rd
Dewhurst Rd

Site Location



Map Index



Legend

- Milepost Preferred Route
- Preferred Route 200' Corridor
- NWI Wetland
- NWI Waterbody
- Highway
- Major Road
- Other Major Road

0 1,000 2,000 4,000 Feet

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NRG Ohio Pipeline Company LLC
Avon Lake Pipeline Project

Aerial Map

AECOM

Figure 2
January 2014

Data Sources: A Lorain County GIS Data 2013; NWI Data 2013
Imagery: Bing Map Aerials

NRG Ohio Pipeline Company LLC
Avon Lake Pipeline Project

Latitude and Longitude for 1,000ft Increments along the Proposed Pipeline Route

1,000 foot Increments	Latitude	Longitude
Pipeline Start 0	41.50435455	-82.05555704
1000	41.50204446	-82.0563126
2000	41.49996644	-82.05499425
3000	41.49722204	-82.05501984
4000	41.49448256	-82.05515567
5000	41.49388315	-82.0580238
6000	41.49168198	-82.05935427
7000	41.48893768	-82.05935081
8000	41.48619346	-82.05930147
9000	41.48344919	-82.05925603
10000	41.48070482	-82.05924448
11000	41.47796037	-82.05926292
12000	41.47588761	-82.06150016
13000	41.47337249	-82.06285807
14000	41.47069393	-82.06351451
15000	41.46809119	-82.06305037
16000	41.46537249	-82.06325117
17000	41.46262899	-82.06330116
18000	41.45990907	-82.06378836
19000	41.45727362	-82.06451079
20000	41.4550024	-82.06644251
21000	41.45255398	-82.06644941
22000	41.44984009	-82.06695539
23000	41.44709623	-82.06700887
24000	41.44435185	-82.06704456
25000	41.44160745	-82.06707792
26000	41.43886306	-82.06711287
27000	41.43611964	-82.06717635
28000	41.43337882	-82.06728068
29000	41.43063448	-82.06732311
30000	41.42789014	-82.06736552
31000	41.4251458	-82.06740794
32000	41.42240149	-82.06745452

33000	41.41967505	-82.06724978
34000	41.41693062	-82.06728113
35000	41.41418617	-82.0673099
36000	41.41144173	-82.06734045
37000	41.4086974	-82.06738577
38000	41.40595312	-82.06743601
39000	41.40321652	-82.06758446
40000	41.40048345	-82.06778074
41000	41.39773919	-82.06783288
42000	41.3949952	-82.0678897
43000	41.392251	-82.0679477
44000	41.38950675	-82.06800246
45000	41.3867625	-82.06805661
46000	41.38401824	-82.06811075
47000	41.38152686	-82.06738526
48000	41.37976483	-82.0652663
49000	41.37741257	-82.06472186
50000	41.3747236	-82.06541149
51000	41.37209519	-82.06581188
52000	41.36966572	-82.06645451
53000	41.36692992	-82.06643551
54000	41.36418544	-82.06646616
55000	41.36144096	-82.0664968
56000	41.35899475	-82.06486299
57000	41.35655455	-82.06319569
58000	41.3546299	-82.06067859
59000	41.35278343	-82.05798748
60000	41.35057668	-82.05630881
61000	41.34783216	-82.05633398
62000	41.34592877	-82.05450472
63000	41.34359141	-82.05298779
64000	41.3416922	-82.05482356
65000	41.34073006	-82.05820787
66000	41.33974448	-82.06154769
67000	41.33793579	-82.06428673
68000	41.33534556	-82.0641007
69000	41.33277843	-82.06281255
70000	41.3307885	-82.06081935
71000	41.33060179	-82.05730651
72000	41.329133	-82.05502398
73000	41.32641396	-82.05481795
74000	41.32410075	-82.0561957

75000	41.32287542	-82.05911915
76000	41.32013087	-82.05914366
77000	41.31761931	-82.05853013
78000	41.31527999	-82.05746311
79000	41.31266071	-82.05788968
80000	41.31109899	-82.06081037
81000	41.31111275	-82.06445043
82000	41.31083414	-82.06803369
83000	41.30818019	-82.06826852
84000	41.30611461	-82.06978856
85000	41.30527212	-82.07300498
86000	41.30358825	-82.0753455
87000	41.30084956	-82.075518
88000	41.29812373	-82.07594308
89000	41.29789151	-82.07932161
90000	41.29777609	-82.08291462
91000	41.29782608	-82.08651429
92000	41.29639487	-82.08921895
93000	41.29385127	-82.08785183
94000	41.29130766	-82.08648482
95000	41.28875462	-82.08517879
96000	41.28621906	-82.08427327
97000	41.28376863	-82.08298303
98000	41.28106303	-82.08256495
99000	41.27864895	-82.08252688
100000	41.2761143	-82.08353362
101000	41.27369579	-82.08465466
102000	41.27104314	-82.08440355
103000	41.26833444	-82.08408662
Pipeline End 104000	41.26560271	-82.08392542

Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR JAMES ZEHRINGER, DIRECTOR

Office of Real Estate
Paul R. Baldridge, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6649
Fax: (614) 267-4764

February 28, 2014

Nate Rozic
NRG Ohio Pipeline Company, LLC
121 Champion Way, Suite 300
Canonsburg Pennsylvania 15317

Re: 14-065; NRG Ohio Pipeline Company, LLC, Avon Lake Pipeline Project, Lorain County, Ohio

Project: The project entails the construction of 20 miles of natural gas pipeline in the Cities of Avon Lake, Avon, North Ridgeville, and Elyria.

Location: The project is located in Eaton, Carlisle, Lagrange Townships, Lorain County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Fish and Wildlife: The Division of Wildlife (DOW) has the following comments.

The DOW recommends that impacts to wetlands and other water resources be avoided and minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.

This project must not have an impact on freshwater native mussels in the area. This applies to both listed and non-listed species. The Ohio Mussel Survey Protocol requires a mussel survey for streams, and water bodies listed in Appendix A of the protocol. Streams with a watershed of 10^2 miles or larger above the impact point that are not listed in Appendix A of the protocol should also be assessed for mussels and/or mussel habitat. Mussel surveys may be recommended for these streams as well. Therefore, if in-water work is planned in any streams that meet any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, as a last resort, the DOW recommends a professional malacologist collect and relocates the mussels to suitable and similar habitat. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol.

The project is within the range of the Indiana bat (*Myotis sodalis*), a state and federally endangered species. The following species of trees have relatively high value as potential Indiana bat roost trees: Shagbark hickory (*Carya ovata*), Shellbark hickory (*Carya laciniosa*), Bitternut hickory (*Carya cordiformis)*, Black ash (*Fraxinus nigra*), Green ash (*Fraxinus pennsylvanica*), White ash (*Fraxinus americana*), Shingle oak (*Quercus imbricaria*), Northern red oak (*Quercus rubra*), Slippery elm (*Ulmus rubra*), American elm (*Ulmus americana*), Eastern cottonwood (*Populus deltoides*), Silver maple (*Acer saccharinum*), Sassafras (*Sassafras albidum*), Post oak (*Quercus stellata*), and White oak (*Quercus alba*). Indiana bat habitat consists of suitable trees that include dead and dying trees with exfoliating bark, crevices, or cavities in upland areas or riparian corridors and living trees with exfoliating bark, cavities, or hollow areas formed from broken branches or tops. If suitable trees occur within the project area, these trees should be conserved. If suitable habitat occurs on the project area and trees must be cut, cutting must occur between October 1 and March 31. If suitable trees must be cut during the summer months, a net survey must be conducted between June 15 and July 31, prior to cutting. Net surveys shall incorporate either two net sites per square kilometer of project area with each net site containing a minimum of two nets used for two consecutive nights, or one net site per kilometer of stream within the project limits with each net site containing a minimum of two nets used for two consecutive nights. If no tree removal is proposed, the project is not likely to impact this species.

The DOW recommends no in-water work from at least April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat.

The ODNR Natural Heritage Database has a record within one mile of the project route for a great blue heron rookery. Due to the location, and the type of work planned, this project is not likely to impact this animal assemblage.

The ODNR Natural Heritage Database has a record within one mile of the project route for the lake sturgeon (*Acipenser fulvescens*), a state endangered, and a federal species of concern. If there is no in-water work planned in Lake Erie, this project is not likely to impact this species.

The project is within the range of the piping plover (*Charadrius melodus*), a state and federally endangered bird species. This species does not nest in the state but only utilize stopover habitat as it migrates through the region. Therefore, the project is not likely to have an impact on this species.

The project is within the range of the Kirtland's warbler (*Setophaga kirtlandii*), a state endangered and federally endangered species. This species migrates through Ohio in the spring and fall, traveling between its breeding grounds in Michigan, Wisconsin, and Ontario and its wintering grounds in the Bahamas. Migration is energetically demanding for birds of all species. During stop-over, birds are often faced with the need to acquire food in a short period of time, in unfamiliar surroundings, and while avoiding predators and competing with other migrants and resident birds for limited resources.

In the spring, migrating Kirtland's warblers stopping over in Ohio will have traveled thousands of miles, will be immediately in need of food to satisfy energetic demands, and are thought to be racing to the breeding grounds to establish territories as early as possible. While fall migration is typically not as fast-paced as spring migration, it appears that fall migrating Kirtland's warblers do not build up fat reserves prior to initiating migration, and therefore nearby stopover habitat would be increasingly important for this species.

While migration occurs in a broad front across the entire state, approximately half of all observations in Ohio have occurred within 3 miles of the shore of Lake Erie. During migration, individual birds usually forage in shrub/scrub or forested habitat and may stay in one area for a few days. Because so much of the southern Lake Erie shoreline is already developed, and stopover habitat is already so fragmented, the

DOW recommends that this stopover habitat, (i.e. shrub/scrub or forested area), within three miles of the shoreline be preserved whenever possible. If clearing of suitable habitat cannot be avoided, to preclude adverse effects to Kirtland's warblers, clearing within 3 miles of the shoreline of Lake Erie should not occur from April 22 to June 1 or from August 15 to October 15.

The project is within the range of the spotted turtle (*Clemmys guttata*), a state threatened species. This species prefers fens, bogs and marshes, but also is known to inhabit wet prairies, meadows, pond edges, wet woods, and the shallow sluggish waters of small streams and ditches. Due to the location, the habitat at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

Attached is a set of ArcView shape files with the Ohio Natural Heritage Program records for the project. The files are projected in NAD83 Ohio State Plane South. The units are feet. Records included in the "data" layer may be for rare and endangered plants and animals, geologic features, high quality plant communities and animal assemblages. Fields included are scientific and common names, state and federal statuses, as well as managed area and date of the most recent observation. State and federal statuses are defined as: E = endangered, T = threatened, P = potentially threatened, SC = species of concern, SI = special interest, A = recently added to inventory, status not yet determined, FE = federal endangered, FT = federal threatened, FPE = federal potentially endangered, FC = federal candidate and FSC = federal species of concern.

Also included is a layer for Scenic Rivers ('sr'), Conservation Sites ('sites') and managed areas ('ma') which includes state wildlife areas, nature preserves, parks and forests, national wildlife refuges, county metro parks, as well as sites owned by non-profit groups (such as The Nature Conservancy), museums (such as the Cleveland Museum of Natural History), and others. Please be aware that the managed areas layer may not be complete. We are continually updating this layer as additional information becomes available to us.

The ODNR Natural Heritage Database has no other records for rare or endangered species at this project site. We are unaware of any other unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, nature preserves, parks or forests, national wildlife refuges or other protected natural areas within the project area. Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Please note that although we inventory all types of plant communities, we only maintain records on the highest quality areas.

ODNR appreciates the opportunity to provide these comments. Please contact John Kessler at (614) 265-6621 if you have questions about these comments or need additional information.

John Kessler
ODNR Office of Real Estate
2045 Morse Road, Building E-2
Columbus, Ohio 43229-6693
John.Kessler@dnr.state.oh.us

Environmental Resources Management

1701 Golf Road
Suite 1-700
Rolling Meadows, IL
60008-4242

+1 847 258 8900
+1 847 258 8901 (fax)

December 19, 2014

Mr. John Kessler
Ohio Department of Natural Resources
2045 Morse Road, Bldg E-2
Columbus, OH 43229

Subject: Avon Lake Gas Addition Project
Lorain County, Ohio

Dear Mr. Kessler:

As you know, NRG Ohio Pipeline Company LLC ("NRG Ohio Pipeline") is planning to install a 24-inch diameter high-grade steel natural gas pipeline that will extend south approximately 20-miles from the existing Avon Lake Power Plant, which is located along the Lake Erie shoreline in the City of Avon Lake, to a proposed supply tap location southwest of the Village of Grafton.

The proposed pipeline requires siting approval from the Ohio Power Siting Board ("OPSB"), as well as permits and approvals from other local, State, and federal agencies. NRG Ohio Pipeline anticipates submitting a Letter of Notification ("LON") for OPSB review in December 2014. NRG Ohio Pipeline has been consulting with various federal, State and local authorities, such as the U.S. Fish and Wildlife Service and the U.S. Army Corps of Engineers, and will continue to consult with these authorities. Applications for permits required for the construction of the pipeline will be submitted to the appropriate agencies contemporaneously with the filing of the LON.

Field studies for NRG Ohio Pipeline's proposed route were completed in May 2014. Subsequent to the completion of the field studies, some affected property owners requested adjustments to the proposed route, many of which NRG Ohio Pipeline has accommodated. Additional field studies were conducted in September and October 2014 where the route has been adjusted outside of the May 2014 survey corridor.

Maps illustrating the current proposed route are enclosed with this letter. ERM does not anticipate that the incorporated route adjustments will result in any new or significant adverse impacts to the Indiana bat (*Myotis sodalis*) or Kirtland's warbler (*Setophaga kirtlandii*), as the same mitigation measures the Department previously recommended for these species (letter correspondence dated February 28, 2014) will be implemented.

Further, no adverse impacts to fresh water mussels are anticipated. As you know, the Ohio Mussel Survey Protocol defines how surveys should be conducted for these species should any

potential for impact to these species be anticipated, and which waters of the State are subject to the Protocol. The East Branch of the Black River is the only waterway subject to the protocol that NRG Ohio Pipeline proposes to cross. However, NRG Ohio Pipeline will install the proposed pipeline beneath this waterway via horizontal directional drilling so any potential for impacts to mussels will be entirely avoided. The Department concurred with this conclusion during our April 28, 2014 meeting.

Based on the information provided above and as depicted on the enclosed maps, ERM respectfully requests your concurrence with our conclusion that no adverse effects to federal or State designated listed species are anticipated to occur.

Thank you in advance for your time and consideration. If you have any questions or require additional information about the Project, please do not hesitate to contact me at (616) 738-7370, or via email at jeff.williams@erm.com. You may also contact Nate Rozic at (724) 597-8630, or via email at nathan.rozic@nrg.com.

Sincerely,

Jeff Williams
Senior Biologist

Enclosures: Topographic and Aerial Maps of the Proposed Route, including a CD

cc: Nate Rozic, NRG
Doni Murphy, ERM
Matt Teichert, ERM

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AVON LAKE GAS ADDITION PROJECT

Proposed Route Overview Map

Lake Erie

Avon Lake Plant

Potential Tap Location

Proposed Tap Location

CUYAHOGA COUNTY

LORAIN COUNTY

MEDINA COUNTY

Avon Lake
Sheffield Lake
Sheffield
Lorain
Avon
Bay Village
Lakewood
Rocky River
Westlake
Fairview Park
Cleveland
North Olmsted
Brook Park
North Ridgeville
Elyria
OLMSTED TOWNSHIP
Berea
Olmsted Falls
Middleburg Heights
South Amherst
Strongsville
Vermilion
Amherst
Oberlin
Kipton
Grafton
Eaton Estates
Brunswick

SHEFFIELD TOWNSHIP
ELYRIA TOWNSHIP
BROWNHELM TOWNSHIP
AMHERST TOWNSHIP
NEW RUSSIA TOWNSHIP
HENRIETTA TOWNSHIP
CARLISLE TOWNSHIP
EATON TOWNSHIP
COLUMBIA TOWNSHIP
CAMDEN TOWNSHIP
PITTSFIELD TOWNSHIP
LAGRANGE TOWNSHIP
GRAFTON TOWNSHIP
LIVERPOOL TOWNSHIP
BRUNSWICK HILLS TOWNSHIP

6 · 611 · 254 · 2 · 301 · 90 · 113 · 57 · 80 · 291 · Alt · 237 · 20 · 17 · 10 · 480 · 252 · 71 · 83 · 58 · 82 · 42 · 511

Legend

- Above Ground Proposed Route
- Below Ground Proposed Route
- County Boundary
- Political Township Boundary
- Municipal Boundary
- Railroad

Roads

- Interstate
- US Highway
- State Highway

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AVON LAKE GAS ADDITION PROJECT

Proposed Route

Legend

- Above Ground Proposed Route
- Below Ground Proposed Route
- Mile Post
- NWI Wetland
- Ohio Wetland Inventory Wetland
- Known Protected Species Occurance
- Lake
- River/Stream
- County Boundary
- Political Township Boundary
- Municipal Boundary
- Railroad

Roads

- Interstate
- US Highway
- State Highway

Aerial Photo Source: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community

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AVON LAKE GAS ADDITION PROJECT

Proposed Route

Legend

- Above Ground Proposed Route
- Below Ground Proposed Route
- Mile Post
- NWI Wetland
- Ohio Wetland Inventory Wetland
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Roads

- Interstate
- US Highway
- State Highway

Aerial Photo Source: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community

