Lake Erie Connector Project

Final Environmental Assessment
Volume II-Appendices

U.S. Department of Energy
Office of Electricity Delivery and Energy Reliability
Washington DC

October 2016

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FINAL

LAKE ERIE CONNECTOR PROJECT ENVIRONMENTAL ASSESSMENT

Volume II Appendices

DOE/EA-2019

U.S. DEPARTMENT OF ENERGY
OFFICE OF ELECTRICITY DELIVERY AND ENERGY RELIABILITY

COOPERATING AGENCY

U.S. ARMY CORPS OF ENGINEERS

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APPENDIX J BLASTING PLAN

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October 6, 2016

Mr. Karl Gross, P.E.
Permitting Chief, Waterways and Wetlands Program
Pennsylvania Department of Environmental Protection
Northwest Regional Office
230 Chestnut Street
Meadville, PA 16335

Re: Response to Technical Deficiency Notice
ITC Lake Erie Connector LLC – Lake Erie Connector Project
APS ID# 868886, AUTH ID# 1107270, E25-778
Conneaut, Girard and Springfield Townships, Erie County

Dear Mr. Gross:

ITC Lake Erie Connector, LLC (ITC) has reviewed the items identified by the Pennsylvania Department of Environmental Protection (DEP) in its letter dated August 11, 2016, with respect to the above referenced Joint Permit Application for the Lake Erie Connector Project (Project). ITC is providing the following responses. In each case, we are repeating DEP's comment in italics, and then providing ITC's response.

1. *On June 7, 2016, the Department received documents that indicate route modifications for the electric transmission cables within specific sections of the in-land portion of the proposed project. Please provide verification that the Pennsylvania Natural Diversity Inventory ("PNDI") reviewing agencies were provided with the information associated with the route modifications. Additionally, please provide any applicable updated PNDI clearance letters from each reviewing agency associated with route modifications. [105.14(b)(4)]*

Response: On August 16, 2016, HDR, on behalf of ITC, confirmed with the DEP that additional consultation with the Department of Conservation and Natural Resources (DCNR) was required and should include acknowledgment of completion of the July 2016 rare, threatened, and endangered plant survey conducted in the vicinity of the AC cable route revision as well as concurrence that ITC has satisfied all PNDI requirements associated with the currently proposed route alignment. In a letter dated September 13, 2016, DCNR stated that no project impacts are likely (Attachment 1).

On August 16, 2016, the DEP further stated that ITC did not need to participate in additional consultation with the U.S. Fish and Wildlife Service (USFWS) or the Pennsylvania Game Commission to fulfill PNDI review requirements for the associated June 7, 2016, route

modifications. DEP asked that HDR provide responses to the March 8, 2016 PNDI review request that HDR sent to each of the PNDI review agencies requesting review and reconfirmation of previous determinations after updates to the Project had occurred since the January 23, 2015, PNDI review request. These responses, which have been previously submitted to DEP, are also included in Attachment 1.

2. *The permit application indicates the use of confined stemmed blasting for the removal of bedrock within the bed of Lake Erie. Please be advised that blasting permits may be needed from the Department and the Pennsylvania Fish and Boat Commission ("PFBC"). Please provide a status update regarding the submission of an application for any applicable blasting permit(s). [105.14(b)(6)]*

Response: An Application for Permit for Use of Explosives in Commonwealth Waters was submitted to the PFBC on September 27, 2016, and a copy was sent to the DEP and U.S. Army Corps of Engineers (USACE) (Attachment 2). All proposed blasting will take place within an approximately one-mile segment of the lake bed from the Lake Erie shoreline HDD exit point northward until exposed or shallow bedrock is no longer encountered. As advised by DEP staff (discussion with Tom Shofestall, DEP, October 9, 2015), ITC also plans to submit a Blasting Activity Permit application to DEP after the Ch. 105 Permit is issued and prior to construction.

3. *Please provide a PNDI clearance letter from the PFBC that is comprised of an evaluation for the entire project area, including an endangered species impact review for the eastern sand darter within the in-lake portion of the project. Additionally, as of the date of this letter, the PFBC has not concluded their review of the water obstruction and encroachment permit application. The Department anticipates receiving comments from the PFBC once their review is complete. Please be advised that the Department will send you a separate letter that includes a list of any comment received from the PFBC and a request to provide a response document to address any comment provided. [105.14(b)(4)]*

Response: In a letter dated October 5, 2016, PFBC provided a PNDI clearance letter, including a biological opinion about the effects of the proposed activity on state listed fish species, and a Special Permit that authorizes incidental take for the eastern sand darter (Attachment 1).

PFBC provided comments on the Joint Permit Application in a letter dated August 15, 2016 (Attachment 3). ITC has reviewed the comments on the Project provided by the PFBC and provides the following responses:

A. The Pennsylvania Fish and Boat Commission (PFBC) manages Crooked Creek as a stocked trout fishery in the vicinity of the proposed project and recommends an instream construction restriction from March 1 to June 15 to protect stocked trout angling. In

addition, the PFBC manages Crooked Creek as migratory steelhead fishery. The PFBC recommends an instream construction restriction from September 1 through April 1 to minimize impacts to the steelhead fishery. The PFBC recommends that the applicant and contractor understand the implications of these restrictions and plan any and all instream construction work accordingly.

Response: Horizontal directional drilling (HDD) will be used to install the cables at the two locations where the terrestrial cable route crosses Crooked Creek. The HDD boring would be at least 4 feet below the bottom of Crooked Creek and no earth disturbance would be closer than 150 feet from the creek. As such, the proposed construction method will not impact any stocked trout or associated angling opportunity and will also avoid any adverse impacts to steelhead. HDR conveyed this information to PFBC in an email dated August 31, 2016. In an email from Dan Ryan, PFBC, to HDR on September 9, 2016 (Attachment 4), it was noted that ITC should schedule the HDD cable installations at the two Crooked Creek crossings within the June 16 to August 31 time period in order to comply with the requested PFBC timing restrictions. However, PFBC noted that ITC could still conduct the HDD crossings at Crooked Creek during the instream construction restriction period so long as prior approval (i.e., a waiver) is granted from the PFBC, with emphasis on (1) not impeding any existing angler parking or access to the stream, and (2) minimizing the probability of occurrence of an inadvertent return during the HDD installation process that would affect Crooked Creek. ITC will schedule the HDD cable installations at the two Crooked Creek to comply with the construction restrictions, or ITC will apply to PFBC for prior approval if it seeks to work at these two locations at a time outside of that recommended by PFBC.

B. *The PFBC recommends that the applicant contact Tom Burrell of the PFBC to determine if an Aids-to-Navigation plan (ATON plan) is required for the proposed project. WCO Burrell can be contacted at 717-705-7838 or tburrell@pa.gov.*

Response: On August 31, 2016, ITC contacted Tom Burrell to determine if an ATON plan is necessary for the Project. Based on this conversation, Mr. Burrell indicated in an e-mail dated September 1, 2016, that an ATON plan is not required for the Project (Attachment 5).

C. *The proposed project intends to blast and trench in potential fish spawning habitats (generally, waters < 20 feet deep) during spawning timeframes of major Lake Erie gamefishes such as yellow perch, smallmouth bass and walleye (generally, April through July). The PFBC recommends that the applicant compensate for the proposed impacts to Lake Erie fishes and their associated habitat through the construction of reefs for fish habitat. Reefs can be constructed from excavated bedrock material, and be of sufficient size, shape, depth, location and proximity to benefit Lake Erie fishes as well as anglers. The applicant should contact Daniel Ryan of the PFBC (814-359-5140) to further discuss*

reef configuration and siting, and ultimately a report including this information should be submitted to the PFBC to be published on the PFBC website for angler awareness.

Response: On behalf of ITC, HDR submitted a draft conceptual plan to Dan Ryan, PFBC, on August 31, 2016, depicting the proposed creation of two artificial reefs in the vicinity of the Lake Erie shoreline HDD exit pits. After review by and consultation with PFBC, PFBC approved the revised plan for the reefs (see Figure 6 of Attachment 2) in an email dated September 26, 2016 (Attachment 6).

4. *On August 8, 2016, the United States Army Corps of Engineers ("USACOE") provided the Department with a copy of the comments that were generated from the USACOE's public notice of the proposed project. For your reference, copies of the comments received by the USACOE are attached to this letter. Please provide the Department with a copy of the response document that will be provided to the USACOE to address the comments that were received. [105.14(b)(11)]*

Response: A copy of the response document to the USACOE is provided in Attachment 7.

Sincerely,

Andrew Jamieson, Counsel
ITC Lake Erie Connector LLC

Attachments
Attachment 1 - Pennsylvania Natural Diversity Inventory Clearance Letters
Attachment 2 - PFBC Blasting Permit Application
Attachment 3 - PFBC Comments on the Joint Permit Application
Attachment 4 - PFBC Response on Crooked Creek Crossing
Attachment 5 - PFBC Response Regarding Aids to Navigation
Attachment 6 - PFBC Approval of Plan for Artificial Reefs
Attachment 7 - ITC Response to Comments on the JPA Received by the USACE

cc: Michael Fodse, USACOE
Nancy Mullen, USACOE
Gene Clemente, Erie County Conservation District
Scott Dudzic, Pennsylvania DEP
Dan Ryan, Pennsylvania Fish & Boat Commission
Peter Browne, HDR
R. Timothy Weston, K&L Gates LLP

Attachment 1

Pennsylvania Natural Diversity Inventory Clearance Letters

- Email from Scott Dudzic dated August 16, 2016
- Letter from Pennsylvania Department of Conservation and Natural Resources (DCNR) dated September 13, 2016
- Letter from Pennsylvania Game Commission dated March 15, 2016
- Letter from U.S. Fish and Wildlife Service dated April 11, 2016
- Letter from DCNR dated March 23, 2016
- Letter from Pennsylvania Fish and Boat Commission dated October 5, 2016

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Email from Scott Dudzic dated August 16, 2016

From: Dudzic, Scott <sdudzic@pa.gov>
Sent: Tuesday, August 16, 2016 1:15 PM
To: Mitchell, Robert
Cc: Browne, Peter
Subject: RE: Lake Erie Connector - rare plant survey for AC route revision

Rob,

During our phone call this morning we also discussed the letter, dated March 8, 2016, that HDR sent to each of the PNHP agencies. This letter requested review and reconfirmation of previous determinations after updates to the project had occurred since the January 23, 2015 PNDI review request. Has HDR received any letters (with the exception of the PFBC since they haven't provided any clearance to date) from the PNHP agencies providing reconfirmation? If HDR has received reconfirmation letters/emails, please provide those as well. Thank you!

Scott Dudzic | Water Pollution Biologist
Department of Environmental Protection | Waterways & Wetlands
Northwest Regional Office
230 Chestnut Street | Meadville, PA 16335
Phone: 814.332.6165 | Fax: 814.332.6117
www.dep.pa.gov

From: Mitchell, Robert [mailto:Robert.Mitchell@hdrinc.com]
Sent: Tuesday, August 16, 2016 10:31 AM
To: Dudzic, Scott
Cc: Browne, Peter
Subject: RE: Lake Erie Connector - rare plant survey for AC route revision

Scott: Thanks for getting back to me this morning. As discussed, to address technical deficiency #1 in the 8/11/16 PA DEP letter to ITC, we will pursue a written statement (either letter or e-mail) from PA DCNR to acknowledge completion of our 7/6/16 RTE plant survey in the vicinity of the AC route revision and to concur that we have satisfied all PNDI review requirements. You also stated that we do not need to acquire any additional written confirmation from USFWS or the PA Game Commission since the route revisions all occur within their previously assessed area.

In addition, our continued consultation with PA Fish & Boat Commission to address Item #3 in the 8/11/16 letter will address both the eastern sand darter endangered species review and their concurrence on the entire project route.

Thanks for your assistance.

Rob

Rob Mitchell
Manager - Environmental & Regulatory Services

HDR
970 Baxter Boulevard, Suite 301
Portland, ME 04103

D 207-239-3842 **M** 207-272-9491
robert.mitchell@hdrinc.com]

hdrinc.com/follow-us

From: Mitchell, Robert
Sent: Tuesday, August 16, 2016 9:54 AM
To: Scott Dudzic (sdudzic@pa.gov)
Cc: Peter Browne (peter.browne@hdrinc.com)
Subject: FW: Lake Erie Connector - rare plant survey for AC route revision

Scott: As indicated in my voice mail message to you this morning, this is the e-mail (below) that Peter Browne sent to Karl Gross on July 14th stating that we completed our RTE plant survey in the area associated with the Lake Erie Connector project AC route revision. The field survey findings report is attached.

In relation to the technical deficiency item #1 in Karl's August 11th letter to ITC, the PNDI review area and our field survey area previously covered all of the route revision segments. The only exception was the need to field survey this one area for potential RTE plants during the time of year when the plants would most likely be flowering, which we did. It was originally field surveyed last year. No protected plant species were found during the July 6, 2016 field survey. Do you still need a sign-off letter from PNDI concurring that we found no protected plant species?

Peter is on vacation this week and I am going to be out of the office from Wednesday through Friday. However, we will be checking emails and phone messages periodically and will get back to you, as needed.

Thanks, Rob

Rob Mitchell
Manager - Environmental & Regulatory Services

HDR
970 Baxter Boulevard, Suite 301
Portland, ME 04103

D 207-239-3842 **M** 207-272-9491
robert.mitchell@hdrinc.com]

hdrinc.com/follow-us

From: Browne, Peter
Sent: Thursday, July 14, 2016 10:55 AM
To: kagross@pa.gov
Cc: Nancy.J.Mullen@usace.army.mil; Michael.M.Fodse@usace.army.mil; gclemente@erieconservation.com; Jamieson, Andrew (AJAMIESON@Itctransco.com); Weston, R. Timothy (tim.weston@klgates.com); Steve Halmi (shalmi@deisshalmi.com); Mitchell, Robert
Subject: Lake Erie Connector - rare plant survey for AC route revision

Hi Karl,

Regarding the Lake Erie Project, ESI completed their field survey on the portion of the AC route that was revised in the spring and where rare plants might potentially be occurring in the forested wetlands. This is the time of year that these plants would be flowering, and thus easiest to locate. None were found. Attached, please find the summary report.

Best regards,

Peter

Peter Browne
207.239.3863

hdrinc.com/follow-us

From: Browne, Peter
Sent: Tuesday, June 07, 2016 2:43 PM
To: 'kagross@pa.gov'
Cc: Nancy.J.Mullen@usace.army.mil; Michael.M.Fodse@usace.army.mil; gclemente@erieconservation.com; Jamieson, Andrew (AJAMIESON@Itctransco.com); Weston, R. Timothy (tim.weston@klgates.com); Steve Halmi (shalmi@deisshalmi.com); Mitchell, Robert
Subject: Lake Erie Connector - route modifications

Hi Karl,

In follow-up to our phone discussion on May 12, 2016, please find the attached document summarizing a few route modifications for the underground segment of the proposed Lake Erie Connector Project, for which ITC submitted a Joint Permit Application for Pennsylvania Water Obstruction and Encroachment Permit and U.S. Army Corps of Engineers Rivers and Harbors Act §10 and Clean Water Act §404 Permits on January 29, 2016.

ITC plans to modify the Erosion and Sedimentation Control Plan and the Stormwater Management Plan to incorporate these route modifications and they will be submitted to you. ITC will also submit these modified plans to the Erie County Conservation District as a revision to the NPDES permit application that was submitted on January 29, 2016.

Please feel free to contact me should you have any questions or require additional information. I can also follow up with hard copies of the attached for your files, upon request.

Best regards,

Peter

Peter Browne
Senior Consultant, Renewable Energy Services

HDR
970 Baxter Boulevard, Suite 301
Portland, ME 04103
207.239.3863
peter.browne@hdrinc.com

hdrinc.com/follow-us

Letter from Pennsylvania Department of Conservation and Natural Resources (DCNR)
dated September 13, 2016

pennsylvania
DEPARTMENT OF CONSERVATION
AND NATURAL RESOURCES

BUREAU OF FORESTRY

September 13, 2016 **PNDI Number: 20140521451998**

Peter Browne
HDR, Inc.
970 Baxter Boulevard, Suite 301
Portland, ME 04103
Email: peter.browne@hdrinc.com (hard copy will not follow)

Re: UPDATE: ITC Lake Erie Connector, LLC / Lake Erie Connector Project
Conneaut, Springfield & Girard Townships, Erie County, PA

Dear Mr. Browne,

Thank you for the submission of the Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Receipt Number 20140521451998 for review. PA Department of Conservation and Natural Resources screened this project for potential impacts to species and resources under DCNR's responsibility, which includes plants, terrestrial invertebrates, natural communities, and geologic features only.