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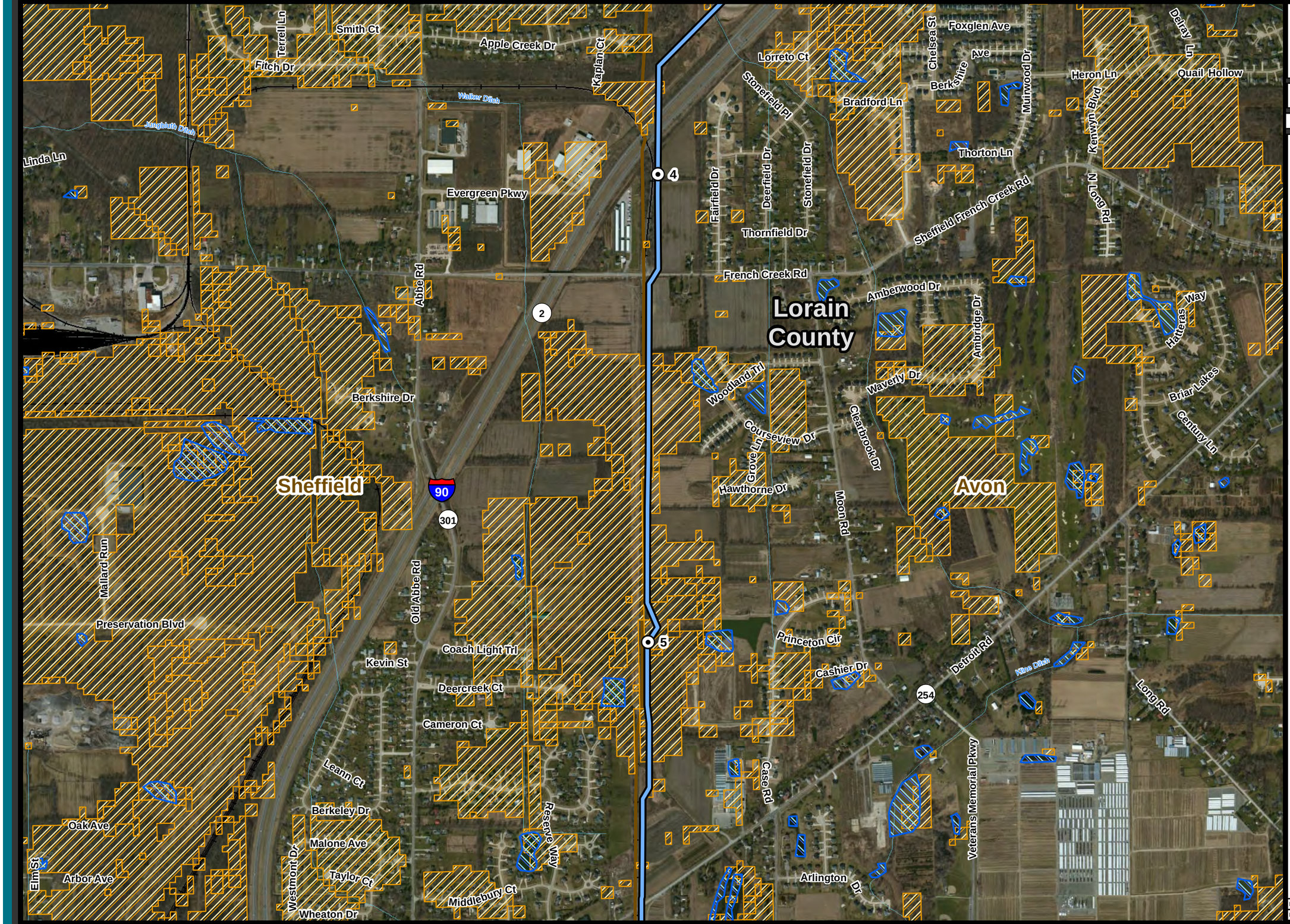
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Sheffield Lake
Oster Rd
Avon Lake
Pin Oak Pkwy
2
Miller Rd
Moore Rd
Freeman Dr
Lorain County
Schueller Ditch
Abbe Rd
Schueller Blvd
Kingsbury Ditch
Chester Industrial Pkwy
Sheffield
301
611
Avon
Birch Ln
Avins Ditch
Chester Rd
French Creek
Colorado Ave
3
90
Cypress W
Cypress E
N Doovys St
Caroline Dr
Lorie Blvd
Lake Dr
Doovys St
Eaton Dr
2
Barkwood Dr
Walker Ditch
Pin Oak Cir
Burrell Dr
Oakwood Dr
Terrell Ln
Chapman Ave
Fitch Dr
Country Club Dr
Chelsea St
Conrad St
Foxglen Ave
Quail Hollow



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AVON LAKE GAS ADDITION PROJECT

Proposed Route

Legend

- Above Ground Proposed Route
- Below Ground Proposed Route
- Mile Post
- NWI Wetland
- Ohio Wetland Inventory Wetland
- Known Protected Species Occurance
- Lake
- River/Stream
- County Boundary
- Political Township Boundary
- Municipal Boundary
- Railroad

Roads

- Interstate
- US Highway
- State Highway

Aerial Photo Source: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community

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AVON LAKE GAS ADDITION PROJECT

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Arbor Ave
Elm St
Walnut Ave
Taylor Ct
Middlebury Ct
Wheaton Dr
Parkhurst Dr
Detroit Rd
254
Transportation Dr
2
Sheffield
Waterford Cir
Waterford Dr
Abbe Rd
Hoag Dr
Clover Dr
Meadow Lane Ct
Goldenrod Cir
90
Loyola Dr
301
Pepperdine Dr
Antioch Dr
Hemlock Dr
Timberlane Dr
Villanova Cir
Huntington Cir
Greenway Dr
Naples Dr
Campagna St
Gulf Rd
Antoinette St
College Park Dr
Elyria
Abbe Rd N
College Dr
Hillcrest Dr
Hillcrest
Black River
Riddeway Ditch
Windward Dr
Crestview Dr
Finwood Dr
Burns Rd
6
7
Arlington Dr
Evergreen Dr
Case Rd
Stallion Ct
Steeple Chase
Derby Dr
Belmont Dr
Secretariat Ct
Churchill Dr
Bridle Ct
Camelot Way
Somerset Ct
Veterans Memorial Pkwy
Kline Ditch
Avon
Lorain County
Park Tr/ Weatherstone Dr
Windsor Dr
Overlook Ct
Ravenway Dr
Hidden View Ct
Avalon Dr
Kingston Dr
Millenium Ct
Springdale Dr
Pelican Lake Dr
Country Meadow Way
Sun Meadow Ct
Autumn Ln
Lavender Ct
North Ridgeville
Otten Rd
Deer Lake Dr
Stoney Lake Dr
Barres Rd
Jungbluth Ditch
W Breezeway Dr

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AVON LAKE GAS ADDITION PROJECT

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Finwood Ct
Briar Lake Dr
Nottingham Dr
Woodridge Dr
Woodview Dr
Northfield Dr
Buckingham Dr
Brookvalley Dr
Meadow Dr
Rosewood Dr
Sandalwood Dr
Crestview Dr
Hollywood Dr
Windsor Dr
Alexander Dr
Salem Ave
Canterbury Rd
Fairwood Blvd
Belmar Ct
Jamestown Ave
Tarry Ln
Whitman Blvd
Skylark Ct
Livermore Ln
Gulf Rd
Wilder Ave
Stafford Dr
Sherwood Ave
Black River
Vista Ct
Hartford Dr
Elyria
Randall Rd
Nash Ave
Bedford Ave
Abbe Rd N
Bennett Dr
Rosealee Ave
Berkshire Rd
Wilshire Ct
N Pasadena Ave
Howard St
Metcalf Rd
Augdon Dr
Olivet Dr
Dorset Ct
Valley Blvd
Dowd Rd
Reeve Rd
Ambler Dr
Edwin Ave
Case Rd
Hilliard Rd
Lucille Dr
Duffey St
Alden Ave
Songbird Ln
Larkmont Dr
Watson St
Potential Tap Location
John F Kennedy Mem Pkwy
Dyke Ave
Fowlers Run
Sycamore St
Simon St
N Glen
S Glen
Center Ridge Rd
Ohio Turnpike
Ridgeway Ditch
Race Rd
Poplar St
Elma Dr
Dilworth St
Caroline St
Preston St
Greely St
Cleveland St
Harwood St
Brandtson Ave
Pasadena Ave
Roosevelt Ave
Olive St
Bellfield Ave
Longford Ave
Marseilles Ave
Beebe Ave
Hawthorne St
Longfellow St
Bon Air Ave
Wesley Ave
White Oak Dr
Frances Blvd
Brittany Ln
Lorain County
North Ridgeville
Otten Rd
W Breezeway Dr
Sandy Ridge Dr
Majestic Dr
Wildlife Trl
Meadow Lakes Blvd
301
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AVON LAKE GAS ADDITION PROJECT

Proposed Route

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AVON LAKE GAS ADDITION PROJECT

Proposed Route

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Date: 12/15/2014 | Page: 7

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AVON LAKE GAS ADDITION PROJECT

Proposed Route

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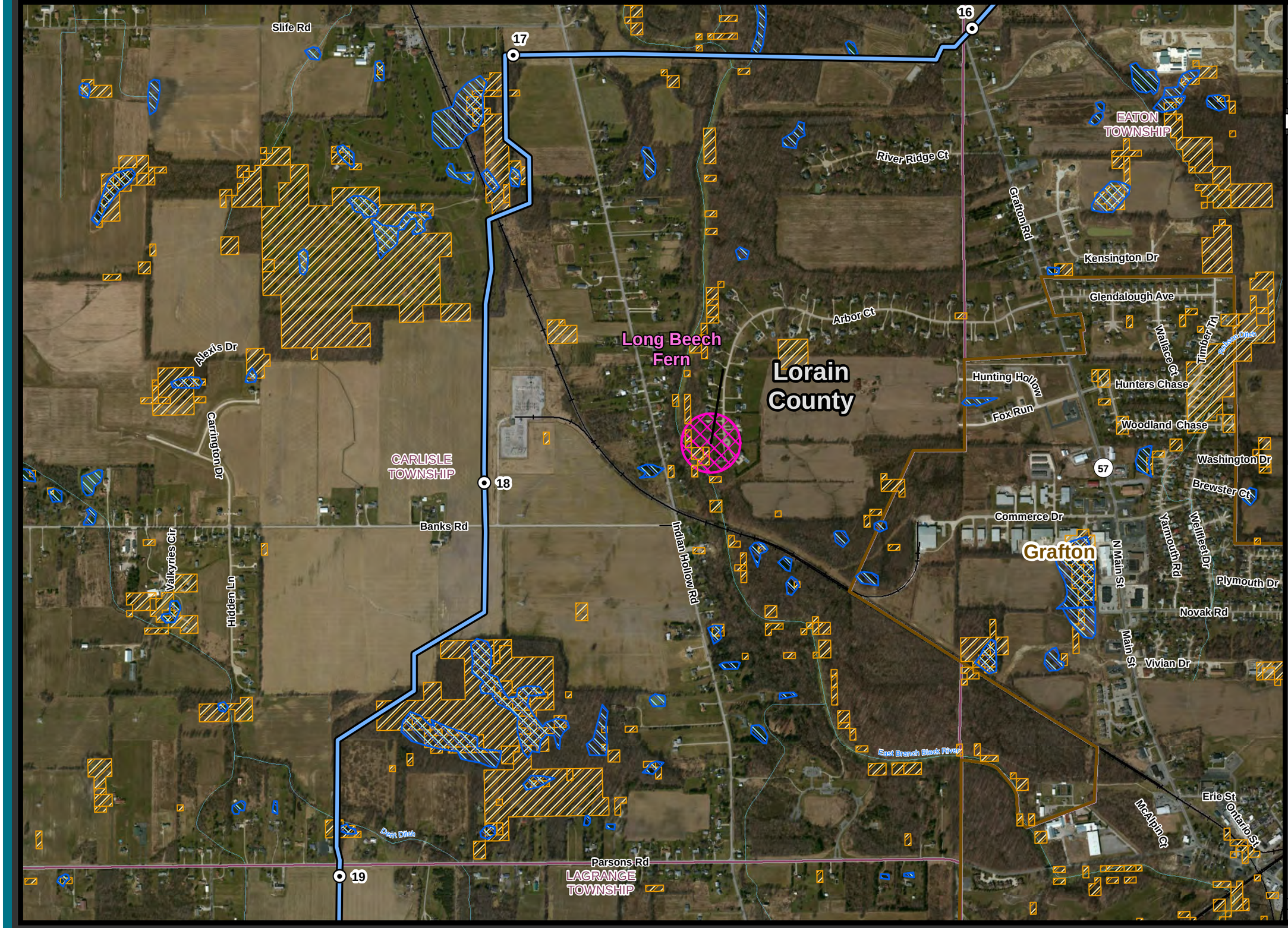


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Flint Ridge Dr
Overlook Dr
Davis Dr
East Branch Black River
Sabol Ct
Giles Rd
Willow Creek
Jackson Ditch
14
Robson Rd
Edgewood Dr
Georgette Dr
Brentview Dr
Waterfall Dr
Lakeview Dr
Meadowbrook Dr
Esther Dr
Sycamore Ln
CARLISLE TOWNSHIP
Grafton Rd
Eastwood Dr
Castleton Ln
Hill Ditch
82
Royalton Rd
Lorain County
EATON TOWNSHIP
Durkee Rd
Great Blue Heron Rookery
57
Beaver Creek Ln
15
Capel Rd
Alexander Ditch
Liberty Ln
16



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AVON LAKE GAS ADDITION PROJECT

Proposed Route

Legend

- Above Ground Proposed Route
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Aerial Photo Source: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community

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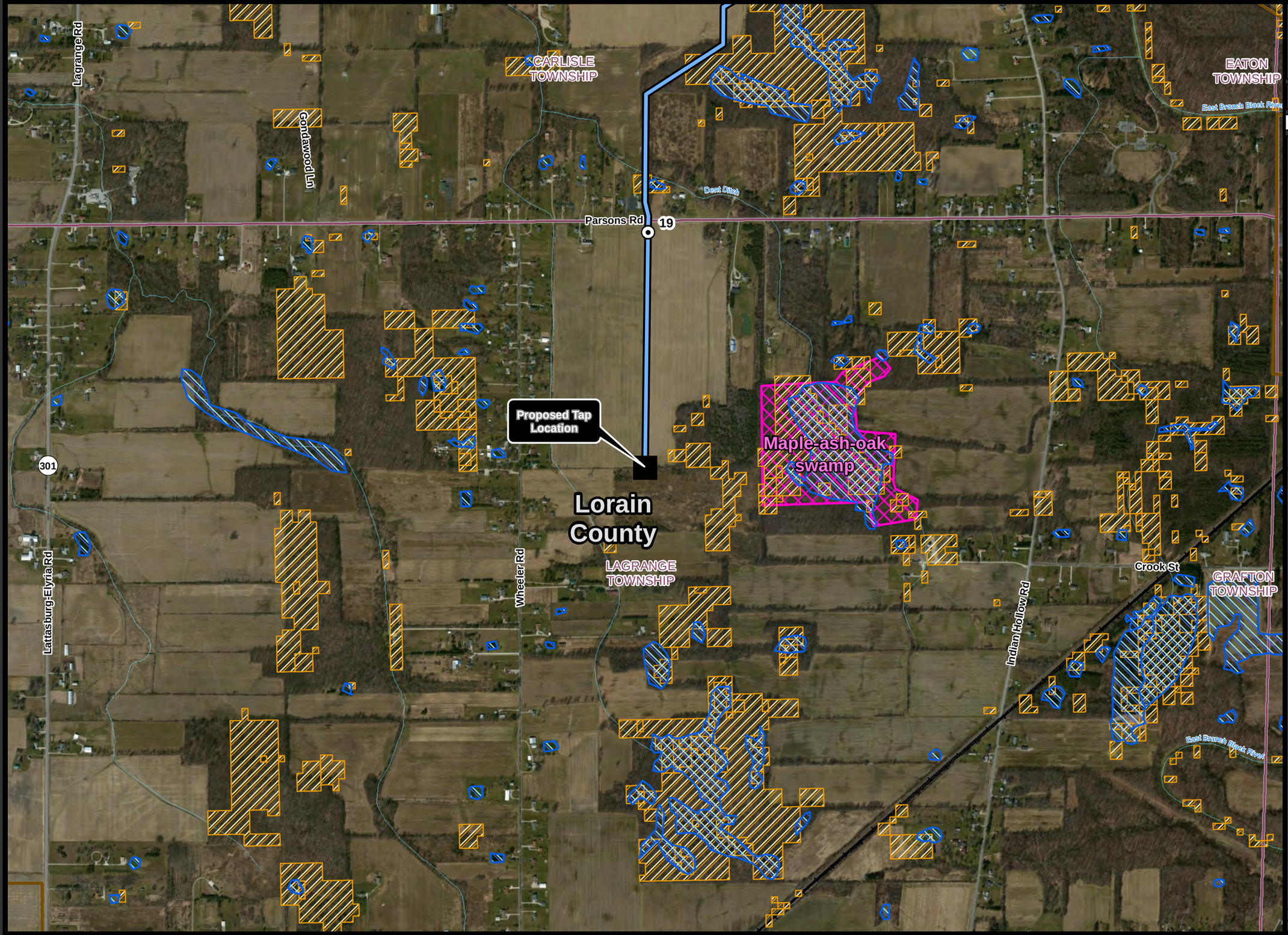
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AVON LAKE GAS ADDITION PROJECT

Proposed Route

Legend

- Above Ground Proposed Route
- Below Ground Proposed Route
- Mile Post
- NWI Wetland
- Ohio Wetland Inventory Wetland
- Known Protected Species Occurance
- Lake
- River/Stream
- County Boundary
- Political Township Boundary
- Municipal Boundary
- Railroad