No Impact Anticipated per Survey (with Conservation Measure)

PNDI records indicate species or resources under DCNR's jurisdiction are located in the vicinity of the project. DCNR requested a botanical survey on June 19, 2014. Surveys were conducted by Environmental Solutions & Innovations, Inc. in May and July of 2015. No state-listed species were found on the project site.

Minor changes in the project prompted an additional botanical survey completed on 6 July 2016. No species of concern were identified. **Therefore, DCNR has determined that no impact is likely. No further coordination with our agency is needed for this project.**

Conservation Measure – Voluntary Action
Two PA Watchlist species were identified within or adjacent to the project area: shellbark hickory (*Carya laciniosa*) and Canada yew (*Taxis canadensis*). These species do not currently receive formal protection but are being closely monitored in Pennsylvania. The Canada yew population and an associated large and healthy American chestnut (*Castanea dentata*) will be avoided. Impacts to shellbark hickory will be minimized where possible.

DCNR recommends the following steps to help prevent the spread of invasive species:

- The area of disturbance should be minimized to the fullest extent that would allow for construction. This will help to lessen the area of soil and vegetation disturbance associated with this project.

- If possible, please clean all construction equipment and vehicles thoroughly (especially the undercarriage and wheels) before they are brought on site. This will remove invasive plant seeds from the equipment and undercarriages of the vehicles that may have been picked up at other sites.

- Avoid using seed mixes that include invasive plant species (e.g. crown vetch) to re-vegetate the area. Please also attempt to use weed-free straw or hay mixes when possible. More information about Pennsylvania invasive plants can be found here: *http://www.dcnr.state.pa.us/conservationscience/invasivespecies/index.htm*

This response represents the most up-to-date review of the PNDI data files and is valid for two (2) years only. If project plans change or more information on listed or proposed species becomes available, our determination may be reconsidered. Should the proposed work continue beyond the period covered by this letter, please resubmit the project to this agency as an "Update" (including an updated PNDI receipt, project narrative and accurate map). As a reminder, this finding applies to potential impacts under DCNR's jurisdiction only. Visit the PNHP website for directions on contacting the Commonwealth's other resource agencies for environmental review.

Should you have any questions or concerns, please contact Jason Ryndock, Ecological Information Specialist, by phone (717-705-2822) or via email (c-jryndock@pa.gov).

Sincerely

Greg Podniesinski, Section Chief
Natural Heritage Section

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Letter from Pennsylvania Game Commission dated March 15, 2016

Division of Environmental
Planning and Habitat
Protection
717-783-5957

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission
2001 ELMERTON AVENUE
HARRISBURG, PA 17110-9797

"To manage all wild birds, mammals and their habitats for current and future generations."

ADMINISTRATIVE BUREAUS:

ADMINISTRATION.....717-787-5670
HUMAN RESOURCES.....717-787-7836
FISCAL MANAGEMENT.....717-787-7314
CONTRACTS AND PROCUREMENT.....717-787-6594
LICENSING.....717-787-2084
OFFICE SERVICES.....717-787-2116
WILDLIFE MANAGEMENT.....717-787-5529
INFORMATION & EDUCATION.....717-787-6286
WILDLIFE PROTECTION.....717-783-6526
WILDLIFE HABITAT MANAGEMENT.....717-787-6818
REAL ESTATE DIVISION.....717-787-6568
AUTOMATED TECHNOLOGY SERVICES.....717-787-4076

www.pgc.state.pa.us

March 15, 2016 **Large Project Review**

Peter Browne
HDR
970 Baxter Boulevard, Suite 301
Portland, ME 04103
peter.browne@hdrinc.com

Re: ITC Lake Erie Connector, LLC – Lake Erie Connector Project (*Update)*
Springfield, Girard, & Conneaut Townships, Erie County, PA

Dear Mr. Browne,

Thank you for submitting the Pennsylvania Natural Diversity Inventory (PNDI) Large Project Environmental Review request. The Pennsylvania Game Commission (PGC) screened this project for potential impacts to species and resources of concern under PGC responsibility, which includes birds and mammals only.

No Impact Anticipated

PNDI records indicate that no known occurrences of species or resources of concern under PGC jurisdiction occur in the vicinity of the project. Therefore, the above-referenced project is not expected to impact any birds or mammals of concern, and no further coordination with the PGC is necessary for this project at this time.

This response represents the most up-to-date summary of the PNDI data files and is valid for two (2) years from the date of this letter. An absence of recorded information does not necessarily imply actual conditions on site. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered.

Should the proposed work continue beyond the period covered by this letter, please resubmit the project to this agency as an "Update" (including an updated PNDI receipt, project narrative and accurate map). If the proposed work has not changed and no additional information concerning listed species is found, the project will be cleared for PNDI requirements under this agency for two additional years.

This finding applies to impacts to birds and mammals only. To complete your review of state and federally-listed threatened and endangered species and species of special concern, please be sure that the U.S. Fish and Wildlife Service, the PA Department of Conservation and Natural Resources, and/or the PA Fish and Boat Commission have been contacted regarding this project as directed by the online PNDI ER Tool found at www.naturalheritage.state.pa.us.

Sincerely,

John Taucher
Division of Environmental Planning & Habitat Protection
Bureau of Wildlife Habitat Management
Phone: 717-787-4250, Extension 3632
Fax: 717-787-6957
E-mail:jotaucher@pa.gov

A PNHP Partner

Pennsylvania Natural Heritage Program

JWT/jwt

cc: File

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Letter from U.S. Fish and Wildlife Service dated April 11, 2016

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pennsylvania Field Office
110 Radnor Road, Suite 101
State College, Pennsylvania 16801-4850

April 11, 2016

Peter Browne
HDR
970 Baxter Boulevard, Suite 301
Portland, ME 04103

RE: USFWS Project #2014-0986; CPA-2014-0005

Dear Mr. Browne:

Thank you for your letter of March 8, 2016, requesting updated information about federally protected species within the area being considered for the proposed ITC Lake Erie Connector, LLC, Lake Erie Connector project (Project) located in Erie County, Pennsylvania. We previously commented on this project in letters dated September 22, 2014, February 11 and April 6, 2015. Since that time, the Project limit of disturbance has been finalized and a Joint Permit Application for Pennsylvania Water Obstruction and Encroachment Permit and U.S. Army Corps of Engineers Rivers and Harbors Act 10 and Clean Water Act 404 Permit was submitted on January 29, 2016. The following comments are provided pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) to ensure the protection of endangered and threatened species, the Migratory Bird Treaty Act (16 U.S.C. 703-712; Ch. 128; July 13, 1918; 40 Stat. 755, as amended), and the Bald and Golden Eagle Protection Act (Eagle Act, 54 Stat. 250, as amended; 16 U.S.C. 668-668d), to ensure the protection of migratory bird species.

Threatened and Endangered Species

Northern long-eared bat

The proposed project is within the range of the threatened northern long-eared bat (*Myotis septentrionalis*). On February 16, 2016, the final rule that tailors protections for the northern long-eared bat under the Endangered Species Act became effective (81 FR 1900; available here: http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/FRnlebFinal4dRule14Jan2016.pdf). Because your project is not located within 0.25 mile of a known northern long-eared bat hibernaculum or within 150 feet from a known, occupied maternity roost tree, any incidental take that might result from tree removal is not prohibited and no further consultation regarding this

species is necessary. More information on the northern long-eared bat and the 4(d) rule can be found here: http://www.fws.gov/midwest/endangered/mammals/nleb/

Indiana bat

The proposed project is within the range of the endangered Indiana bat (*Myotis sodalis*). According to your April 6, 2016, e-mail, approximately 12.4 acres of forest will be cleared for the project. Because the project is not located near known Indiana bat summer or winter habitat and a minimal amount of forest will be cleared, the project is not likely to adversely affect this species.

Assessment of Risks to Migratory Birds and Eagles

In our April 6, 2016, letter, we determined that impacts from the project to bank swallows (*Riparia riparia*) are low enough that no seasonal restriction on project activities is necessary and development of a habitat restoration plan for birds is not warranted based on the following: 1) horizontal directional drilling will be employed to avoid impacts to the bluff, 2) the drill rig will be located approximately 328 feet away from the top of the bluff, and 3) off-shore activities will be approximately 750 feet from the shoreline. The project has been designed to avoid all impacts to the bluff and consequently, nesting bank swallows.

The Bald and Golden Eagle Protection Act (BGEPA) provides for very limited issuance of permits that authorize take of bald eagles (*Haliaeetus leucocephalus*) when such take is associated with otherwise lawful activities, cannot practicably be avoided, and is compatible with the goal of stable or increasing eagle breeding populations. Under BGEPA, "take" means to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb. "Disturb" means to agitate or bother an eagle to a degree that causes, or is likely to cause, injury to an eagle or either a decrease in its productivity or nest abandonment due to interference with breeding, feeding, or sheltering. For more information regarding eagle biology and take, please visit: http://www.fws.gov/northeast/ecologicalservices/eagle.html

Please review our previous comments regarding bald eagles from our September 22, 2014, letter. Additional information, including the bald eagle project screening and online mapping tool, can be found on our website (see: http://www.fws.gov/northeast/pafo/bald_eagle.html). The Service is aware of a bald eagle nest within approximately 2,000 feet from the project. Please review the *National Bald Eagle Management Guidelines* (available here: http://www.fws.gov/northeast/ecologicalservices/eaglenationalguide.html) for recommendations for avoiding disturbance of eagles at foraging areas and communal roost sites. If you would like more information regarding eagle permits, please contact Scott Frickey, Migratory Bird Program, at Scott_Frickey@fws.gov or (413) 253- 8592.

This response relates only to federally protected species under our jurisdiction, based on an office review of the proposed project's location. No field inspection of the project area has been conducted by this office. Consequently, this letter is not to be construed as addressing other potential Service concerns under the Fish and Wildlife Coordination Act or other authorities.

To avoid potential delays in reviewing your project, please use the above-referenced USFWS project tracking number in any future correspondence regarding this project.

Please contact Melinda Turner of my staff at 814-234-4090 if you have any questions or require further assistance.

Sincerely,

Lora L. Zimmerman
Field Office Supervisor

cc:
DOE – Mills

Letter from DCNR dated March 23, 2016

pennsylvania
DEPARTMENT OF CONSERVATION
AND NATURAL RESOURCES

BUREAU OF FORESTRY

March 23, 2016 **PNDI Number: 20140521451998**

Peter Browne
HDR, Inc.
970 Baxter Boulevard, Suite 301
Portland, ME 04103
Email: peter.browne@hdrinc.com (hard copy will not follow)

Re: UPDATE: ITC Lake Erie Connector, LLC / Lake Erie Connector Project
Conneaut, Springfield & Girard Townships, Erie County, PA

Dear Mr. Browne,

Thank you for the submission of the Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Receipt Number 20140521451998 for review. PA Department of Conservation and Natural Resources screened this project for potential impacts to species and resources under DCNR's responsibility, which includes plants, terrestrial invertebrates, natural communities, and geologic features only.

No Impact Anticipated per Survey (with Conservation Measure)

PNDI records indicate species or resources under DCNR's jurisdiction are located in the vicinity of the project. DCNR requested a botanical survey on June 19, 2014. Surveys were conducted by Environmental Solutions & Innovations, Inc. in May and July of 2015. No state-listed species were found on the project site.

An update received by our office on March 11, 2016 identified expansion areas to the proposed limit-of-disturbance. The limit-of-disturbance remains within the previously surveyed area.

Therefore, DCNR has determined that no impact is likely. No further coordination with our agency is needed for this project.

Conservation Measure – Voluntary Action
Two PA Watchlist species were identified within or adjacent to the project area: shellbark hickory (*Carya laciniosa*) and Canada yew (*Taxis canadensis*). These species do not currently receive formal protection but are being closely monitored in Pennsylvania. The Canada yew population and an associated large and healthy American chestnut (*Castanea dentata*) will be avoided. Impacts to shellbark hickory will be minimized where possible.

DCNR recommends the following steps to help prevent the spread of invasive species:

- The area of disturbance should be minimized to the fullest extent that would allow for construction. This will help to lessen the area of soil and vegetation disturbance associated with this project.

- If possible, please clean all construction equipment and vehicles thoroughly (especially the undercarriage and wheels) before they are brought on site. This will remove invasive plant seeds from the equipment and undercarriages of the vehicles that may have been picked up at other sites.

- Avoid using seed mixes that include invasive plant species (e.g. crown vetch) to re-vegetate the area. Please also attempt to use weed-free straw or hay mixes when possible. More information about Pennsylvania invasive plants can be found here: *http://www.dcnr.state.pa.us/conservationscience/invasivespecies/index.htm*

This response represents the most up-to-date review of the PNDI data files and is valid for two (2) years only. If project plans change or more information on listed or proposed species becomes available, our determination may be reconsidered. Should the proposed work continue beyond the period covered by this letter, please resubmit the project to this agency as an "Update" (including an updated PNDI receipt, project narrative and accurate map). As a reminder, this finding applies to potential impacts under DCNR's jurisdiction only. Visit the PNHP website for directions on contacting the Commonwealth's other resource agencies for environmental review.

Should you have any questions or concerns, please contact Jason Ryndock, Ecological Information Specialist, by phone (717-705-2822) or via email (c-jryndock@pa.gov).

Sincerely

Greg Podniesinski, Section Chief
Natural Heritage Section

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Letter from Pennsylvania Fish and Boat Commission dated October 5, 2016

Pennsylvania Fish & Boat Commission
established 1866

Division of Environmental Services
Natural Diversity Section
450 Robinson Lane
Bellefonte, PA 16823
(814) 359-5236

October 5, 2016

Peter Brown
HDR Engineering, Inc.
970 Baxter Boulevard, Suite 301
Portland, ME 04103

RE: Species Impact Review – SIR#43765
Biological Opinion, Threatened and Endangered Species Special Permit
Lake Erie Connector Project
Erie County, Pennsylvania

Dear Mr. Brown:

The Pennsylvania Fish and Boat Commission (PFBC) has reviewed the project plans and biological assessment for the proposed Lake Erie Connector Project. The enclosed document represents the PFBC's biological opinion about the effects of the proposed activity on state listed fish species, and a Special Permit that authorizes incidental take for the Eastern Sand Darter.

Pursuant to the authority under the Fish and Boat Code, 30 Pa.C.S. § § 2102 and 2305, the PFBC hereby grants ITC Lake Erie Connector LLC a Special Permit, as per 58 PA Code 75.4 (1)(iii) to take threatened and endangered species for activities of the Lake Erie Connector Project. This permit authorizes take, which was determined by the enclosed PFBC Biological Opinion to include the state endangered Eastern Sand Darter. The permit conditions outlined in the PFBC Special Permit are mandatory. This Special Permit is valid through the completion of the project, and expires on 31 December 2019. If the in-lake portions of this project are not completed by 31 December 2019, ITC Lake Erie Connector LLC shall reinitiate consultation with the PFBC to re-evaluate project impacts on the state listed species, and to determine the appropriateness of the Special Permit and its conditions contained in the Biological Opinion.

If you have any questions regarding this Biological Opinion and/or Special Permit, please contact me at 814-359-5113.

Sincerely,

Christopher A. Urban, Chief
Natural Diversity Section

cc: Mark Hartle, PFBC
Heather Smiles, PFBC
Dan Ryan, PFBC
PA-DEP, NW Region, Meadville

Enclosure

BIOLOGICAL OPINION

Effects of the Lake Erie Connector Project on the Eastern Sand Darter, Erie County, Pennsylvania

Species Impact Review #43765

May 2016

Pennsylvania Fish and Boat Commission
Division of Environmental Services
450 Robinson Lane
Bellefonte, PA 16823

DESCRIPTION OF THE PROPOSED ACTION

ITC Lake Erie Connector LLC (the Applicant) is proposing to construct and operate the Lake Erie Connector Project (LECP). This project would entail constructing approximately 72.4 miles (116.5 km) of high-voltage direct current (HVDC) electric transmission line that would transfer electricity between Canada and the United States. A detailed description of the proposed construction activities for LECP was provided in a report submitted to the Pennsylvania Fish and Boat Commission (PFBC) and is briefly summarized herein (HDR 2015). Approximately 42.5 miles (68.4 km) of the LECP line is proposed to occur within Erie County, Pennsylvania, United States. In Lake Erie, the cables will be buried in the lakebed to protect against damage from shipping traffic, fishing activity, and ice scour. The shoreline crossings from land to Lake Erie will be completed by horizontal directional drilling (HDD). In Pennsylvania, the HDD will exit the lakebed at approximately 2,000 feet (600 meters) from shore at a water depth of approximately 18 ft (5.4 meters). From the exits of the HDD bores, a trench will be blasted and excavated in the bedrock until softer lakebed material is encountered and jet plow (high pressure water) facilitated burial is possible. The blasting is to occur for approximately 1.4 km and require approximately 130 days.