Roads

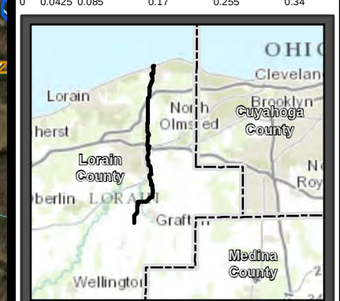
- Interstate
- US Highway
- State Highway

Aerial Photo Source: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community

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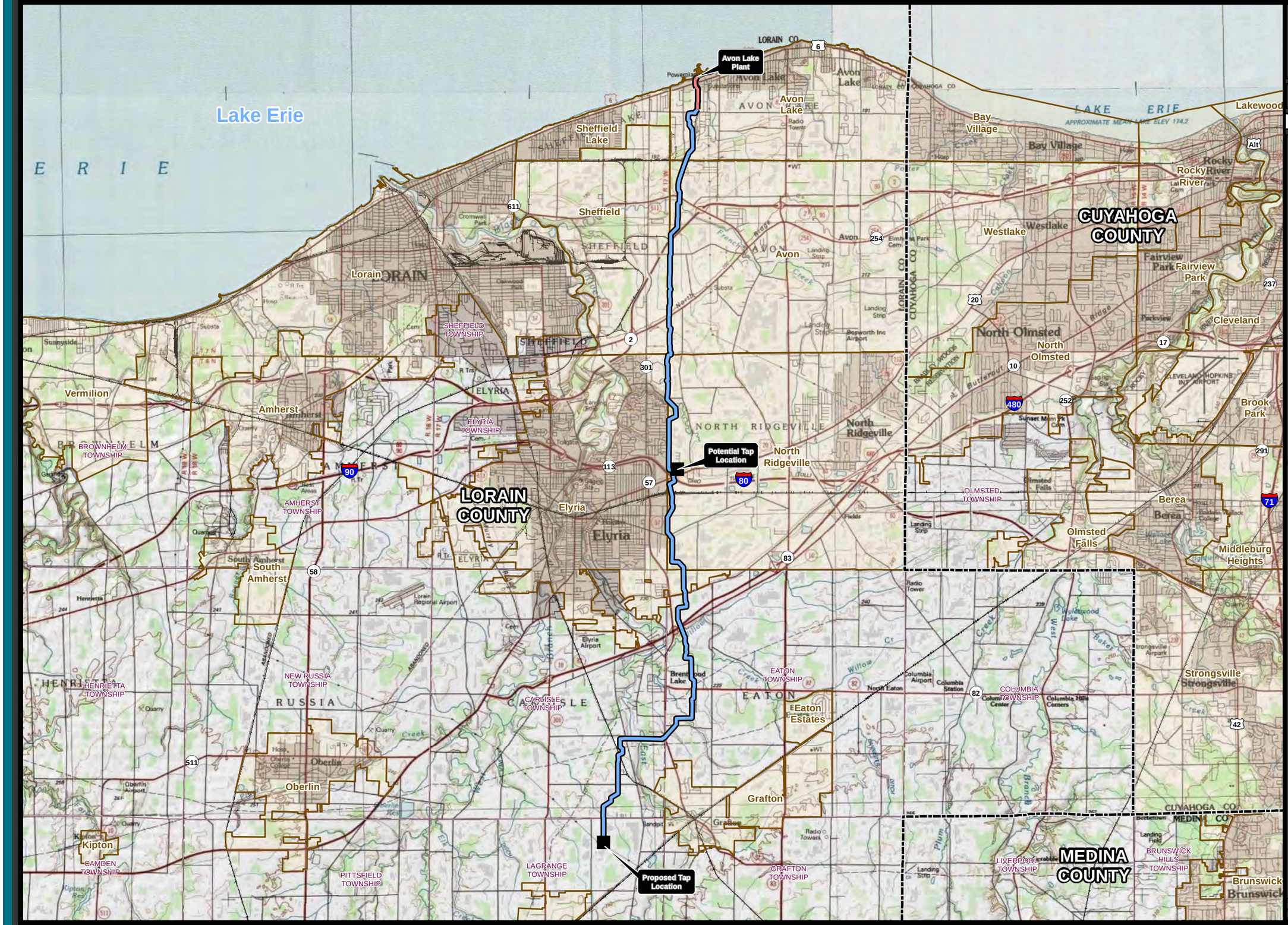
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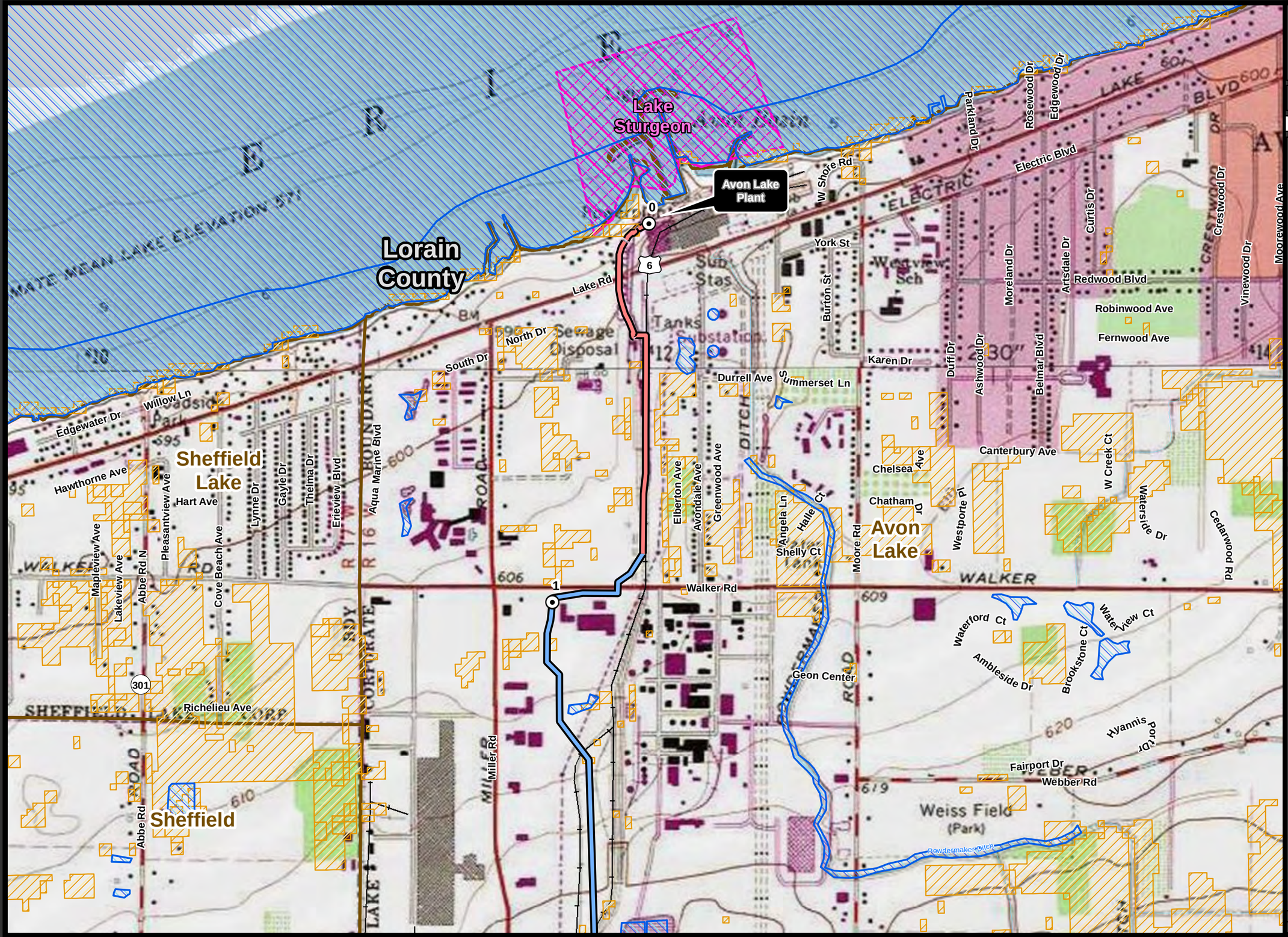
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AVON LAKE GAS ADDITION PROJECT

Proposed Route Overview Map



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AVON LAKE GAS ADDITION PROJECT

Proposed Route

Legend

- Above Ground Proposed Route
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Topo Base Map Source: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community
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AVON LAKE GAS ADDITION PROJECT

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Sheffield Lake
Knollwood Sch
Oster Rd
OSTER ROAD
ABBE
AVON LAKE
Avon Lake
Pin Oak Pkwy
WESTERN
AVON LAKE
AVON
Substation
DITCH
Miller Rd
Moore Rd
Freeman Dr
Lorain County
Schumaker Ditch
Sheffield
Abbe Rd
Schueller Blvd
Klingshirn Ditch
Chester Industrial Pkwy
Birch Ln
Avins Ditch
Avon
Chester Rd
AVINS
Cypress W
Cypress E
St Teresa Sch
St Teresa Cem
French Creek
Colorado Ave
Creek
90
N Doovys St
Caroline Dr
Lorie Blvd
Lake Dr
Doovys St
Eaton Dr
INTERCHANGE 151
AVE
Sewage Disposal
Barkwood Dr
Pin Oak Cir
Walker Ditch
Burrell Dr
Oakwood Dr
Terrell Ln
Chapman Ave
Fitch Dr
Country Club Dr
Chelsea St
Conrad St
Foxglen Ave
Quail Hollow
LORAIN
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611
625
630

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AVON LAKE GAS ADDITION PROJECT

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Topo Base Map Source: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community
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AVON LAKE GAS ADDITION PROJECT

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Elyria
Lorain County
North Ridgeville
Potential Tap Location
Elyria Park
Shopping Center
Spring Valley Golf Club
Spring Valley Sch
High Sch
St Judes Sch
Allen Sch
Finwood Ct
Briar Lake Dr
Nottingham Dr
Buckingham Dr
Woodridge Dr
Woodview Dr
Northfield Dr
Rosewood Dr
Brookvalley Dr
Meadow Dr
Sandalwood Dr
Crestview Dr
Hollywood Dr
Windsor Dr
Alexander Dr
Salem Ave
Canterbury Rd
Fairwood Blvd
Belmar Ct
Jamestown Ave
Tarry Ln
Whitman Blvd
Skylark Ct
Livermore Ln
Guilford Rd
Stafford Dr
Wilder Ave
Sherwood Ave
Vista Ct
Hartford Dr
Randall Rd
Nash Ave
Bennett Dr
Bedford Ave
Berkshire Rd
Wilshire Ct
Howard St
Metcalf Rd
Dorset Ct
Olivet Dr
Augdon Dr
Valley Blvd
Dowd Rd
Reeve Rd
Ambler Dr
Edwin Ave
Hilliard Rd
Duffey St
Alden Ave
Lucille Dr
Watson St
Larkmont Dr
John F Kennedy Mem Pkwy
Dyke Ave
Sycamore St
Simon St
N Glen
S Glen
Center Ridge Rd
Poplar St
Ridgeway Ditch
Elma Dr
Dilworth St
Caroline St
Preston St
Greely St
Cleveland St
Otten Rd
Sandy Ridge Dr
W Breezeway Dr
Majestic Dr
Wildlife Trl
Meadow Lakes Blvd
Case Rd
Fowlers Run
Race Rd
Ohio Turnpike
Frances Blvd
Wesley Ave
White Oak Dr
Bon Air Ave
Longfellow St
Hawthorne St
Beebe Ave
Marseilles Ave
Longford Ave
Bellfield Ave
Olive St
Roosevelt Ave
Pasadena Ave
Brandtson Ave
Harwood St
Rosealee Ave
Abbe Rd N
Black River

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AVON LAKE GAS ADDITION PROJECT

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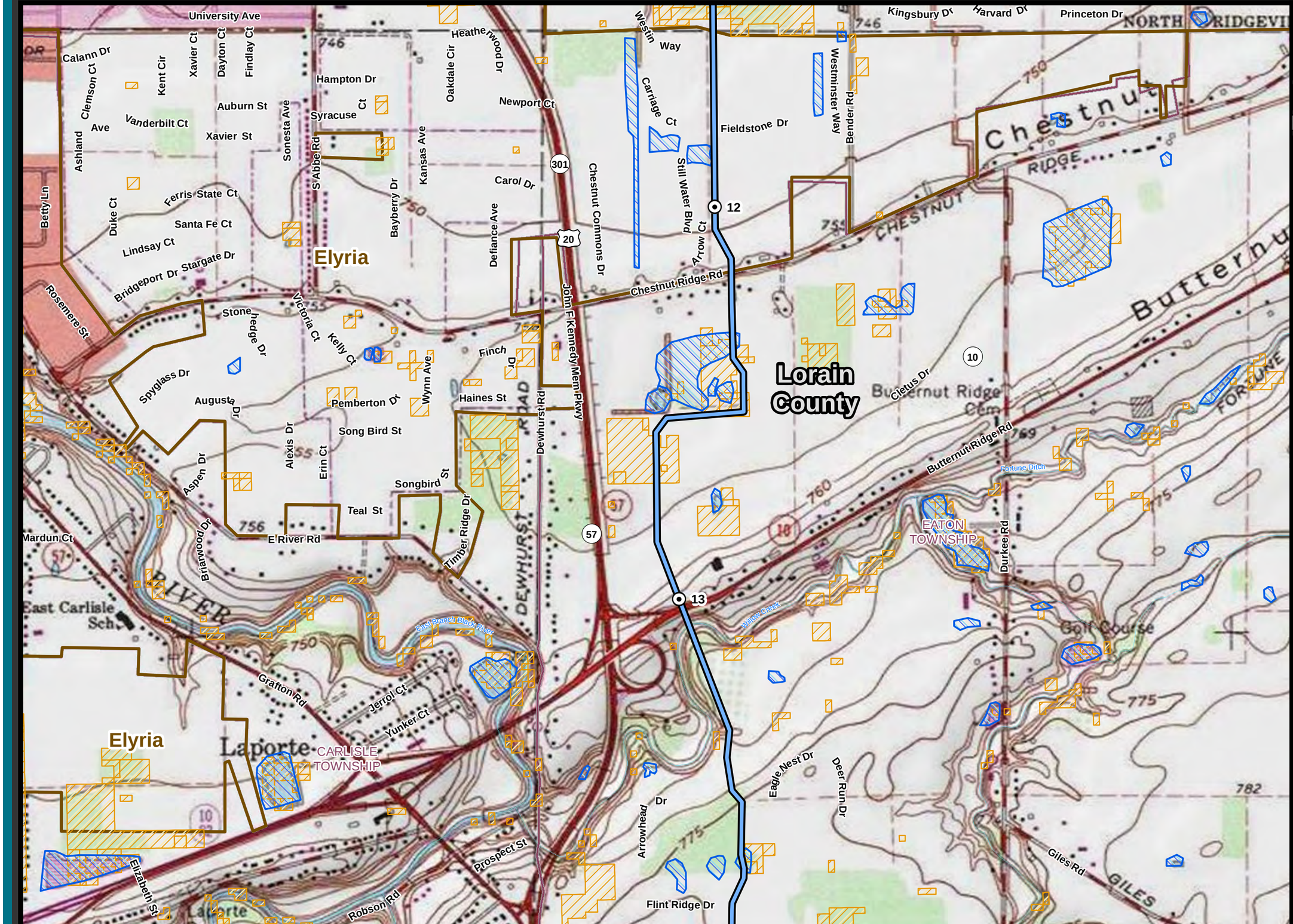
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AVON LAKE GAS ADDITION PROJECT

Proposed Route

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AVON LAKE GAS ADDITION PROJECT

Proposed Route

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Flint Ridge Dr
Sabol Ct
Giles Rd
Willow Creek
Jackson Ditch
Brush Sch
Castleton Ln
Hill Ditch
Eastwood Dr
Royalton Rd
Lorain County
Field
EATON TOWNSHIP
Durkee Rd
Great Blue Heron Rookery
Overlook Dr
Davis Dr
East Branch Black River
Robson Rd
Edgewood Dr
Georgette Dr
Brentview Dr
Waterfall Dr
Lakeview Dr
Meadowbrook Dr
Esther Dr
Brentwood Lake
Sycamore Ln
CARLISLE TOWNSHIP
Grafton Rd
Beaver Creek Ln
ROBSON ROAD
Golf Course
Capel Rd
Midview High Sch
Alexander Ditch
Liberty Ln
Gas Well
St Mary
14
15
16
57
82

nrg
Power to be free™

AVON LAKE GAS ADDITION PROJECT

Proposed Route

Legend

- Above Ground Proposed Route
- Below Ground Proposed Route
- Mile Post
- NWI Wetland
- Ohio Wetland Inventory Wetland
- Known Protected Species Occurance
- Lake
- River/Stream
- County Boundary
- Political Township Boundary
- Municipal Boundary
- Railroad

Roads

- Interstate
- US Highway
- State Highway

Topo Base Map Source: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community
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N
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S

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0 0.0425 0.085 0.17 0.255 0.34 Miles