SPECIES OF CONCERN AND EFFECTS OF THE ACTION

A Species Impact Review (SIR) permit application was submitted to the PFBC through the Pennsylvania Natural Diversity Inventory (PNDI) system for the LECP and the potential presence of fishes listed as endangered in Pennsylvania was identified in SIR43765. These fish species are Lake Sturgeon (*Acipenser fulvescens*), Cisco (*Coregonus artedi*), and Eastern Sand Darter (*Ammocrypta pellucida*).

Potential impacts on the Lake Sturgeon were considered insignificant given the location of the LECP area of operation, the rarity of the Lake Sturgeon, and its use of near shore areas and lotic systems for spawning.

The Cisco is currently considered likely extirpated in Lake Erie, but specimens are occasionally encountered (Coldwater Task Group 2015). The only recent reports from Pennsylvania waters have come from 1986 and 1987. From 1990 to 2014, only 39 specimens were reported from Lake Erie, mostly by commercial fishermen operating in Ontario waters (Coldwater Task Group 2015). At this time, it is unclear if these recent collections represent a Lake Erie remnant stock or strays from Lake Huron. In either case, the rarity or absence of Cisco in the LECP area and the pelagic nature of Cisco, make it highly unlikely that the LECP would significantly affect critical habitat for this species.

The Eastern Sand Darter (ESD) has been observed in the vicinity of the LECP area (HDR 2015, Stauffer et al. 2016, PFBC Lake Erie Research Unit unpublished data) within Pennsylvania. The Eastern Sand Darter is a benthic fish which occupies areas dominated by sand substrate, in which they routinely bury themselves. Survey data collected in Pennsylvania demonstrate the Eastern Sand Darter is present at depths to 29 meters in Lake Erie and in open water during the summer at various depths. This information suggests that spawning may occur at those locations and not strictly in near shore areas; however, this has not been investigated. It appears that the LECP activities will likely encounter Eastern Sand Darter within the construction area. As an initial

SIR response, the PFBC requested that the LECP avoid conducting activities affecting sand substrate in Pennsylvania during the Eastern Sand Darter spawning window of 1 June – 31 August. Construction during these dates was deemed by the Applicant to be essential for the completion of the LECP and the spawning seasonal restriction could not be observed. Consultation with the PFBC was initiated to resolve the conflict and at that approximate time the Applicant subsequently informed the PFBC that blasting was going to be required to bury a portion of the transmission line. The Applicant was asked to develop and present a Biological Assessment characterizing the impacts to the Eastern Sand Darter and estimate the expected take related to the activities of the LECP.

To facilitate the assessment of take of the Eastern Sand Darter within Pennsylvania, the PFBC Lake Erie Research Unit, Fisheries Management Division provided benthic trawl data to the Applicant and their consultant, HDR. These trawl data were the result of PFBC surveys intended to assess percid gamefish recruitment, predominately in the fall and with some data available from summer surveys. A total of 366 trawl samples were considered with 17 trawls having captured Eastern Sand Darters. It is not clear if all of the trawls not having captured Eastern Sand Darters were spatially well distributed or if they occurred in areas with suitable habitat for Eastern Sand Darters. Only the spatial distribution of Eastern Sand Darter capture sites was presented by HDR (2015) within the report figures (Figure 3.1-1, p.15). The capture of Eastern Sand Darters in these trawls was incidental and not the results of targeted searches. From these data, HDR (2015) calculated a long term average density of 0.43 Eastern Sand Darters per hectare and concluded that the PFBC trawl data suggested there was predominantly low recruitment with an occasional stronger year class at approximately 10 year intervals on average. These conclusions were based on the number of trawls conducted that had and had not captured Eastern Sand Darter throughout the percid assessments (N = 366).

A benthic trawl is likely to be more effective at capturing Eastern Sand Darters under certain conditions and representation in the trawls was not necessarily a reflection of abundance in the wild. Eastern Sand Darter are a benthic fish and are known to burrow into sand (Trautman 1981), potentially reducing their recruitment to a trawl when it does not dig into the top layer of sand or when the trawl bounces breaking contact with the bottom. Although the benthic trawl is capable of capturing small benthic fishes, the capture probability for the Eastern Sand Darter, if present, is not likely to be 100% in a benthic trawl. This assertion is contrary to what is implied by HDR.

HDR (2015, p.12) states the following: “Because the present Project will involve blasting in areas where fish occupation will change on a daily and seasonal basis, it is impossible to predict with absolute certainty that no fishes will be impacted detrimentally.” The HDR calculated average Eastern Sand Darter per hectare (0.43) assumes that the available trawl data averaged across years and localities is representative of the Eastern Sand Darter population at the site of the LECP where and when the blasting is to occur. Figure 3.1-1 (HDR 2016) also clearly shows that a portion of the fisheries survey data for the Eastern Sand Darter from trawls has been collected from the vicinity of the LECP. The potential for an abundant year class of Eastern Sand Darters to be present at the site of the LECP and during the construction period were not considered by HDR (2015).

To address these concerns, a more conservative calculation is presented herein to provide an alternative calculation of potential take based on available field data. The average density value

0.43 ESD/hectare, is replaced in the HDR calculations by the density calculated from the most abundant trawl value, 6.69 ESD/hectare (see HDR 2015). A correction factor was not added to address the effect of benthic trawl efficacy for catching Eastern Sand Darters; however, we believe this (6.69 ESD/hectare) is a more realistic representation of the potential population in the project vicinity.

The lethal take evaluation presented by HDR (2015) was focused on areas where blasting will be conducted in conjunction with the sandy habitats preferred by the Eastern Sand Darter and the PFBC agrees with this habitat based approach to assessing impacts. Sand overburden (over shallow bedrock) is present for approximately 578 meters of the project path where blasting is planned. A corresponding area of 7.84 hectares in these sandy areas is estimated to be affected by blasting (HDR 2015). In this area, lethal take of 52 Eastern Sand Darters could be expected (6.69 fish/hectare x 7.84 hectares) using the maximum observed density versus lethal take of 4 Eastern Sand Darter using a long term average density from all of the PFBC trawls and areas (0.43 ESD/hectare x 7.84 hectares)).

Potential impacts from the grapnel run, HDD, jet plow operations, EMF, temperature change, and cable maintenance effects are reported by HDR (2015) to be insignificant in regards to the Eastern Sand Darter. The PFBC is inclined to agree with these assertions in the biological assessment and has not included any estimate of take for these aspects for the Eastern Sand Darter.

CONCLUSION – BIOLOGICAL OPINION

Chapter 75.4 (1) (i) authorizes the PFBC to make determinations regarding the continued existence of a listed threatened and endangered species within Pennsylvania. It is the Biological Opinion of the PFBC, that the proposed project will have no demonstrable adverse impacts on the population of the Eastern Sand Darter within the Commonwealth. This determination is based on the likely severity of species take following an analysis of the project effects. It is our best professional judgment that the proposed project is not likely to jeopardize the continued existence of the species within the Commonwealth. We do anticipate some level of species take; however, we do not expect the level of take to adversely impact the local population of Eastern Sand Darter known from Lake Erie. The PFBC is defining “take” as removing or killing of animals through any means directly or indirectly and in a time frame coincident with (immediate) or delayed following a specific activity.

SPECIAL PERMIT

Amount or Extent of Threatened and Endangered Species Take

This Special Permit allows for the take of 52 Eastern Sand Darter from the area of the LECP during stated project activities. To further avoid and minimize further take associated with the impacts from the proposed development on the Eastern Sand Darter and its habitat, the following mandatory permit conditions shall be implemented. These conditions also include mitigation measures to compensate for take of listed species and conservation measures to ensure the long-term protection of the listed species.

Special Permit Conditions

1. Best management practices to be used:
    a. Erosion and Sedimentation Pollution Control Plan. During the project, the Applicant shall implement an "Erosion and Sedimentation Pollution Control Plan" that shall be implemented as approved by the Pennsylvania Department of Environmental Protection.
    b. Additional impact avoidance techniques for fishes outlined by HDR (2015):
        i. Implementation of confined stemmed bore hole blasting techniques.
        ii. Implementation of appropriate depth of the blast hole collar and charge weight.
        iii. Implementation of appropriate delays between the onset of multiple blasts.
        iv. Implementation of appropriate stemming techniques.
        v. The Project may also use additional impact avoidance techniques such as use of blasting mats, deployment of bubble curtains or measures to mobilize and clear fish from the immediate blast area.

2. Reporting of dead listed species found on the project site: Any dead specimens of listed species (see 58 PA Code Chapter 75) that are found within the project action area shall be clearly photographed and frozen/preserved for PFBC review. In conjunction with the preservation of any dead specimens, the observer has the responsibility to ensure that evidence intrinsic to determining the cause of death of the specimen is not disturbed. The finding of dead specimens does not imply enforcement proceedings pursuant to Section 2305 of the Fish and Boat Code (Act 1980-175, Title 30). The reporting of dead specimens is required within 24 hours to enable the PFBC to determine if species take is reached or exceeded and to ensure that the permit conditions are appropriate and effective. Upon locating a dead specimen, the Applicant or its representatives must notify the Pennsylvania Fish and Boat Commission's Division of Environmental Services, 814-359-5237.

3. Mitigation/restitution for take of the Eastern Sand Darter:
    a. The Applicant has agreed to render the replacement value of the estimated take of Eastern Sand Darters. The replacement value of the Eastern Sand Darter was assessed using best available information and the guidance outlined by the "fish kill manual" of the American Fisheries Society (Southwick and Loftus 2003). After discussion with aquaculturists experienced in raising *Ammocrypta* spp., it was determined that the replacement cost for an Eastern Sand Darter would be approximately $100 per individual. The total replacement value [mitigation] would then be $5,200 (52 ESD x $100 /ESD) for the estimated impacts of the LECP.
    b. Mitigation for Eastern Sand Darters will be included with the PFBC Division of Environmental Services blasting permit assessment. Under Section 2906 of the Fish and Boat Code (Act 1980-175, Title 30), any person using explosives shall make restitution to the Pennsylvania Fish and Boat Commission for all fish destroyed when using explosives. The SIR permit and Biological Opinion is not meant to address concerns for any other populations of fish.

Literature Cited

Coldwater Task Group. 2015. Report of the Lake Erie Coldwater Task Group, March 2015. Presented to the Standing Technical Committee, Lake Erie Committee of the Great Lakes Fishery Commission. Ann Arbor, Michigan, USA.

HDR Engineering, Inc. 2015. Lake Erie Connector Project, Biological Assessment, Eastern Sand Darter. Report prepared for ITC Lake Erie Connector LLC, Novi, Michigan.

Southwick, R. I., and A. J. Loftus, editors. 2003. Investigation and monetary values of fish and freshwater mussel kills. American Fisheries Society, Special Publication 30, Bethesda, Maryland.

Trautman, M. B. 1981. The fishes of Ohio, revised edition. Ohio State University Press, Columbus.

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Attachment 2

PFBC Blasting Permit Application

September 27, 2016

Ms. Heather Smiles
Pennsylvania Fish and Boat Commission
Environmental Services Division
450 Robinson Lane
Bellefonte, PA 16823

RE: Pennsylvania Fish and Boat Commission: Application for Permit for Use of Explosives in Commonwealth Waters, 30 PA. C.S. § 2906

Ms. Smiles:

ITC Lake Erie Connector LLC is requesting your review of the Pennsylvania Fish and Boat Commission (PFBC) Application for Permit for Use of Explosives in Commonwealth Waters, 30 PA. C.S. § 2906 (Blasting Permit).

ITC Lake Erie Connector LLC is proposing to construct and operate the Lake Erie Connector Project, an approximately 72.4 mile (116.5 km) 1,000 megawatt (MW) +/-320 kilovolt (kV) high-voltage direct current (HVDC) bi-directional electric transmission interconnection to transfer electricity between Canada and the United States. Within Lake Erie the interconnection consists of two six-inch diameter submarine cables and a fiber optic cable, all buried in the lakebed. In most areas the cables will be bundled together and buried in the lakebed by a jet plow to protect the cables from damage due to shipping traffic, fishing activity, and ice scour. Typical burial depths in jettable material range from three to 10 ft (one to three m). At the cable landing in Springfield Township in Erie County, Pennsylvania, the lake bottom bedrock is either exposed or very close to the surface, preventing cable burial via jet plow. Due to these geological constraints, underwater confined stemmed blasting in the bedrock (primarily shale) will be conducted along approximately one mile (1.6 km) of the cable route beginning approximately 2,000 ft [609.6 m] from the shoreline to softer lake bed material suitable for jet plow burial. Confined stemmed blasting will also be conducted at the horizontal directional drilling (HDD) exit pits, also located approximately 2,000 ft [609.6 m] from the shoreline.

ITC Lake Erie Connector LLC appreciates your consideration of this permit application. Please feel free to contact Peter Browne with HDR at 207-239-3863 or Peter.Browne@hdrinc.com, or me should you have any questions or require additional information.

Sincerely,

Andrew M. Jamieson, Counsel
ITC Lake Erie Connector LLC

Attachments:

Application for Permit for Use of Explosives in Commonwealth Waters, including additional sheets containing requested information

cc: Karl Gross, PADEP
Nancy Mullen, USACE
R. Timothy Weston, K&L Gates LLP
Peter Browne, HDR

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA FISH & BOAT COMMISSION
Application for Permit for Use of Explosives in Commonwealth Waters
30 PA. C.S. § 2906

1. Purpose: A permit is required from the Fish and Boat Commission for use of explosives in Commonwealth waters for engineering purposes. Applicants: Complete this form in its entirety. Additional instruction and information are on the back of this form. Do not go forward with the project unless and until the Commission issues a permit. Include a check or money order (no cash) in the amount of **$50.00 for each perennial waterway** that is proposed to be impacted. Mail your application and remittance (payable to the Pennsylvania Fish and Boat Commission) to Pennsylvania Fish and Boat Commission, Environmental Services Division, 450 Robinson Lane, Bellefonte, PA 16823. Attach additional sheets as necessary. If the permit is denied, the fee will be returned to you.
2. Name of Applicant: ITC Lake Erie Connector LLC; Andrew Jamieson, Counsel
3. Address of Applicant: 27175 Energy Way, Novi, Michigan 48377
4. Phone: 248-946-3000
5. Dates of proposed blasting: See Item 5, attached.
6. Name of project: Lake Erie Connector Project
7. Location of proposed use of explosives: Attach an 8 ½" x 11" photocopy of a topographic map to show the location of waterway(s) to be impacted. This map can be printed from a site on the internet such as http://itouchmap.com or http://www.topoquest.com or a photocopy of a 7.5 minute USGS topographical quadrangle. The body of water should be clearly marked with a circle at the location of each project site. See Item 7, attached.
8. Waterway information: attach a table that lists the waterway name(s), county, township, geographic coordinates of the project site, and the Chapter 93 Water Use Protected Classification. Water Use Protection Classification are identified in the Department of Environmental Protection's Chapter 93 regulations, which may be accessed at: See Item 8, attached.
   http://www.pacode.com/secure/data/025/chapter93/chap93toc.html
9. Describe the overall project of which the proposed use of explosives is a part: See Item 9, attached.
10. Describe in detail your proposed use of explosives: See Item 10, attached.
11. List all other permits received and the permitting agency: See Item 11, attached.
12. Describe the immediate (short-term) effects you anticipate from the proposed use of explosives. Include a description of the effects on fish and aquatic life in the waters, fish habitat, the stream bed, waterways, waters, and watershed and the effects on boating: See Item 12, attached.