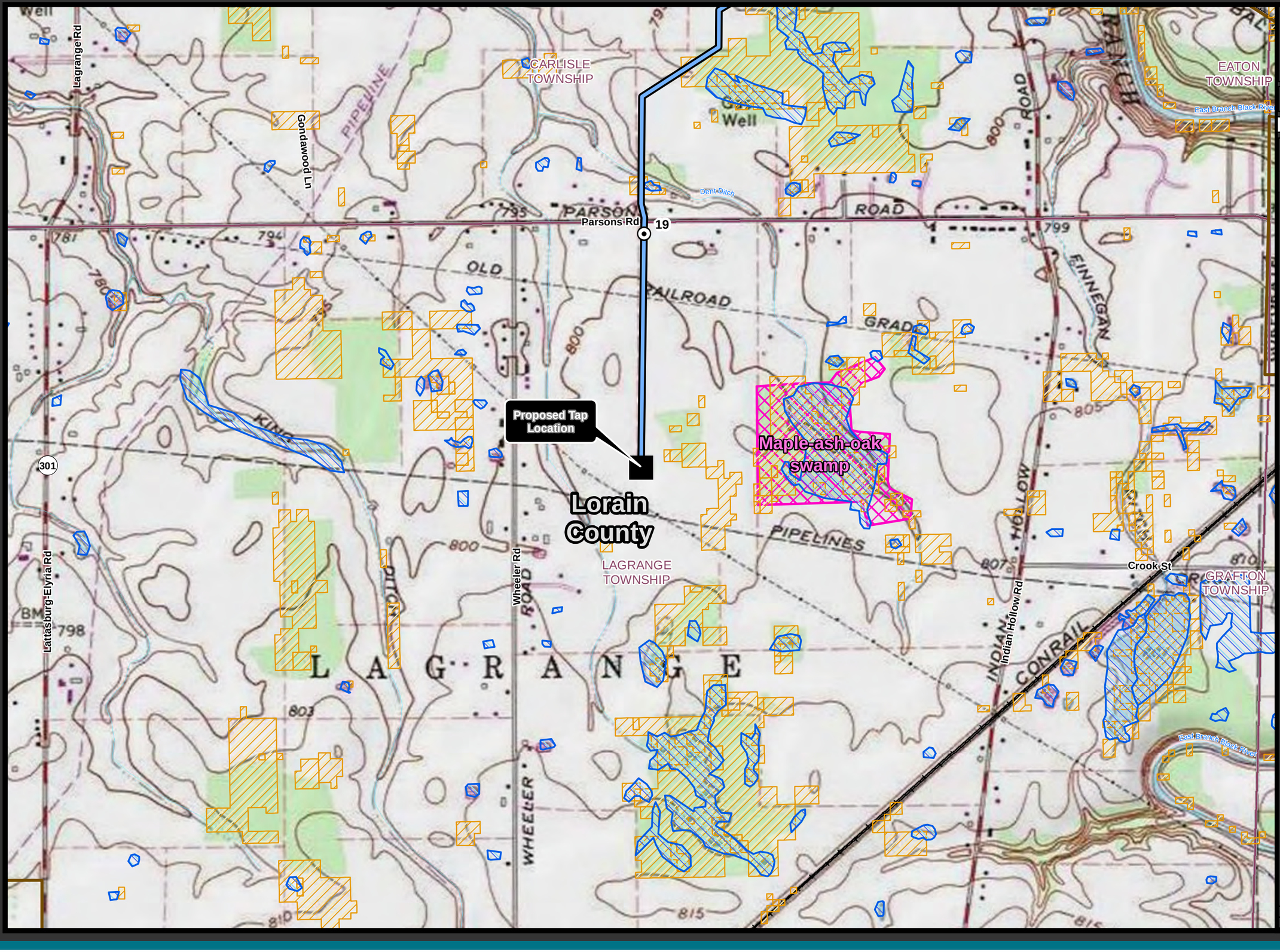


Date: 12/15/2014 | Page: 9

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Slife Rd
ROAD
PIPELINE
Alexis Dr
Carrington Dr
DITCH
CARLISLE TOWNSHIP
Gas Well
Banks Rd
Valkyries Cir
Hidden Ln
Indian Hollow Rd
Long Beech Fern
Lorain County
Arbor Ct
River Ridge Ct
St Marys Cem
EATON TOWNSHIP
Grafton Rd
Kensington Dr
Glendalough Ave
Wallace Ct
Timber Trl
Raiser Ditch
Hunting Hollow
Fox Run
Hunters Chase
Woodland Chase
Washington Dr
Brewster Ct
Commerce Dr
Grafton
N Main St
Yarmouth Rd
Wellfleet Dr
Plymouth Dr
Novak Rd
Vivian Dr
Main St
BOUNDARY
BALTIMORE
BRANCH
East Branch Black River
Sewage Disposal
McAlpin Ct
Erie St
Ontario St
Brandt Ditch
PARSONS
Parsons Rd
LAGRANGE TOWNSHIP
BLACK
Snoopit
OLD
16
17
18
19
57



nrg
Power to be free

AVON LAKE GAS ADDITION PROJECT

Proposed Route

Legend

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Topo Base Map Source: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community
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0 0.0425 0.085 0.17 0.255 0.34 Miles



Date: 12/15/2014	Page: 10
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CASE NO. 14-1717-GA-BLN
LON
AVON LAKE GAS ADDITION PROJECT
PROPOSED NATURAL GAS PIPELINE

ATTACHMENT H

OHIO DEPARTMENT OF NATURAL RESOURCES
CORRESPONDENCE

AECOM
4 Neshaminy Interplex, Suite 300
Trevose, PA 19053-6940

215.244.7100 tel
215.244.7179 fax

January 22, 2014

Ohio Department of Natural Resources
Division of Wildlife
Ohio Natural Heritage Program
2045 Morse Road, Building G-3
Columbus, Ohio 43229-6693

Subject: NRG Ohio Pipeline Company LLC
Avon Lake Pipeline Project
Lorain County, Ohio

Dear Program Manager:

On behalf of NRG Ohio Pipeline Company LLC ("NRG"), AECOM hereby requests rare, threatened and endangered species consultation for NRG's proposed 20-mile Avon Lake Pipeline Project (the "Project") (Figure 1) which will be located in Lorain County, Ohio.

NRG will seek approval from the Ohio Power Siting Board ("OPSB") process. AECOM has been retained to assist NRG with the preparation of environmental studies, permits and consultations required for planning and construction of the Project. On behalf of NRG, AECOM hereby requests information related to the presence of state-listed species and their habitats located within 0.5 miles (1 mile total centered over the pipeline centerline) of the Project area. More specifically, AECOM seeks the following information for the Project area:

- state-listed threatened or endangered species;
- state-proposed threatened or endangered species;
- state-proposed or designated critical habitat; and
- Other unique ecosystems or sensitive communities.

Upon your review, we ask that you please send a written response to the AECOM address above, listing specific findings or concerns. In order to assist you in this process, we have attached 7.5-minute USGS quadrangle maps of the Project area (Figure 1), aerial maps of the Project area with NWI wetlands (Figure 2), shapefiles of the proposed alignment, and longitude/latitude for every mile increment along the proposed route.

If you require any further information or have any questions regarding the Project, please do not hesitate to contact Heather Brewster at (215) 244-7155 or e-mail heather.brewster@aecom.com.

Sincerely,

Project Manager

cc: Mr. Ron Bevacqua, NRG
Mr. Nate Rozic, NRG

Attachments: USGS Location Map (Figure 1)
Aerial Location Map (Figure 2)
Longitude/Latitude
Project Shapefiles

NATURAL HERITAGE DATA REQUEST FORM

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE
OHIO NATURAL HERITAGE PROGRAM
2045 MORSE RD., BLDG. G-3
COLUMBUS, OHIO 43229-6693
PHONE: 614-265-6452; EMAIL: obdrequest@dnr.state.oh.us

INSTRUCTIONS:
Please complete both pages of this form, sign and return it to the address or email address above along with: **(1)** a brief letter describing your project, and **(2)** a map detailing the boundaries of your project site. A copy of the pertinent portion of a USGS 7.5 minute topographic map is preferred but other maps are acceptable. Data requests will be competed within approximately 30 days. There is currently no charge for data requests.

WHAT WE PROVIDE: The Natural Heritage Database is the most comprehensive source of information on the location of Ohio's rare species and significant natural features. Records for the following will be provided: plants and animals (state and federal listed species), high quality plant communities, geologic features, breeding animal concentrations and unprotected significant natural areas. We also provide locations for managed areas including federal, state, county, local and non-profit sites, as well as state and national scenic rivers. A minimum one mile radius around the project site will automatically be searched. Because the data is sensitive information, it is our policy to provide only the data needed to complete your project. The information is generally provided without comment on potential impacts to the species and their habitats and therefore does not constitute coordination with ODNR under NEPA, the Fish & Wildlife Coordination Act or the Federal Water Pollution Control Act. If your project requires ODNR coordination, please submit it for a more extensive environmental review by contacting John Kessler in the Office of Real Estate at 614-265-6621 or john.kessler@dnr.state.oh.us

****

Date: January 22, 2014 Company name: AECOM

Name of person response letter should be addressed to: Mr. ☐ Ms ☑
Heather Brewster

Address: 4 Neshaminy Interplex, Suite 300

City/State/Zip: Trevose, Pennsylvania 19053

Phone: 215-244-7155 Fax: 215-244-7179

E-mail address: heather.brewster@aecom.com

Project Name: Avon Lake Pipeline Project

Project Number: Not Applicable

Project Site Address: Linear Project - See attached USGS mapping

Project County: Lorain County

Project City/Township: Cities of Avon Lake, Avon, N. Ridgeville, Elyria, Twps of Eaton, Carlise, Lagrange

Project site is located on the following USGS 7.5 minute topographic quad(s): See attached USGS and aerial mapping and provided Shapefile.

Project Latitude and Longitude if available (decimal degrees is preferred): See attached shapefiles, USGS mapping, and table of lat/long given for every mile.

Description of work to be performed at the project site: Proposed 20-mile natural gas pipeline.

How do you want your data reported? (Both formats provide exactly the same data. The only difference is in the format of our response. The manual search is most appropriate for small scale projects or for those who do not have GIS capabilities. Please choose only one option.)

Printed list and map (manual search) _____ **OR** GIS shapefile (computer search) X

Additional information you require: Listings for any rare plants and animals, high quality plant communities and other natural features.

How will the information be used? Will be used for planning purposes and ultimately for federal and state permitting applications.

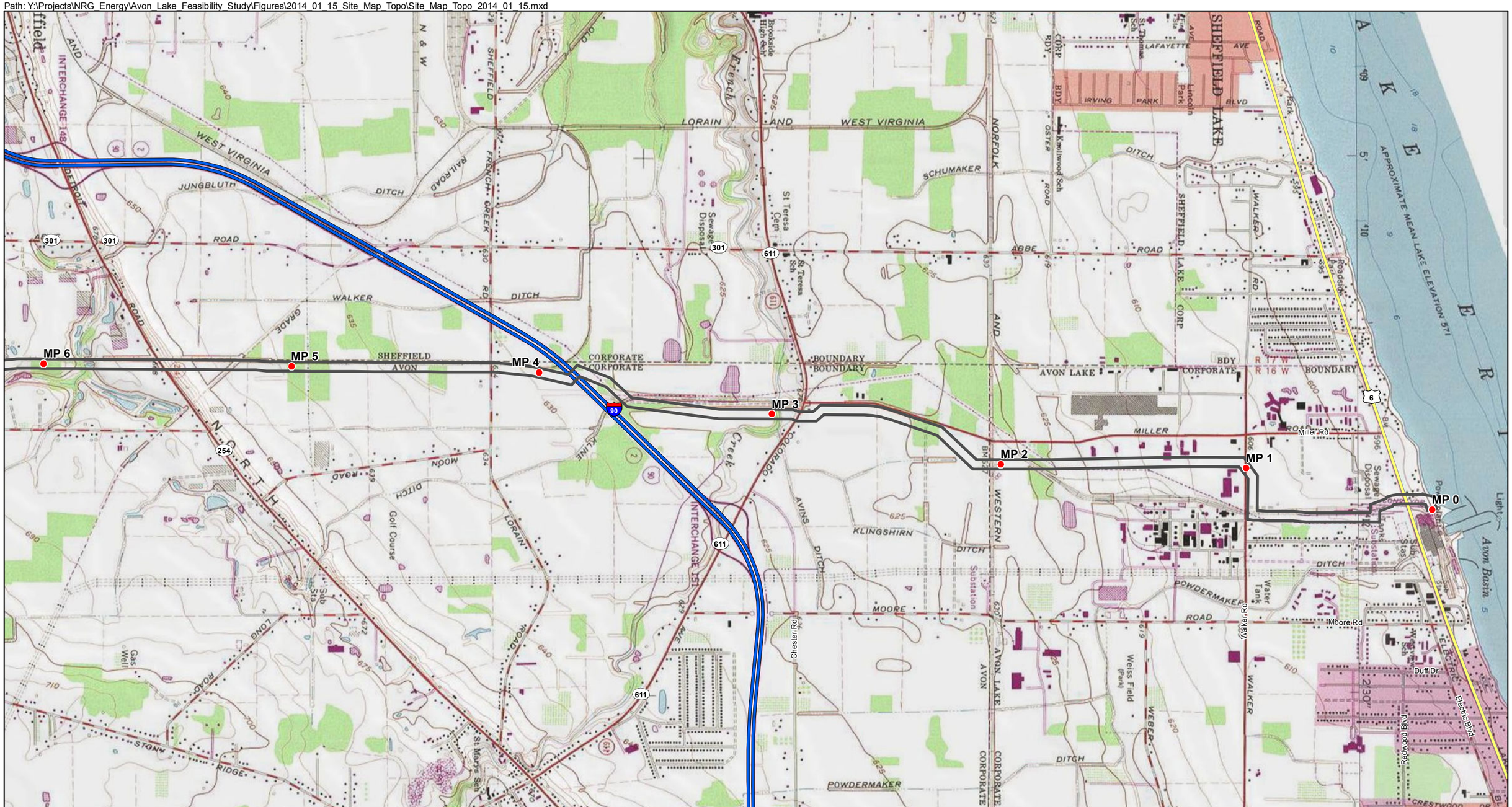
I certify that data supplied by the Ohio Natural Heritage Program will not be published without crediting the ODNR Division of Wildlife as the source of the material. In addition, I certify that electronic datasets will not be distributed to others without the consent of the Division of Wildlife, Ohio Natural Heritage Program.

Signature [signature]

Date: 1/20/14

DNR 5203
REV 3/2013

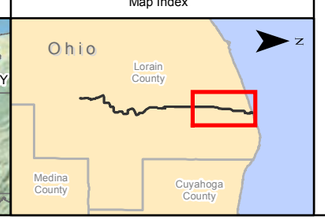
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Site Location



Map Index



Legend

- Milepost Preferred Route
- Preferred Route 200' Corridor
- Highway
- Major Road
- Other Major Road

0 1,000 2,000 4,000 Feet

1:24,000

NRG Ohio Pipeline Company LLC
Avon Lake Pipeline Project

Location Map

Page 1 of 3

AECOM

Figure 1
January 2014

Data Sources: Lorain County GIS Data 2013
Imagery: Bing Map Topo

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MP 6
MP 7
MP 8
MP 9
MP 10
MP 11
MP 12

Site Location



Map Index



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0 1,000 2,000 4,000 Feet

1:24,000

NRG Ohio Pipeline Company LLC
Avon Lake Pipeline Project

Location Map

AECOM

Figure 1
January 2014

Data Sources: Lorain County GIS Data 2013
Imagery: Bing Map Topo

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MP 19
MP 18
MP 17
MP 16
MP 15
MP 14
MP 13

Site Location



Map Index



Legend

- Milepost Preferred Route
- Preferred Route 200' Corridor
- Highway
- Major Road
- Other Major Road

0 1,000 2,000 4,000 Feet

1:24,000

NRG Ohio Pipeline Company LLC
Avon Lake Pipeline Project

Location Map

Page 3 of 3

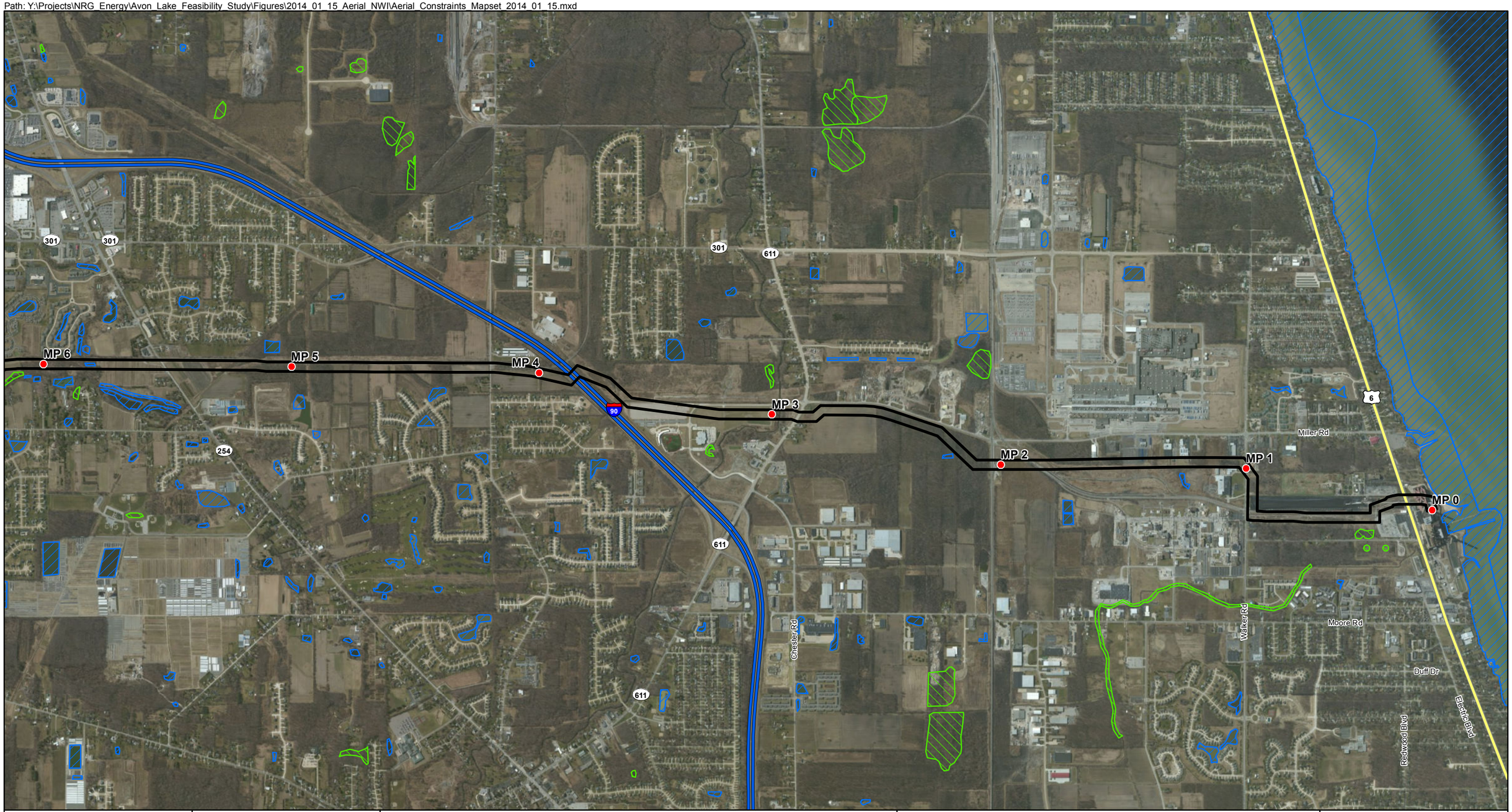
AECOM

Figure 1

January 2014

Data Sources: Lorain County GIS Data 2013
Imagery: Bing Map Topo

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Site Location



Map Index



Legend

- Milepost Preferred Route
- Preferred Route 200' Corridor
- NWI Wetland
- NWI Waterbody
- Highway
- Major Road
- Other Major Road