The undersigned applicant, under penalty of the law, hereby certifies the above information is true and correct to the best of his/her knowledge and belief:

Date: 9/27/16 Signature of Applicant: [signature]

Instructions

1. Complete all information requested on the front of this form. Attach additional sheets as necessary. Incomplete applications will be returned without action. Send the complete form together with the fee of **$50.00 for each perennial waterway** that is proposed to be impacted to the Fish and Boat Commission, Environmental Services Division, 450 Robinson Lane, Bellefonte, PA 16823.
2. Applicants who are granted permits are required by law to make restitution to the Commission for all fish destroyed.
3. The Pennsylvania Fish and Boat Commission staff reviews all aspects of the use of explosives. A permit may be granted by the Executive Director, or his designee, upon a finding by the staff that the activity will have no significant adverse impacts on the fishery resources in, or boating on, the waters where the activity is to take place. The permit is valid for one (1) year following the granted date.
4. If, after review of the application, the staff concludes that there is a substantial likelihood that the proposed activity will have significant adverse impacts on fishery resources and/or boating, the Executive Director, or his designee, will cause a notice of the permit application to be published in the Pennsylvania Bulletin to invite public comments, protests, or intervention responses.
5. Appeal to Commission. Any party, including the applicant, who is aggrieved by a decision of the Executive Director to grant or deny a permit under Section 2906 of the Code, may appeal the decision to the full Pennsylvania Fish and Boat Commission. Appeals must conform to 1 Pa. Code § 35.20. The Executive Director may stay a permit upon filing of an appeal. Appeals shall be disposed of in accordance with the General Rules of Administrative Practice and Procedure, as amended or supplemented by Commission rules.

It is a misdemeanor to alter or disturb any stream bed, fish habitat, water or watershed in any manner that might cause damage to, or loss of, fish or other aquatic life without the necessary permits. It is a misdemeanor to place any explosives in any waters within or on the boundaries of Pennsylvania without a permit. It is a misdemeanor to engage in activity for which a permit is required under 30 Pa.C.S. § 2906 without first acquiring the necessary permit. The law provides severe criminal penalties to persons who use explosives in Pennsylvania waters without the required permits.

ACTION ON APPLICATION

_____(Applicant) is hereby (GRANTED) (DENIED) a permit to use explosives in Commonwealth waters as described on the front of this form. If granted, the permit will be effective until_____.

The following additional terms and conditions apply to the permit:

Date:_____ Executive Director or Designee: _____

Application for Permit for Use of Explosives in Commonwealth Waters

Attached Information

5: Dates of Proposed Blasting

The cable installation in U.S. waters would occur over a 2.5 year period, and the horizontal directional drill (HDD) and proposed blasting activities would be conducted between May and November of the first and second years (2018 and 2019), based on the current Project development schedule. Assuming blasting shots would occur on consecutive days, blasting work in U.S. waters would require approximately 130 days to complete. Depending on weather and coordination with the Canadian portion of the work, some blasting activities and rock excavation may be delayed into 2019.

7: Location of Proposed Use of Explosives

Please see Figure 1 for the location of the overall Project. Blasting would occur within the corridor shown on Figure 2, from 42° 1' 44.5548"N, 80° 24' 33.3606"W to 42° 0' 59.5692"N, -80° 24' 16.9122"W.

8: Waterway Information

Blasting would be limited to the nearshore waters of Lake Erie in Springfield Township, Erie County, Pennsylvania, as shown on Figure 2. All sections of Lake Erie in Pennsylvania except Outer Erie Harbor and Presque Isle Bay are designated for Cold Water Fishes (CWF) (25 Pa. Code §93.9). The Pennsylvania portion of Lake Erie is currently listed as impaired for fish consumption due to PCB and mercury contamination (PADEP 2016).

9: Describe Overall Project of Which the Proposed Explosive is a part of

The Applicant is proposing to construct and operate the Lake Erie Connector Project, an approximately 72.4-mile (116.5 km), 1,000- MW, +/-320-kilovolt kV, high-voltage direct current (HVDC), bi-directional electric transmission line to transfer electricity between Canada and the U.S. For purposes of permits being issued in the U.S., the Project consists of an approximately 42.5-mile (68.4 km) HVDC transmission line that would be buried in the lakebed of Lake Erie from the U.S. - Canada border and be installed underground in Pennsylvania to a new converter station, called the Erie Converter Station, as well as 2,082 ft (635 m) of underground 345-kV alternating current (AC) cable between the Erie Converter Station and the nearby existing Penelec Erie West Substation. The converter station will include equipment to change the AC of the existing aboveground transmission network to the direct current (DC) transmitted by the proposed Project, and vice versa. HVDC technology is used for the Project because it has many advantages over AC technology for long-distance power transmission. These advantages include the ability to control power flow and lower transmission losses.

The HVDC transmission line consists of two transmission cables, one positively charged and the other negatively charged, along with a fiber optic cable for communications, between the converter stations located in Ontario, Canada, and Erie County, Pennsylvania. The majority of the on-land U.S. cable route uses existing roadway right-of-way (ROWs) to minimize impacts and additional land disturbance. The cable system will be buried on land using conventional open trenching methods, with trenchless techniques used in situations where conventional trenching is less appropriate because of the potential for adverse environmental impacts or other constraints.

The two HVDC transmission cables and the fiber optic cable would transition from the landfall location into Lake Erie via separate borings through bedrock installed by HDD methods. The HDD bores will exit the lake in Pennsylvania approximately 2,000 ft (600 meters) from shore, at a water depth of approximately 18 ft (5.4 meters). It is expected that the distance between bores at the exit will be approximately 33 ft (10 m). Three short trenches will be excavated in the bedrock (primarily shale) from the exit of each of the three HDD bores at approximately kilometer post (KP) 103.4. The three trenches will merge into one trench, which will continue through the bedrock to the softer lakebed material where the sediment overlay is deep enough that burial by jet plow or water jetting can be utilized (approximately KP 102). For the remainder of the cable route to the U.S. - Canada border at approximately KP 47, the cables will be bundled and buried in the lakebed by a jet plow.

10: Describe in Detail the Proposed Use of Explosives

Underwater confined stemmed blasting in the primarily shale bedrock will be conducted for approximately one mile (1.6 km) at the HDD exit pits and the bedrock trench areas discussed above. Blasting will be conducted using 4-inch (10-cm) diameter blast holes drilled to a depth of 4 ft (1.2 m) below the planned excavation grade below the lakebed. Blast holes will be spaced 5 to 8 feet apart in an alternating pattern over a trench length of 30 to 40 ft (9 to 12 m) (Figures 3 and 4). The holes will be packed with low-level Hydromite emulsion explosive, stemmed, covered with blasting mats, and detonated (Figure 5). Approximately 20 to 30 stemmed charges will be detonated per shot. The estimated charge weight per hole is 14 pounds (6.35 kg) with a charge delay of 25 msec. One shot would occur per day. This pattern would yield an approximate daily advance rate of 40 to 50 ft per day (12 to 15 m per day).

Additional blasting will use similarly spaced holes and charges at the HDD exit pits, including one pit for each of the two HVDC cables and one pit for the fiber optic cable. Each of the three HDD exit pits will be approximately 20 x 10 x 7 feet (6.1 x 3.1 x 2.1 meters).

The blasted rock will be removed by a barge-mounted excavator and side cast on the lake bottom. As part of that process, two artificial reef structures will be installed using excavated rock as available from the three HDD exit pits, as described at the end of Item 12 and shown in Figure 6.

The trench will be bedded and backfilled with a sand and gravel mixture (originating from an on-land source). Assuming blasting shots would occur on consecutive days, blasting work in U.S. waters would require approximately 130 days to complete. However, as noted above, depending on weather and coordination with the Canadian portion of the work, some blasting activities and rock excavation may be delayed into 2019.

11: List All Other Permits Received and the Permitting Agency

Table 1 indicates the permits or approvals that the Applicant expects to be obtained for the U.S. portion of the Project. Please note that these permits are for the Project in its entirety, not just the portions for which blasting will occur.