0 1,000 2,000 4,000 Feet

1:24,000

NRG Ohio Pipeline Company LLC
Avon Lake Pipeline Project

Aerial Map

Page 1 of 3

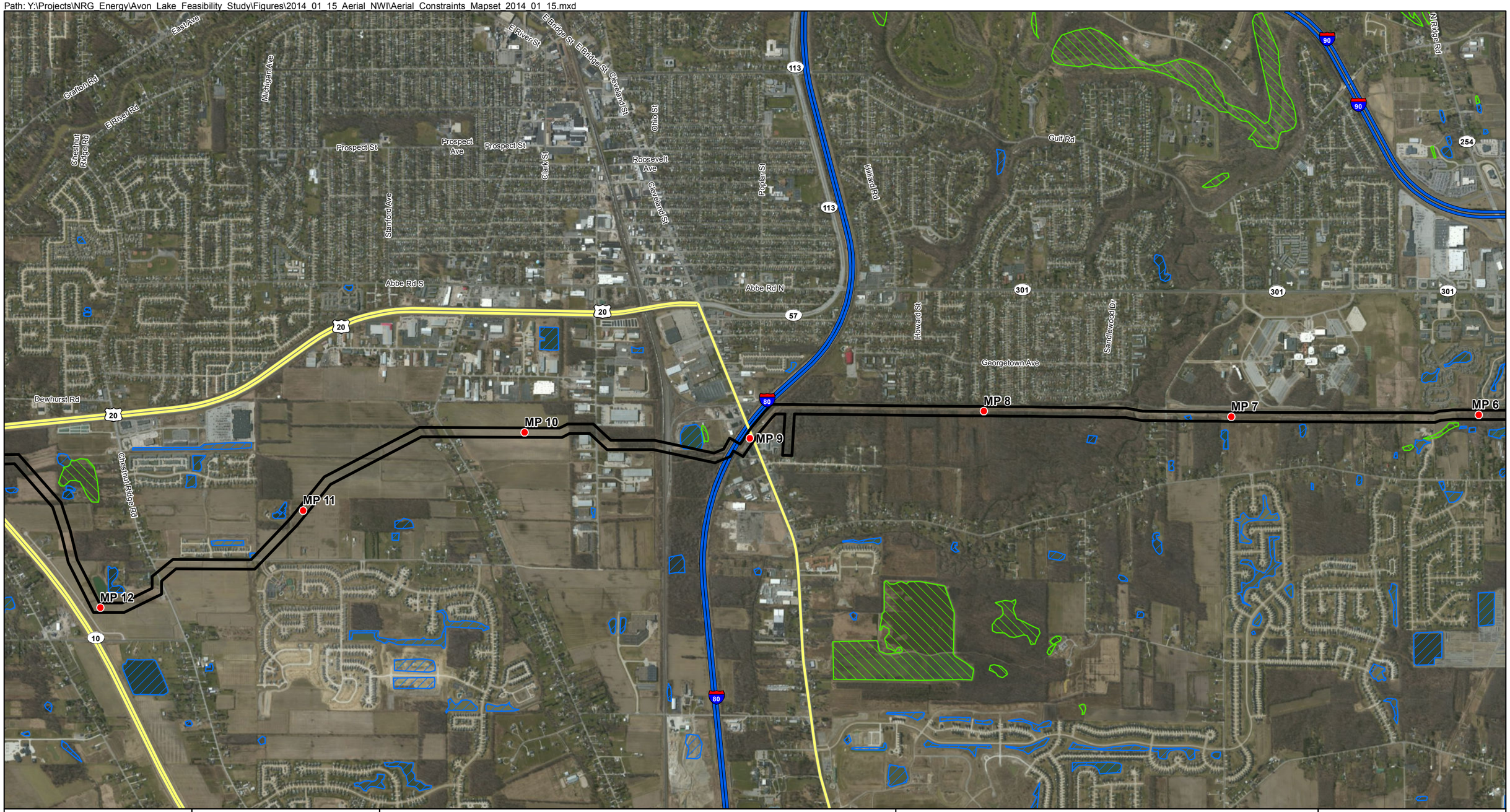
AECOM

Figure 2

January 2014

Data Sources: A Lorain County GIS Data 2013; NWI Data 2013
Imagery: Bing Map Aerials

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Site Location



Map Index



Legend

- Milepost Preferred Route
- Preferred Route 200' Corridor
- NWI Wetland
- NWI Waterbody
- Highway
- Major Road
- Other Major Road

0 1,000 2,000 4,000 Feet

1:24,000

NRG Ohio Pipeline Company LLC
Avon Lake Pipeline Project

Aerial Map

AECOM

Figure 2

January 2014

Data Sources: A Lorain County GIS Data 2013; NWI Data 2013
Imagery: Bing Map Aerials

Path: Y:\Projects\NRG_Energy\Avon_Lake_Feasibility_Study\Figures\2014_01_15_Aerial_NWI\Aerial_Constraints_Mapset_2014_01_15.mxd

MP 19
MP 18
MP 17
MP 16
MP 15
MP 14
MP 13
57
20
82
10
Crafton Rd
E River Rd
Dewhurst Rd

Site Location



Map Index



Legend

- Milepost Preferred Route
- Preferred Route 200' Corridor
- NWI Wetland
- NWI Waterbody
- Highway
- Major Road
- Other Major Road

0 1,000 2,000 4,000 Feet

1:24,000

NRG Ohio Pipeline Company LLC
Avon Lake Pipeline Project

Aerial Map

AECOM

Figure 2
January 2014

Data Sources: A Lorain County GIS Data 2013; NWI Data 2013
Imagery: Bing Map Aerials

NRG Ohio Pipeline Company LLC
Avon Lake Pipeline Project

Latitude and Longitude for 1,000ft Increments along the Proposed Pipeline Route

1,000 foot Increments	Latitude	Longitude
Pipeline Start 0	41.50435455	-82.05555704
1000	41.50204446	-82.0563126
2000	41.49996644	-82.05499425
3000	41.49722204	-82.05501984
4000	41.49448256	-82.05515567
5000	41.49388315	-82.0580238
6000	41.49168198	-82.05935427
7000	41.48893768	-82.05935081
8000	41.48619346	-82.05930147
9000	41.48344919	-82.05925603
10000	41.48070482	-82.05924448
11000	41.47796037	-82.05926292
12000	41.47588761	-82.06150016
13000	41.47337249	-82.06285807
14000	41.47069393	-82.06351451
15000	41.46809119	-82.06305037
16000	41.46537249	-82.06325117
17000	41.46262899	-82.06330116
18000	41.45990907	-82.06378836
19000	41.45727362	-82.06451079
20000	41.4550024	-82.06644251
21000	41.45255398	-82.06644941
22000	41.44984009	-82.06695539
23000	41.44709623	-82.06700887
24000	41.44435185	-82.06704456
25000	41.44160745	-82.06707792
26000	41.43886306	-82.06711287
27000	41.43611964	-82.06717635
28000	41.43337882	-82.06728068
29000	41.43063448	-82.06732311
30000	41.42789014	-82.06736552
31000	41.4251458	-82.06740794
32000	41.42240149	-82.06745452

33000	41.41967505	-82.06724978
34000	41.41693062	-82.06728113
35000	41.41418617	-82.0673099
36000	41.41144173	-82.06734045
37000	41.4086974	-82.06738577
38000	41.40595312	-82.06743601
39000	41.40321652	-82.06758446
40000	41.40048345	-82.06778074
41000	41.39773919	-82.06783288
42000	41.3949952	-82.0678897
43000	41.392251	-82.0679477
44000	41.38950675	-82.06800246
45000	41.3867625	-82.06805661
46000	41.38401824	-82.06811075
47000	41.38152686	-82.06738526
48000	41.37976483	-82.0652663
49000	41.37741257	-82.06472186
50000	41.3747236	-82.06541149
51000	41.37209519	-82.06581188
52000	41.36966572	-82.06645451
53000	41.36692992	-82.06643551
54000	41.36418544	-82.06646616
55000	41.36144096	-82.0664968
56000	41.35899475	-82.06486299
57000	41.35655455	-82.06319569
58000	41.3546299	-82.06067859
59000	41.35278343	-82.05798748
60000	41.35057668	-82.05630881
61000	41.34783216	-82.05633398
62000	41.34592877	-82.05450472
63000	41.34359141	-82.05298779
64000	41.3416922	-82.05482356
65000	41.34073006	-82.05820787
66000	41.33974448	-82.06154769
67000	41.33793579	-82.06428673
68000	41.33534556	-82.0641007
69000	41.33277843	-82.06281255
70000	41.3307885	-82.06081935
71000	41.33060179	-82.05730651
72000	41.329133	-82.05502398
73000	41.32641396	-82.05481795
74000	41.32410075	-82.0561957

75000	41.32287542	-82.05911915
76000	41.32013087	-82.05914366
77000	41.31761931	-82.05853013
78000	41.31527999	-82.05746311
79000	41.31266071	-82.05788968
80000	41.31109899	-82.06081037
81000	41.31111275	-82.06445043
82000	41.31083414	-82.06803369
83000	41.30818019	-82.06826852
84000	41.30611461	-82.06978856
85000	41.30527212	-82.07300498
86000	41.30358825	-82.0753455
87000	41.30084956	-82.075518
88000	41.29812373	-82.07594308
89000	41.29789151	-82.07932161
90000	41.29777609	-82.08291462
91000	41.29782608	-82.08651429
92000	41.29639487	-82.08921895
93000	41.29385127	-82.08785183
94000	41.29130766	-82.08648482
95000	41.28875462	-82.08517879
96000	41.28621906	-82.08427327
97000	41.28376863	-82.08298303
98000	41.28106303	-82.08256495
99000	41.27864895	-82.08252688
100000	41.2761143	-82.08353362
101000	41.27369579	-82.08465466
102000	41.27104314	-82.08440355
103000	41.26833444	-82.08408662
Pipeline End 104000	41.26560271	-82.08392542

Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR JAMES ZEHRINGER, DIRECTOR

Office of Real Estate
Paul R. Baldridge, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6649
Fax: (614) 267-4764

February 28, 2014

Nate Rozic
NRG Ohio Pipeline Company, LLC
121 Champion Way, Suite 300
Canonsburg Pennsylvania 15317

Re: 14-065; NRG Ohio Pipeline Company, LLC, Avon Lake Pipeline Project, Lorain County, Ohio

Project: The project entails the construction of 20 miles of natural gas pipeline in the Cities of Avon Lake, Avon, North Ridgeville, and Elyria.

Location: The project is located in Eaton, Carlisle, Lagrange Townships, Lorain County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Fish and Wildlife: The Division of Wildlife (DOW) has the following comments.

The DOW recommends that impacts to wetlands and other water resources be avoided and minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.

This project must not have an impact on freshwater native mussels in the area. This applies to both listed and non-listed species. The Ohio Mussel Survey Protocol requires a mussel survey for streams, and water bodies listed in Appendix A of the protocol. Streams with a watershed of 10^2 miles or larger above the impact point that are not listed in Appendix A of the protocol should also be assessed for mussels and/or mussel habitat. Mussel surveys may be recommended for these streams as well. Therefore, if in-water work is planned in any streams that meet any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, as a last resort, the DOW recommends a professional malacologist collect and relocates the mussels to suitable and similar habitat. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol.

The project is within the range of the Indiana bat (*Myotis sodalis*), a state and federally endangered species. The following species of trees have relatively high value as potential Indiana bat roost trees: Shagbark hickory (*Carya ovata*), Shellbark hickory (*Carya laciniosa*), Bitternut hickory (*Carya cordiformis)*, Black ash (*Fraxinus nigra*), Green ash (*Fraxinus pennsylvanica*), White ash (*Fraxinus americana*), Shingle oak (*Quercus imbricaria*), Northern red oak (*Quercus rubra*), Slippery elm (*Ulmus rubra*), American elm (*Ulmus americana*), Eastern cottonwood (*Populus deltoides*), Silver maple (*Acer saccharinum*), Sassafras (*Sassafras albidum*), Post oak (*Quercus stellata*), and White oak (*Quercus alba*). Indiana bat habitat consists of suitable trees that include dead and dying trees with exfoliating bark, crevices, or cavities in upland areas or riparian corridors and living trees with exfoliating bark, cavities, or hollow areas formed from broken branches or tops. If suitable trees occur within the project area, these trees should be conserved. If suitable habitat occurs on the project area and trees must be cut, cutting must occur between October 1 and March 31. If suitable trees must be cut during the summer months, a net survey must be conducted between June 15 and July 31, prior to cutting. Net surveys shall incorporate either two net sites per square kilometer of project area with each net site containing a minimum of two nets used for two consecutive nights, or one net site per kilometer of stream within the project limits with each net site containing a minimum of two nets used for two consecutive nights. If no tree removal is proposed, the project is not likely to impact this species.

The DOW recommends no in-water work from at least April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat.

The ODNR Natural Heritage Database has a record within one mile of the project route for a great blue heron rookery. Due to the location, and the type of work planned, this project is not likely to impact this animal assemblage.

The ODNR Natural Heritage Database has a record within one mile of the project route for the lake sturgeon (*Acipenser fulvescens*), a state endangered, and a federal species of concern. If there is no in-water work planned in Lake Erie, this project is not likely to impact this species.

The project is within the range of the piping plover (*Charadrius melodus*), a state and federally endangered bird species. This species does not nest in the state but only utilize stopover habitat as it migrates through the region. Therefore, the project is not likely to have an impact on this species.

The project is within the range of the Kirtland's warbler (*Setophaga kirtlandii*), a state endangered and federally endangered species. This species migrates through Ohio in the spring and fall, traveling between its breeding grounds in Michigan, Wisconsin, and Ontario and its wintering grounds in the Bahamas. Migration is energetically demanding for birds of all species. During stop-over, birds are often faced with the need to acquire food in a short period of time, in unfamiliar surroundings, and while avoiding predators and competing with other migrants and resident birds for limited resources.

In the spring, migrating Kirtland's warblers stopping over in Ohio will have traveled thousands of miles, will be immediately in need of food to satisfy energetic demands, and are thought to be racing to the breeding grounds to establish territories as early as possible. While fall migration is typically not as fast-paced as spring migration, it appears that fall migrating Kirtland's warblers do not build up fat reserves prior to initiating migration, and therefore nearby stopover habitat would be increasingly important for this species.

While migration occurs in a broad front across the entire state, approximately half of all observations in Ohio have occurred within 3 miles of the shore of Lake Erie. During migration, individual birds usually forage in shrub/scrub or forested habitat and may stay in one area for a few days. Because so much of the southern Lake Erie shoreline is already developed, and stopover habitat is already so fragmented, the

DOW recommends that this stopover habitat, (i.e. shrub/scrub or forested area), within three miles of the shoreline be preserved whenever possible. If clearing of suitable habitat cannot be avoided, to preclude adverse effects to Kirtland's warblers, clearing within 3 miles of the shoreline of Lake Erie should not occur from April 22 to June 1 or from August 15 to October 15.

The project is within the range of the spotted turtle (*Clemmys guttata*), a state threatened species. This species prefers fens, bogs and marshes, but also is known to inhabit wet prairies, meadows, pond edges, wet woods, and the shallow sluggish waters of small streams and ditches. Due to the location, the habitat at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

Attached is a set of ArcView shape files with the Ohio Natural Heritage Program records for the project. The files are projected in NAD83 Ohio State Plane South. The units are feet. Records included in the "data" layer may be for rare and endangered plants and animals, geologic features, high quality plant communities and animal assemblages. Fields included are scientific and common names, state and federal statuses, as well as managed area and date of the most recent observation. State and federal statuses are defined as: E = endangered, T = threatened, P = potentially threatened, SC = species of concern, SI = special interest, A = recently added to inventory, status not yet determined, FE = federal endangered, FT = federal threatened, FPE = federal potentially endangered, FC = federal candidate and FSC = federal species of concern.

Also included is a layer for Scenic Rivers ('sr'), Conservation Sites ('sites') and managed areas ('ma') which includes state wildlife areas, nature preserves, parks and forests, national wildlife refuges, county metro parks, as well as sites owned by non-profit groups (such as The Nature Conservancy), museums (such as the Cleveland Museum of Natural History), and others. Please be aware that the managed areas layer may not be complete. We are continually updating this layer as additional information becomes available to us.

The ODNR Natural Heritage Database has no other records for rare or endangered species at this project site. We are unaware of any other unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, nature preserves, parks or forests, national wildlife refuges or other protected natural areas within the project area. Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Please note that although we inventory all types of plant communities, we only maintain records on the highest quality areas.

ODNR appreciates the opportunity to provide these comments. Please contact John Kessler at (614) 265-6621 if you have questions about these comments or need additional information.

John Kessler
ODNR Office of Real Estate
2045 Morse Road, Building E-2
Columbus, Ohio 43229-6693
John.Kessler@dnr.state.oh.us

Environmental Resources Management

1701 Golf Road
Suite 1-700
Rolling Meadows, IL
60008-4242

+1 847 258 8900
+1 847 258 8901 (fax)

December 19, 2014

Mr. John Kessler
Ohio Department of Natural Resources
2045 Morse Road, Bldg E-2
Columbus, OH 43229

Subject: Avon Lake Gas Addition Project
Lorain County, Ohio

Dear Mr. Kessler:

As you know, NRG Ohio Pipeline Company LLC ("NRG Ohio Pipeline") is planning to install a 24-inch diameter high-grade steel natural gas pipeline that will extend south approximately 20-miles from the existing Avon Lake Power Plant, which is located along the Lake Erie shoreline in the City of Avon Lake, to a proposed supply tap location southwest of the Village of Grafton.

The proposed pipeline requires siting approval from the Ohio Power Siting Board ("OPSB"), as well as permits and approvals from other local, State, and federal agencies. NRG Ohio Pipeline anticipates submitting a Letter of Notification ("LON") for OPSB review in December 2014. NRG Ohio Pipeline has been consulting with various federal, State and local authorities, such as the U.S. Fish and Wildlife Service and the U.S. Army Corps of Engineers, and will continue to consult with these authorities. Applications for permits required for the construction of the pipeline will be submitted to the appropriate agencies contemporaneously with the filing of the LON.

Field studies for NRG Ohio Pipeline's proposed route were completed in May 2014. Subsequent to the completion of the field studies, some affected property owners requested adjustments to the proposed route, many of which NRG Ohio Pipeline has accommodated. Additional field studies were conducted in September and October 2014 where the route has been adjusted outside of the May 2014 survey corridor.

Maps illustrating the current proposed route are enclosed with this letter. ERM does not anticipate that the incorporated route adjustments will result in any new or significant adverse impacts to the Indiana bat (*Myotis sodalis*) or Kirtland's warbler (*Setophaga kirtlandii*), as the same mitigation measures the Department previously recommended for these species (letter correspondence dated February 28, 2014) will be implemented.

Further, no adverse impacts to fresh water mussels are anticipated. As you know, the Ohio Mussel Survey Protocol defines how surveys should be conducted for these species should any

potential for impact to these species be anticipated, and which waters of the State are subject to the Protocol. The East Branch of the Black River is the only waterway subject to the protocol that NRG Ohio Pipeline proposes to cross. However, NRG Ohio Pipeline will install the proposed pipeline beneath this waterway via horizontal directional drilling so any potential for impacts to mussels will be entirely avoided. The Department concurred with this conclusion during our April 28, 2014 meeting.

Based on the information provided above and as depicted on the enclosed maps, ERM respectfully requests your concurrence with our conclusion that no adverse effects to federal or State designated listed species are anticipated to occur.

Thank you in advance for your time and consideration. If you have any questions or require additional information about the Project, please do not hesitate to contact me at (616) 738-7370, or via email at jeff.williams@erm.com. You may also contact Nate Rozic at (724) 597-8630, or via email at nathan.rozic@nrg.com.

Sincerely,

Jeff Williams
Senior Biologist

Enclosures: Topographic and Aerial Maps of the Proposed Route, including a CD

cc: Nate Rozic, NRG
Doni Murphy, ERM
Matt Teichert, ERM

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AVON LAKE GAS ADDITION PROJECT

Proposed Route Overview Map

Lake Erie

Avon Lake Plant

Potential Tap Location

Proposed Tap Location

CUYAHOGA COUNTY

LORAIN COUNTY

MEDINA COUNTY

Avon Lake
Sheffield Lake
Sheffield
Lorain
Avon
Bay Village
Lakewood
Rocky River
Westlake
Fairview Park
Cleveland
North Olmsted
Brook Park
North Ridgeville
Elyria
OLMSTED TOWNSHIP
Berea
Olmsted Falls
Middleburg Heights
South Amherst
Strongsville
Vermilion
Amherst
Oberlin
Kipton
Grafton
Eaton Estates
Brunswick

SHEFFIELD TOWNSHIP
ELYRIA TOWNSHIP
BROWNHELM TOWNSHIP
AMHERST TOWNSHIP
NEW RUSSIA TOWNSHIP
HENRIETTA TOWNSHIP
CARLISLE TOWNSHIP
EATON TOWNSHIP
COLUMBIA TOWNSHIP
CAMDEN TOWNSHIP
PITTSFIELD TOWNSHIP
LAGRANGE TOWNSHIP
GRAFTON TOWNSHIP
LIVERPOOL TOWNSHIP
BRUNSWICK HILLS TOWNSHIP

6 · 611 · 254 · 2 · 301 · 90 · 113 · 57 · 80 · 291 · Alt · 237 · 20 · 17 · 10 · 480 · 252 · 71 · 83 · 58 · 82 · 42 · 511

Legend

- Above Ground Proposed Route
- Below Ground Proposed Route
- County Boundary
- Political Township Boundary
- Municipal Boundary
- Railroad

Roads

- Interstate
- US Highway
- State Highway

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0 0.45 0.9 1.8 2.7 3.6 Miles



Date: 12/15/2014

Drawn by: JPS

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AVON LAKE GAS ADDITION PROJECT

Proposed Route

Legend

- Above Ground Proposed Route
- Below Ground Proposed Route
- Mile Post
- NWI Wetland
- Ohio Wetland Inventory Wetland
- Known Protected Species Occurance
- Lake
- River/Stream
- County Boundary
- Political Township Boundary
- Municipal Boundary
- Railroad

Roads

- Interstate
- US Highway
- State Highway

Aerial Photo Source: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community

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Date: 12/15/2014
Drawn by: JPS

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AVON LAKE GAS ADDITION PROJECT

Proposed Route

Legend

- Above Ground Proposed Route
- Below Ground Proposed Route
- Mile Post
- NWI Wetland
- Ohio Wetland Inventory Wetland
- Known Protected Species Occurance
- Lake
- River/Stream
- County Boundary
- Political Township Boundary
- Municipal Boundary
- Railroad

Roads

- Interstate
- US Highway
- State Highway

Aerial Photo Source: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community

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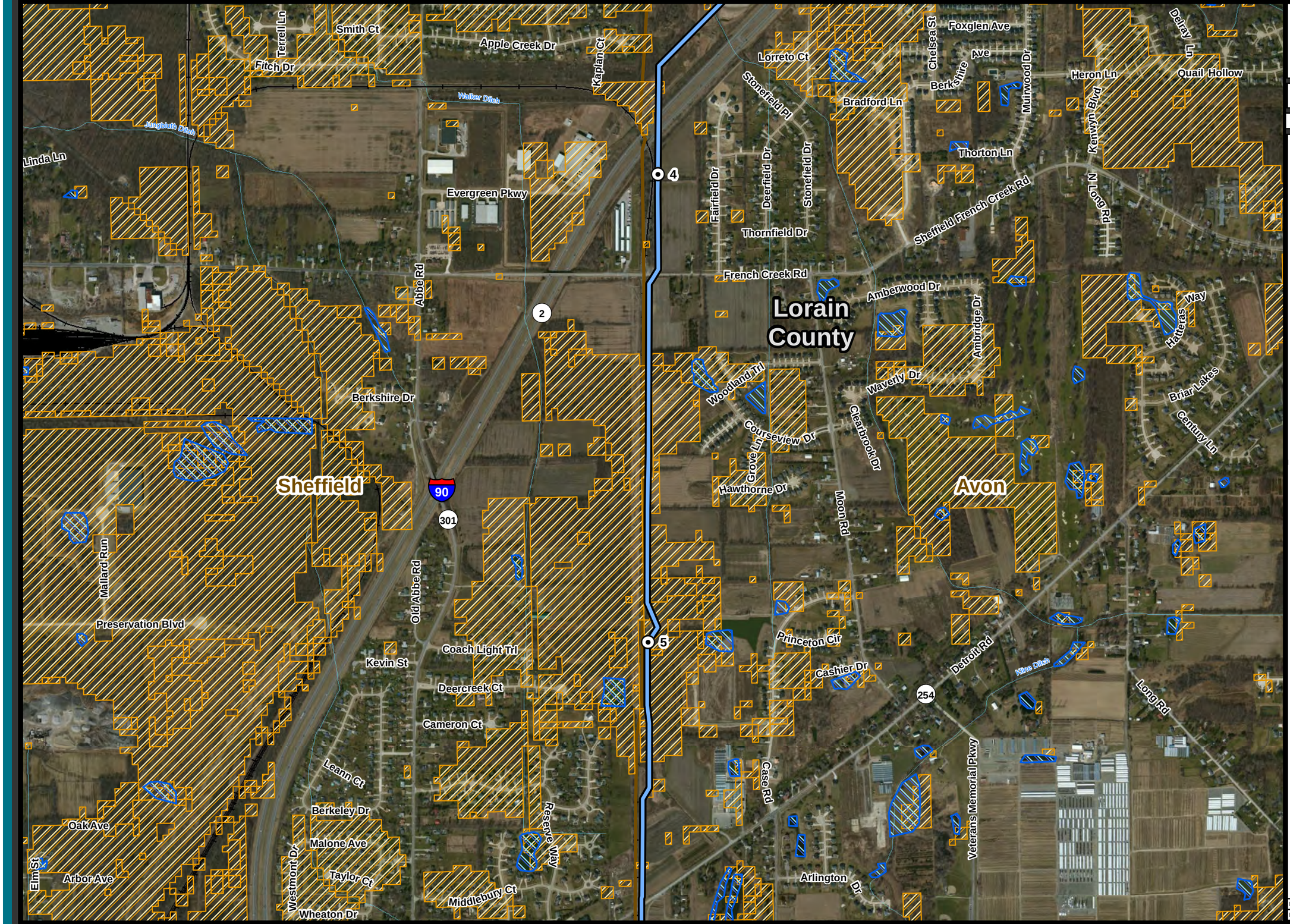
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Sheffield Lake
Oster Rd
Avon Lake
Pin Oak Pkwy
2
Miller Rd
Moore Rd
Freeman Dr
Lorain County
Schueller Ditch
Abbe Rd
Schueller Blvd
Kingsbury Ditch
Chester Industrial Pkwy
Sheffield
301
611
Avon
Birch Ln
Avins Ditch
Chester Rd
French Creek
Colorado Ave
3
90
Cypress W
Cypress E
N Doovys St
Caroline Dr
Lorie Blvd
Lake Dr
Doovys St
Eaton Dr
2
Barkwood Dr
Walker Ditch
Pin Oak Cir
Burrell Dr
Oakwood Dr
Terrell Ln
Chapman Ave
Fitch Dr
Country Club Dr
Chelsea St
Conrad St
Foxglen Ave
Quail Hollow



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AVON LAKE GAS ADDITION PROJECT

Proposed Route

Legend

- Above Ground Proposed Route
- Below Ground Proposed Route
- Mile Post
- NWI Wetland
- Ohio Wetland Inventory Wetland
- Known Protected Species Occurance
- Lake
- River/Stream
- County Boundary
- Political Township Boundary
- Municipal Boundary
- Railroad

Roads

- Interstate
- US Highway
- State Highway

Aerial Photo Source: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community

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AVON LAKE GAS ADDITION PROJECT

Proposed Route

Legend

- Above Ground Proposed Route
- Below Ground Proposed Route
- Mile Post
- NWI Wetland
- Ohio Wetland Inventory Wetland
- Known Protected Species Occurance
- Lake
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- County Boundary
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- Railroad

Roads

- Interstate
- US Highway
- State Highway

Aerial Photo Source: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community

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Arbor Ave
Elm St
Walnut Ave
Taylor Ct
Middlebury Ct
Wheaton Dr
Parkhurst Dr
Detroit Rd
254
Transportation Dr
2
Sheffield
Waterford Cir
Waterford Dr
Abbe Rd
Hoag Dr
Clover Dr
Meadow Lane Ct
Goldenrod Cir
90
Loyola Dr
301
Pepperdine Dr
Antioch Dr
Hemlock Dr
Timberlane Dr
Villanova Cir
Huntington Cir
Greenway Dr
Naples Dr
Campagna St
Gulf Rd
Antoinette St
College Park Dr
Elyria
Abbe Rd N
College Dr
Hillcrest Dr
Hillcrest
Black River
Riddeway Ditch
Windward Dr
Crestview Dr
Finwood Dr
Burns Rd
6
7
Arlington Dr
Evergreen Dr
Case Rd
Stallion Ct
Steeple Chase
Derby Dr
Belmont Dr
Secretariat Ct
Churchill Dr
Bridle Ct
Camelot Way
Somerset Ct
Veterans Memorial Pkwy
Kline Ditch
Avon
Lorain County
Park Tr/ Weatherstone Dr
Windsor Dr
Overlook Ct
Ravenway Dr
Hidden View Ct
Avalon Dr
Kingston Dr
Millenium Ct
Springdale Dr
Pelican Lake Dr
Country Meadow Way
Sun Meadow Ct
Autumn Ln
Lavender Ct
North Ridgeville
Otten Rd
Deer Lake Dr
Stoney Lake Dr
Barres Rd
Jungbluth Ditch
W Breezeway Dr

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MP 6
MP 7
MP 8
MP 9
MP 10
MP 11
MP 12

Site Location



Map Index



Legend

- Milepost Preferred Route
- Preferred Route 200' Corridor
- Highway
- Major Road
- Other Major Road

0 1,000 2,000 4,000 Feet

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NRG Ohio Pipeline Company LLC
Avon Lake Pipeline Project

Location Map

AECOM

Figure 1
January 2014

Data Sources: Lorain County GIS Data 2013
Imagery: Bing Map Topo

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MP 19
MP 18
MP 17
MP 16
MP 15
MP 14
MP 13

Site Location



Map Index



Legend

- Milepost Preferred Route
- Preferred Route 200' Corridor
- Highway
- Major Road
- Other Major Road

0 1,000 2,000 4,000 Feet

1:24,000

NRG Ohio Pipeline Company LLC
Avon Lake Pipeline Project

Location Map

Page 3 of 3

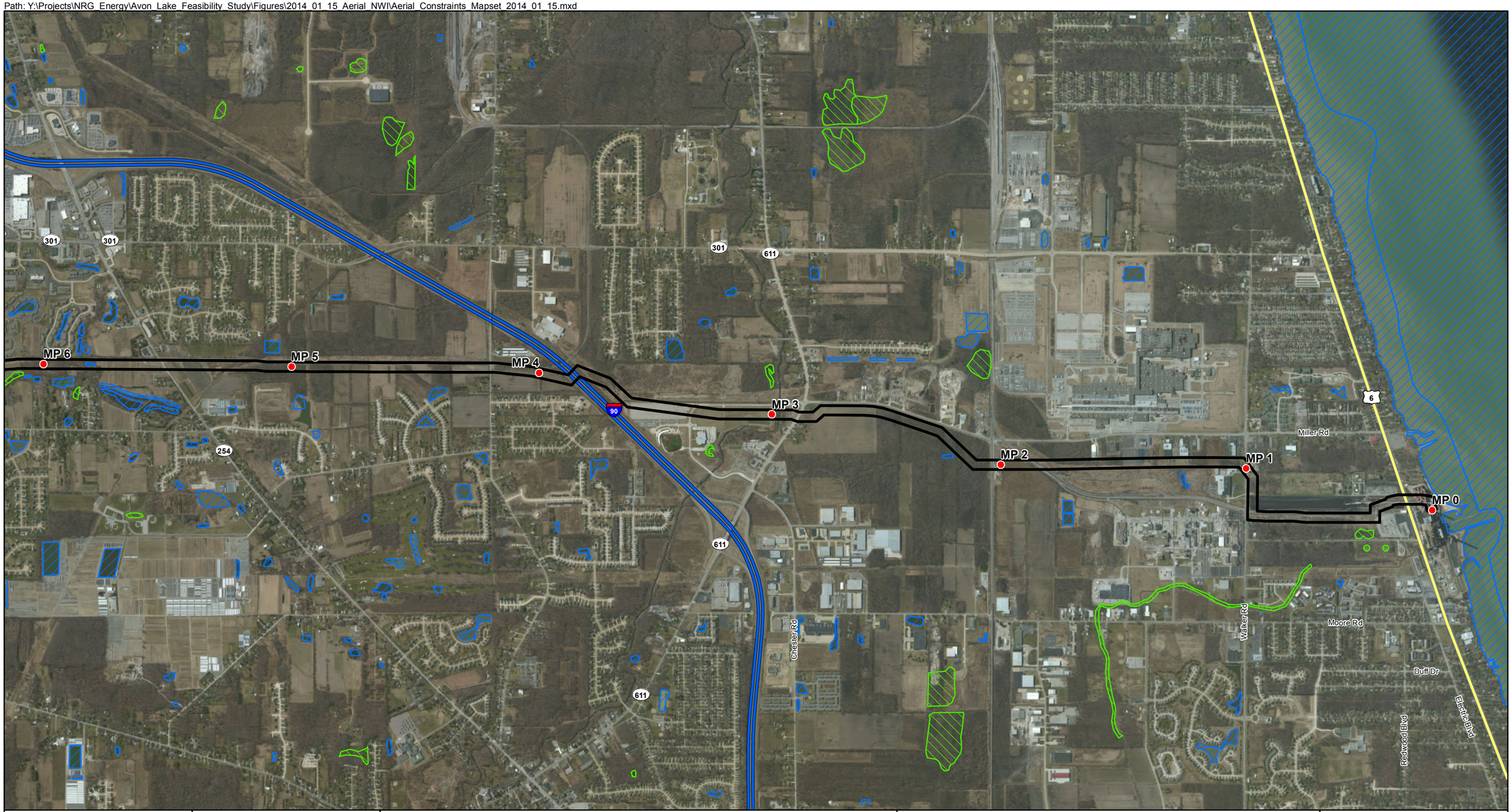
AECOM

Figure 1

January 2014

Data Sources: Lorain County GIS Data 2013
Imagery: Bing Map Topo

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Site Location



Map Index



Legend

- Milepost Preferred Route
- Preferred Route 200' Corridor
- NWI Wetland
- NWI Waterbody
- Highway
- Major Road
- Other Major Road

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NRG Ohio Pipeline Company LLC
Avon Lake Pipeline Project

Aerial Map

Page 1 of 3

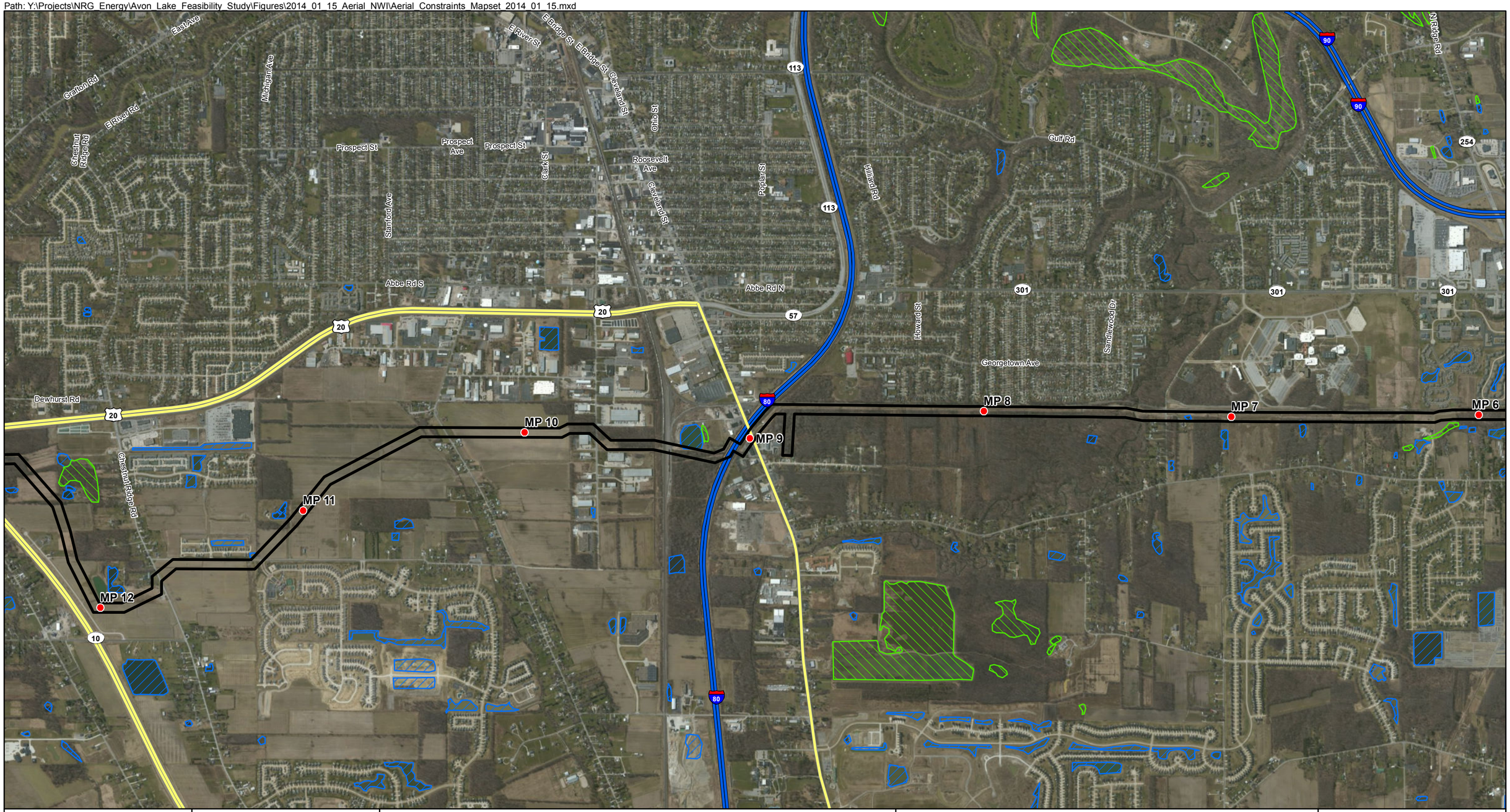
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Figure 2

January 2014

Data Sources: A Lorain County GIS Data 2013; NWI Data 2013
Imagery: Bing Map Aerials

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Site Location



Map Index



Legend

- Milepost Preferred Route
- Preferred Route 200' Corridor
- NWI Wetland
- NWI Waterbody
- Highway
- Major Road
- Other Major Road

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NRG Ohio Pipeline Company LLC
Avon Lake Pipeline Project

Aerial Map

AECOM

Figure 2

January 2014

Data Sources: A Lorain County GIS Data 2013; NWI Data 2013
Imagery: Bing Map Aerials

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MP 19
MP 18
MP 17
MP 16
MP 15
MP 14
MP 13
57
20
82
10
Crafton Rd
E River Rd
Dewhurst Rd

Site Location



Map Index



Legend

- Milepost Preferred Route
- Preferred Route 200' Corridor
- NWI Wetland
- NWI Waterbody
- Highway
- Major Road
- Other Major Road

0 1,000 2,000 4,000 Feet

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NRG Ohio Pipeline Company LLC
Avon Lake Pipeline Project

Aerial Map

AECOM

Figure 2
January 2014

Data Sources: A Lorain County GIS Data 2013; NWI Data 2013
Imagery: Bing Map Aerials

NRG Ohio Pipeline Company LLC
Avon Lake Pipeline Project

Latitude and Longitude for 1,000ft Increments along the Proposed Pipeline Route

1,000 foot Increments	Latitude	Longitude
Pipeline Start 0	41.50435455	-82.05555704
1000	41.50204446	-82.0563126
2000	41.49996644	-82.05499425
3000	41.49722204	-82.05501984
4000	41.49448256	-82.05515567
5000	41.49388315	-82.0580238
6000	41.49168198	-82.05935427
7000	41.48893768	-82.05935081
8000	41.48619346	-82.05930147
9000	41.48344919	-82.05925603
10000	41.48070482	-82.05924448
11000	41.47796037	-82.05926292
12000	41.47588761	-82.06150016
13000	41.47337249	-82.06285807
14000	41.47069393	-82.06351451
15000	41.46809119	-82.06305037
16000	41.46537249	-82.06325117
17000	41.46262899	-82.06330116
18000	41.45990907	-82.06378836
19000	41.45727362	-82.06451079
20000	41.4550024	-82.06644251
21000	41.45255398	-82.06644941
22000	41.44984009	-82.06695539
23000	41.44709623	-82.06700887
24000	41.44435185	-82.06704456
25000	41.44160745	-82.06707792
26000	41.43886306	-82.06711287
27000	41.43611964	-82.06717635
28000	41.43337882	-82.06728068
29000	41.43063448	-82.06732311
30000	41.42789014	-82.06736552
31000	41.4251458	-82.06740794
32000	41.42240149	-82.06745452

33000	41.41967505	-82.06724978
34000	41.41693062	-82.06728113
35000	41.41418617	-82.0673099
36000	41.41144173	-82.06734045
37000	41.4086974	-82.06738577
38000	41.40595312	-82.06743601
39000	41.40321652	-82.06758446
40000	41.40048345	-82.06778074
41000	41.39773919	-82.06783288
42000	41.3949952	-82.0678897
43000	41.392251	-82.0679477
44000	41.38950675	-82.06800246
45000	41.3867625	-82.06805661
46000	41.38401824	-82.06811075
47000	41.38152686	-82.06738526
48000	41.37976483	-82.0652663
49000	41.37741257	-82.06472186
50000	41.3747236	-82.06541149
51000	41.37209519	-82.06581188
52000	41.36966572	-82.06645451
53000	41.36692992	-82.06643551
54000	41.36418544	-82.06646616
55000	41.36144096	-82.0664968
56000	41.35899475	-82.06486299
57000	41.35655455	-82.06319569
58000	41.3546299	-82.06067859
59000	41.35278343	-82.05798748
60000	41.35057668	-82.05630881
61000	41.34783216	-82.05633398
62000	41.34592877	-82.05450472
63000	41.34359141	-82.05298779
64000	41.3416922	-82.05482356
65000	41.34073006	-82.05820787
66000	41.33974448	-82.06154769
67000	41.33793579	-82.06428673
68000	41.33534556	-82.0641007
69000	41.33277843	-82.06281255
70000	41.3307885	-82.06081935
71000	41.33060179	-82.05730651
72000	41.329133	-82.05502398
73000	41.32641396	-82.05481795
74000	41.32410075	-82.0561957

75000	41.32287542	-82.05911915
76000	41.32013087	-82.05914366
77000	41.31761931	-82.05853013
78000	41.31527999	-82.05746311
79000	41.31266071	-82.05788968
80000	41.31109899	-82.06081037
81000	41.31111275	-82.06445043
82000	41.31083414	-82.06803369
83000	41.30818019	-82.06826852
84000	41.30611461	-82.06978856
85000	41.30527212	-82.07300498
86000	41.30358825	-82.0753455
87000	41.30084956	-82.075518
88000	41.29812373	-82.07594308
89000	41.29789151	-82.07932161
90000	41.29777609	-82.08291462
91000	41.29782608	-82.08651429
92000	41.29639487	-82.08921895
93000	41.29385127	-82.08785183
94000	41.29130766	-82.08648482
95000	41.28875462	-82.08517879
96000	41.28621906	-82.08427327
97000	41.28376863	-82.08298303
98000	41.28106303	-82.08256495
99000	41.27864895	-82.08252688
100000	41.2761143	-82.08353362
101000	41.27369579	-82.08465466
102000	41.27104314	-82.08440355
103000	41.26833444	-82.08408662
Pipeline End 104000	41.26560271	-82.08392542

Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR JAMES ZEHRINGER, DIRECTOR

Office of Real Estate
Paul R. Baldridge, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6649
Fax: (614) 267-4764

February 28, 2014

Nate Rozic
NRG Ohio Pipeline Company, LLC
121 Champion Way, Suite 300
Canonsburg Pennsylvania 15317

Re: 14-065; NRG Ohio Pipeline Company, LLC, Avon Lake Pipeline Project, Lorain County, Ohio

Project: The project entails the construction of 20 miles of natural gas pipeline in the Cities of Avon Lake, Avon, North Ridgeville, and Elyria.

Location: The project is located in Eaton, Carlisle, Lagrange Townships, Lorain County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Fish and Wildlife: The Division of Wildlife (DOW) has the following comments.

The DOW recommends that impacts to wetlands and other water resources be avoided and minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.

This project must not have an impact on freshwater native mussels in the area. This applies to both listed and non-listed species. The Ohio Mussel Survey Protocol requires a mussel survey for streams, and water bodies listed in Appendix A of the protocol. Streams with a watershed of 10^2 miles or larger above the impact point that are not listed in Appendix A of the protocol should also be assessed for mussels and/or mussel habitat. Mussel surveys may be recommended for these streams as well. Therefore, if in-water work is planned in any streams that meet any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, as a last resort, the DOW recommends a professional malacologist collect and relocates the mussels to suitable and similar habitat. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol.

The project is within the range of the Indiana bat (*Myotis sodalis*), a state and federally endangered species. The following species of trees have relatively high value as potential Indiana bat roost trees: Shagbark hickory (*Carya ovata*), Shellbark hickory (*Carya laciniosa*), Bitternut hickory (*Carya cordiformis)*, Black ash (*Fraxinus nigra*), Green ash (*Fraxinus pennsylvanica*), White ash (*Fraxinus americana*), Shingle oak (*Quercus imbricaria*), Northern red oak (*Quercus rubra*), Slippery elm (*Ulmus rubra*), American elm (*Ulmus americana*), Eastern cottonwood (*Populus deltoides*), Silver maple (*Acer saccharinum*), Sassafras (*Sassafras albidum*), Post oak (*Quercus stellata*), and White oak (*Quercus alba*). Indiana bat habitat consists of suitable trees that include dead and dying trees with exfoliating bark, crevices, or cavities in upland areas or riparian corridors and living trees with exfoliating bark, cavities, or hollow areas formed from broken branches or tops. If suitable trees occur within the project area, these trees should be conserved. If suitable habitat occurs on the project area and trees must be cut, cutting must occur between October 1 and March 31. If suitable trees must be cut during the summer months, a net survey must be conducted between June 15 and July 31, prior to cutting. Net surveys shall incorporate either two net sites per square kilometer of project area with each net site containing a minimum of two nets used for two consecutive nights, or one net site per kilometer of stream within the project limits with each net site containing a minimum of two nets used for two consecutive nights. If no tree removal is proposed, the project is not likely to impact this species.

The DOW recommends no in-water work from at least April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat.

The ODNR Natural Heritage Database has a record within one mile of the project route for a great blue heron rookery. Due to the location, and the type of work planned, this project is not likely to impact this animal assemblage.

The ODNR Natural Heritage Database has a record within one mile of the project route for the lake sturgeon (*Acipenser fulvescens*), a state endangered, and a federal species of concern. If there is no in-water work planned in Lake Erie, this project is not likely to impact this species.

The project is within the range of the piping plover (*Charadrius melodus*), a state and federally endangered bird species. This species does not nest in the state but only utilize stopover habitat as it migrates through the region. Therefore, the project is not likely to have an impact on this species.

The project is within the range of the Kirtland's warbler (*Setophaga kirtlandii*), a state endangered and federally endangered species. This species migrates through Ohio in the spring and fall, traveling between its breeding grounds in Michigan, Wisconsin, and Ontario and its wintering grounds in the Bahamas. Migration is energetically demanding for birds of all species. During stop-over, birds are often faced with the need to acquire food in a short period of time, in unfamiliar surroundings, and while avoiding predators and competing with other migrants and resident birds for limited resources.

In the spring, migrating Kirtland's warblers stopping over in Ohio will have traveled thousands of miles, will be immediately in need of food to satisfy energetic demands, and are thought to be racing to the breeding grounds to establish territories as early as possible. While fall migration is typically not as fast-paced as spring migration, it appears that fall migrating Kirtland's warblers do not build up fat reserves prior to initiating migration, and therefore nearby stopover habitat would be increasingly important for this species.

While migration occurs in a broad front across the entire state, approximately half of all observations in Ohio have occurred within 3 miles of the shore of Lake Erie. During migration, individual birds usually forage in shrub/scrub or forested habitat and may stay in one area for a few days. Because so much of the southern Lake Erie shoreline is already developed, and stopover habitat is already so fragmented, the

DOW recommends that this stopover habitat, (i.e. shrub/scrub or forested area), within three miles of the shoreline be preserved whenever possible. If clearing of suitable habitat cannot be avoided, to preclude adverse effects to Kirtland's warblers, clearing within 3 miles of the shoreline of Lake Erie should not occur from April 22 to June 1 or from August 15 to October 15.

The project is within the range of the spotted turtle (*Clemmys guttata*), a state threatened species. This species prefers fens, bogs and marshes, but also is known to inhabit wet prairies, meadows, pond edges, wet woods, and the shallow sluggish waters of small streams and ditches. Due to the location, the habitat at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

Attached is a set of ArcView shape files with the Ohio Natural Heritage Program records for the project. The files are projected in NAD83 Ohio State Plane South. The units are feet. Records included in the "data" layer may be for rare and endangered plants and animals, geologic features, high quality plant communities and animal assemblages. Fields included are scientific and common names, state and federal statuses, as well as managed area and date of the most recent observation. State and federal statuses are defined as: E = endangered, T = threatened, P = potentially threatened, SC = species of concern, SI = special interest, A = recently added to inventory, status not yet determined, FE = federal endangered, FT = federal threatened, FPE = federal potentially endangered, FC = federal candidate and FSC = federal species of concern.

Also included is a layer for Scenic Rivers ('sr'), Conservation Sites ('sites') and managed areas ('ma') which includes state wildlife areas, nature preserves, parks and forests, national wildlife refuges, county metro parks, as well as sites owned by non-profit groups (such as The Nature Conservancy), museums (such as the Cleveland Museum of Natural History), and others. Please be aware that the managed areas layer may not be complete. We are continually updating this layer as additional information becomes available to us.

The ODNR Natural Heritage Database has no other records for rare or endangered species at this project site. We are unaware of any other unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, nature preserves, parks or forests, national wildlife refuges or other protected natural areas within the project area. Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Please note that although we inventory all types of plant communities, we only maintain records on the highest quality areas.

ODNR appreciates the opportunity to provide these comments. Please contact John Kessler at (614) 265-6621 if you have questions about these comments or need additional information.

John Kessler
ODNR Office of Real Estate
2045 Morse Road, Building E-2
Columbus, Ohio 43229-6693
John.Kessler@dnr.state.oh.us

Environmental Resources Management

1701 Golf Road
Suite 1-700
Rolling Meadows, IL
60008-4242

+1 847 258 8900
+1 847 258 8901 (fax)

December 19, 2014

Mr. John Kessler
Ohio Department of Natural Resources
2045 Morse Road, Bldg E-2
Columbus, OH 43229

Subject: Avon Lake Gas Addition Project
Lorain County, Ohio

Dear Mr. Kessler:

As you know, NRG Ohio Pipeline Company LLC ("NRG Ohio Pipeline") is planning to install a 24-inch diameter high-grade steel natural gas pipeline that will extend south approximately 20-miles from the existing Avon Lake Power Plant, which is located along the Lake Erie shoreline in the City of Avon Lake, to a proposed supply tap location southwest of the Village of Grafton.

The proposed pipeline requires siting approval from the Ohio Power Siting Board ("OPSB"), as well as permits and approvals from other local, State, and federal agencies. NRG Ohio Pipeline anticipates submitting a Letter of Notification ("LON") for OPSB review in December 2014. NRG Ohio Pipeline has been consulting with various federal, State and local authorities, such as the U.S. Fish and Wildlife Service and the U.S. Army Corps of Engineers, and will continue to consult with these authorities. Applications for permits required for the construction of the pipeline will be submitted to the appropriate agencies contemporaneously with the filing of the LON.

Field studies for NRG Ohio Pipeline's proposed route were completed in May 2014. Subsequent to the completion of the field studies, some affected property owners requested adjustments to the proposed route, many of which NRG Ohio Pipeline has accommodated. Additional field studies were conducted in September and October 2014 where the route has been adjusted outside of the May 2014 survey corridor.

Maps illustrating the current proposed route are enclosed with this letter. ERM does not anticipate that the incorporated route adjustments will result in any new or significant adverse impacts to the Indiana bat (*Myotis sodalis*) or Kirtland's warbler (*Setophaga kirtlandii*), as the same mitigation measures the Department previously recommended for these species (letter correspondence dated February 28, 2014) will be implemented.

Further, no adverse impacts to fresh water mussels are anticipated. As you know, the Ohio Mussel Survey Protocol defines how surveys should be conducted for these species should any

potential for impact to these species be anticipated, and which waters of the State are subject to the Protocol. The East Branch of the Black River is the only waterway subject to the protocol that NRG Ohio Pipeline proposes to cross. However, NRG Ohio Pipeline will install the proposed pipeline beneath this waterway via horizontal directional drilling so any potential for impacts to mussels will be entirely avoided. The Department concurred with this conclusion during our April 28, 2014 meeting.

Based on the information provided above and as depicted on the enclosed maps, ERM respectfully requests your concurrence with our conclusion that no adverse effects to federal or State designated listed species are anticipated to occur.

Thank you in advance for your time and consideration. If you have any questions or require additional information about the Project, please do not hesitate to contact me at (616) 738-7370, or via email at jeff.williams@erm.com. You may also contact Nate Rozic at (724) 597-8630, or via email at nathan.rozic@nrg.com.

Sincerely,

Jeff Williams
Senior Biologist

Enclosures: Topographic and Aerial Maps of the Proposed Route, including a CD

cc: Nate Rozic, NRG
Doni Murphy, ERM
Matt Teichert, ERM

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AVON LAKE GAS ADDITION PROJECT

Proposed Route Overview Map

Lake Erie

Avon Lake Plant

Potential Tap Location

Proposed Tap Location

CUYAHOGA COUNTY

LORAIN COUNTY

MEDINA COUNTY

Avon Lake
Sheffield Lake
Sheffield
Lorain
Avon
Bay Village
Lakewood
Rocky River
Westlake
Fairview Park
Cleveland
North Olmsted
Brook Park
North Ridgeville
Elyria
OLMSTED TOWNSHIP
Berea
Olmsted Falls
Middleburg Heights
South Amherst
Strongsville
Vermilion
Amherst
Oberlin
Kipton
Grafton
Eaton Estates
Brunswick

SHEFFIELD TOWNSHIP
ELYRIA TOWNSHIP
BROWNHELM TOWNSHIP
AMHERST TOWNSHIP
NEW RUSSIA TOWNSHIP
HENRIETTA TOWNSHIP
CARLISLE TOWNSHIP
EATON TOWNSHIP
COLUMBIA TOWNSHIP
CAMDEN TOWNSHIP
PITTSFIELD TOWNSHIP
LAGRANGE TOWNSHIP
GRAFTON TOWNSHIP
LIVERPOOL TOWNSHIP
BRUNSWICK HILLS TOWNSHIP

6 · 611 · 254 · 2 · 301 · 90 · 113 · 57 · 80 · 291 · Alt · 237 · 20 · 17 · 10 · 480 · 252 · 71 · 83 · 58 · 82 · 42 · 511

Legend

- Above Ground Proposed Route
- Below Ground Proposed Route
- County Boundary
- Political Township Boundary
- Municipal Boundary
- Railroad

Roads

- Interstate
- US Highway
- State Highway

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AVON LAKE GAS ADDITION PROJECT

Proposed Route

Legend

- Above Ground Proposed Route
- Below Ground Proposed Route
- Mile Post
- NWI Wetland
- Ohio Wetland Inventory Wetland
- Known Protected Species Occurance
- Lake
- River/Stream
- County Boundary
- Political Township Boundary
- Municipal Boundary
- Railroad

Roads

- Interstate
- US Highway
- State Highway

Aerial Photo Source: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community

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AVON LAKE GAS ADDITION PROJECT

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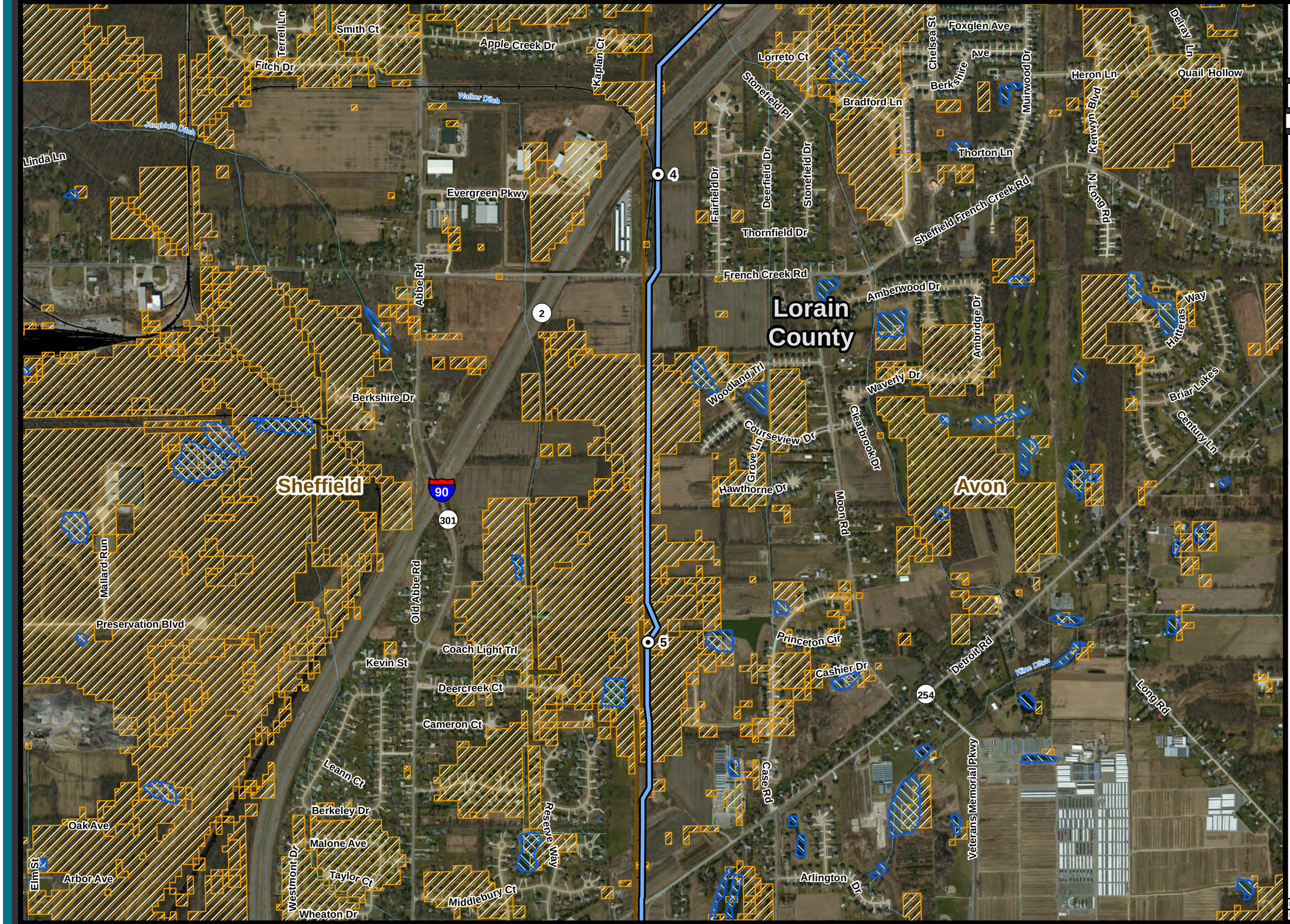
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Sheffield Lake
Oster Rd
Avon Lake
Pin Oak Pkwy
2
Miller Rd
Moore Rd
Freeman Dr
Lorain County
Schueller Ditch
Abbe Rd
Schueller Blvd
Kingsbury Ditch
Chester Industrial Pkwy
Sheffield
301
611
Avon
Birch Ln
Avins Ditch
Chester Rd
French Creek
Colorado Ave
3
90
Cypress W
Cypress E
N Doovys St
Caroline Dr
Lorie Blvd
Lake Dr
Doovys St
Eaton Dr
2
Barkwood Dr
Walker Ditch
Pin Oak Cir
Burrell Dr
Oakwood Dr
Terrell Ln
Chapman Ave
Fitch Dr
Country Club Dr
Chelsea St
Conrad St
Foxglen Ave
Quail Hollow



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AVON LAKE GAS ADDITION PROJECT

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Aerial Photo Source: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community

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Arbor Ave
Elm St
Walnut Ave
Taylor Ct
Middlebury Ct
Wheaton Dr
Parkhurst Dr
Detroit Rd
254
Transportation Dr
2
Sheffield
Waterford Cir
Waterford Dr
Abbe Rd
Hoag Dr
Clover Dr
Meadow Lane Ct
Goldenrod Cir
90
Loyola Dr
301
Pepperdine Dr
Antioch Dr
Hemlock Dr
Timberlane Dr
Villanova Cir
Huntington Cir
Greenway Dr
Naples Dr
Campagna St
Gulf Rd
Antoinette St
College Park Dr
Elyria
Abbe Rd N
College Dr
Hillcrest Dr
Hillcrest
Black River
Riddeway Ditch
Windward Dr
Crestview Dr
Finwood Dr
Burns Rd
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Arlington Dr
Evergreen Dr
Case Rd
Stallion Ct
Steeple Chase
Derby Dr
Belmont Dr
Secretariat Ct
Churchill Dr
Bridle Ct
Camelot Way
Somerset Ct
Veterans Memorial Pkwy
Kline Ditch
Avon
Lorain County
Park Tr/ Weatherstone Dr
Windsor Dr
Overlook Ct
Ravenway Dr
Hidden View Ct
Avalon Dr
Kingston Dr
Millenium Ct
Springdale Dr
Pelican Lake Dr
Country Meadow Way
Sun Meadow Ct
Autumn Ln
Lavender Ct
North Ridgeville
Otten Rd
Deer Lake Dr
Stoney Lake Dr
Barres Rd
Jungbluth Ditch
W Breezeway Dr

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Topo Base Map Source: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community
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Sabol Ct
Giles Rd
Willow Creek
Jackson Ditch
Brush Sch
Castleton Ln
Hill Ditch
Eastwood Dr
Royalton Rd
Lorain County
Field
EATON TOWNSHIP
Durkee Rd
Great Blue Heron Rookery
Overlook Dr
Davis Dr
East Branch Black River
Robson Rd
Edgewood Dr
Georgette Dr
Brentview Dr
Waterfall Dr
Lakeview Dr
Meadowbrook Dr
Esther Dr
Brentwood Lake
Sycamore Ln
CARLISLE TOWNSHIP
Grafton Rd
Beaver Creek Ln
ROBSON ROAD
Golf Course
Capel Rd
Midview High Sch
Alexander Ditch
Liberty Ln
Gas Well
St Mary
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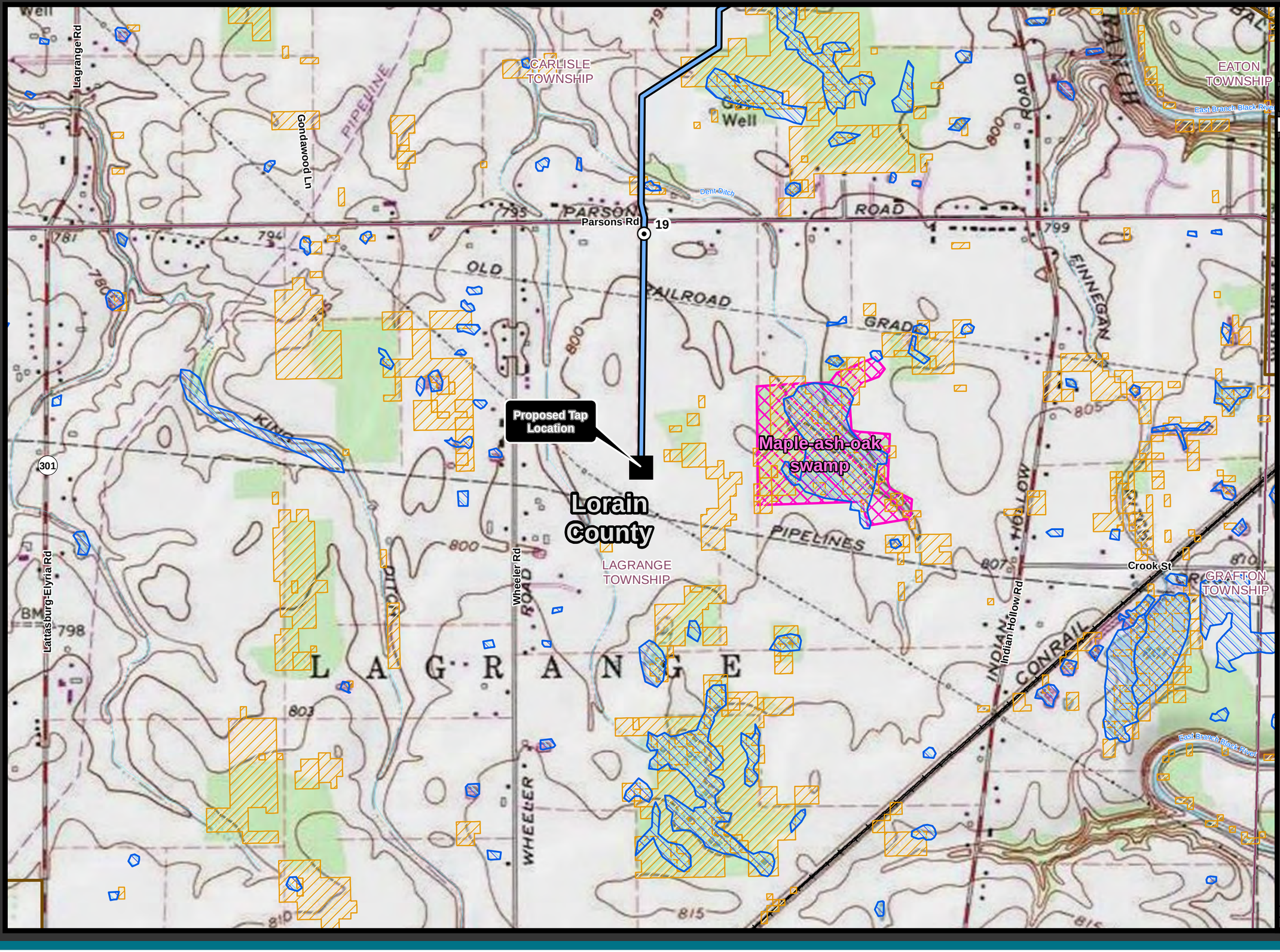


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ROAD
PIPELINE
Alexis Dr
Carrington Dr
DITCH
CARLISLE TOWNSHIP
Gas Well
Banks Rd
Valkyries Cir
Hidden Ln
Indian Hollow Rd
Long Beech Fern
Lorain County
Arbor Ct
River Ridge Ct
St Marys Cem
EATON TOWNSHIP
Grafton Rd
Kensington Dr
Glendalough Ave
Wallace Ct
Timber Trl
Raiser Ditch
Hunting Hollow
Fox Run
Hunters Chase
Woodland Chase
Washington Dr
Brewster Ct
Commerce Dr
Grafton
N Main St
Yarmouth Rd
Wellfleet Dr
Plymouth Dr
Novak Rd
Vivian Dr
Main St
BOUNDARY
BALTIMORE
BRANCH
East Branch Black River
Sewage Disposal
McAlpin Ct
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Ontario St
Brandt Ditch
PARSONS
Parsons Rd
LAGRANGE TOWNSHIP
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AVON LAKE GAS ADDITION PROJECT

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