Table 1. U.S. Permits and Approvals Required for the Lake Erie Connector Project (Permits or Approvals Received Indicated with Approval/Issuance Date in Parenthesis)

U.S. Permit or Approval	Applicable Agency or Reviewer
U.S. Rivers and Harbors Act § 10, Federal Clean Water Act § 404 Permit	United States Army Corps of Engineers (USACE)
PA Dam Safety and Encroachment Act, Chapter 105 *Submitted via Joint Permit Application Process*	Pennsylvania Department of Environmental Protection (PADEP)
Presidential Permit	U.S. Department of Energy
Federal Clean Water Act §401 Water Quality Certification (received 6/13/16)	PADEP
Cultural Resources survey review and approval in accordance with Section 106 of the National Historic Preservation Act	Pennsylvania Historical Museum Commission (PHMC)
PNDI/Natural Resources Review (All reviews completed except for PFBC)	United States Fish and Wildlife Service (USFWS,) Pennsylvania Game Commission (PGC), Pennsylvania Fish and Boat Commission (PFBC), Pennsylvania Department of Conservation and Natural Resources (PA DCNR).
Sewage Facilities Permit for Converter Station	Conneaut Township Sewage Enforcement Officer
Land Development Plan (Preliminary land development plan approved on 5/19/16)	Erie County Planning Department
Road Use Agreement (Springfield – approved 7/5/16)	Girard Township and Springfield Township
Zoning (Approved 5/2/16 and 8/4/16)	Girard Township and Springfield Township
Bluff Recession Setback Variance (Approved 8/4/16)	Springfield Township
Building Permits for Structures	Conneaut Township
Occupancy Permit for Buildings and Structures	Conneaut Township
Residual Waste Form Approval	PADEP
Coastal Zone Management Consistency Determination (Consistency determination – 9/8/16)	PADEP, Coastal Resources Management Program
Submerged Lands License Agreement - (issued 8/18/16)	PADEP
National Pollution Discharge Elimination System (NPDES) Permit for stormwater associated with construction activities	PADEP, Erie County Conservation District
Erosion and Sedimentation Control Plan Approval	Erie County Conservation District
Stormwater Management Plan (approved on 5/5/16)	Conneaut Township
Spill Prevention, Control, and Countermeasures Plan/ Preparedness, Prevention, and	Erie County Conservation District

U.S. Permit or Approval	Applicable Agency or Reviewer
Contingency Plan	
Public Utilities Commission Approval for Railroad Right of Way Crossing	Pennsylvania Public Utilities Commission (PUC)
State Highway Occupancy Permit for Utility Construction	Pennsylvania Department of Transportation (PennDOT)
State Highway Occupancy Permit for Driveway Construction	PennDOT
State Highway Permits for Oversize and Overweight Loads and Vehicles	PennDOT
State Highway Permits to Use Highways Posted Due to Weight, Traffic, or Bridge Condition	PennDOT
State Building Code Building Permit	PA Department of Labor and Industry
Building Energy Conservation Standards	PA Department of Labor and Industry
Local Road Driveway Access Permit	Girard Township, Springfield Township
Local Overweight Vehicle Permits	Conneaut Township, Girard Township, Springfield Township and Erie County
Fire Department/Emergency Management Coordination	Conneaut Township, Girard Township, Springfield Township and Erie County Emergency Management
Storage Tank Registration	PADEP
Other Hazardous Waste Handling Requirements	PADEP
Air Quality Plan Approval or General Permit coverage for emergency generator at converter station	PADEP
Blasting Permit	PFBC
Blasting Activity Permit	PADEP
Incidental Take Permit – for Eastern Sand Darter	PFBC

12: Describe the Immediate (short-term) Effects from Proposed Use of Explosives

The effects from the proposed use of explosives, specifically of blasting on fish and aquatic habitat, were evaluated and included in the Joint Permit Application (JPA)[1] submitted to the Pennsylvania Department of Environmental Protection on January 29, 2016. This evaluation includes a review of existing studies and research, which is not included here, but the analysis of the potential effects is summarized below.

Blasting can cause fish mortality, physical injury, auditory tissue damage, permanent and temporary threshold shifts (TTS), behavioral changes, and decreased egg and larvae viability (Hastings and Popper 2005). The duration of temporary hearing loss varies depending on the

[1] Joint Application for Pennsylvania Water Obstructions and Encroachment Permit and U.S. Army Corps of Engineers, Rivers & Harbors Act §10 and Clean Water Act §404 Permits. The Blasting Analysis was Appendix I of the Environmental Assessment, which was Attachment 3 of the JPA.

nature of the stimulus, but, by definition, there is generally recovery of full hearing over time (Popper and Hastings 2009).

The potential for blasting impacts was assessed by estimating the extent and duration of the sound pressure level and shock wave associated with the proposed blasting, and comparing these estimates to published guidelines and effects thresholds for fish species that have published criteria. Setback distances specify the distance from the explosive source at which overpressure and particle velocity levels fall below thresholds at which detrimental impacts on free swimming fishes (overpressure) or fish eggs (particle velocity) are anticipated to occur (Kolden and Aimone-Martin 2013). An estimate of the setback distance for confined explosives was employed to determine the area of effect using published critical values of both overpressure and peak particle velocity (Table 2).

Table 2. Confined Explosive Guideline Criterion

Criteria	
Overpressure	7.3 psi
Peak Particle Velocity	2.0 in / s

Source: Timothy 2013

The resulting setback distance using the proposed charge weights and guidelines outlined in the blasting impact analysis for this Project are shown in Table 3.

Table 3. Setback distance for guideline criteria.

Criteria	Setback Distance
Overpressure (fish)	63.3 ft
Peak Particle Velocity (eggs)	53.1 ft

Source: Timothy 2013

Based on the review of existing literature and studies discussed above, the assumptions used to calculate the setback distance for peak particle velocity and pressure for this Project are conservative. Applying this approach to estimating potential impacts on fish takes into consideration the fact that high risk of lethal or permanent injury would be confined to the immediate vicinity of the explosion where compressive forces of the shock wave predominate. Injuries at greater distances are generally caused by negative pressures associated with overshoot of the gas bubble formed by the explosion and reflection of the shock wave from the water's surface (Popper et al. 2014). The 229 to 234 dB re 1 microPascal threshold for mortality recommended by Popper et al. (2014) corresponds to 40 to 70 psi or 276 to 482 kPa. Thus, the overpressure criteria (7.3 psi and 100 kPa) are very conservative. The potential for lethal impacts to fish would be expected to occur in a small footprint (less than 63.3 ft [19.2 m] from the blast location) surrounding an individual blast.

A single blast per 24 hour period would not be expected to induce strong avoidance responses. Following startle responses, which might last only for seconds to minutes, fishes would return to the general vicinity of the blast. Blasting events will not be long in duration with repeated exposures sustained over periods as long as hours to days. Repetitive detonations over relatively short periods of time, which will not occur for this project, would have a greater risk of TTS and behavior responses. However, for this project we do not expect this to be the case and anticipate a lower likelihood of physiological impact or prolonged behavioral response due to the mitigations incorporated into the blasting plan (e.g., stemmed charges, single blasts per day).

Peak pressures and particle velocities decrease with distance from the detonation and therefore potential impacts are reduced as well, especially when considering the stemming methods

proposed and described above. The preferred technique of stemming charges has been demonstrated to reduce pressures and lower aquatic organism mortality than the same explosive charge weight detonated in open water (Hempen et al. 2007, Nedwell and Thandavamorthy 1992). The reduced impacts of stemmed charge/subterranean explosions versus mid-water explosions were illustrated by Traxler et al. (1992), who reported no mortalities or observable injuries among largemouth bass, bluegills, and channel catfish held in cages placed directly above and at distances between 25 and 300 ft (7.6 and 91.4 m) from shot holes containing 9.9 and 19.8 pounds (4.5 and 9.1 kg) of dynamite. Their experiments were conducted in a freshwater reservoir in Texas.

A number of commercially, recreationally, or ecologically important fish species spawn in shallow Lake Erie habitats in spring and early summer. For example, yellow perch, white bass, walleye, alewives, rainbow smelt and spottail shiner all spawn over sandy, gravel, or rocky substrates in March through April and into May (Daiber 1953, Bodola 1966, Leach and Nepszy 1976, Madenjian et al. 1996, Roseman et al. 1996). In addition, lake sturgeon, which is provided protected status, spawns primarily in tributaries but potentially also over gravel shoals and rocky shorelines in April through early June when water temperatures are between 55 ^{o}F and 64^{o}F (GLIMDS 2015, Dick et al. 2006, Scott and Crossman 1998). Other species spawn during warmer months, including brown bullhead, channel catfish, pumpkinseed, and gizzard shad. Eastern sand darters spawn during June and July (Criswell 2013). In a letter dated August 2016, commenting on the JPA, PFBC noted concern about blasting and trenching effects on "... potential fish spawning habitats (generally, waters < 20 feet deep) during spawning timeframes of major Lake Erie gamefishes such as yellow perch, smallmouth bass and walleye (generally, April through July)." Although the required duration of blasting (130 days from May through November) precludes avoiding all potential conflicts with fish spawning seasons, the use of explosives from July through November will avoid the peak spawning periods of a majority of species. In addition, blasting will only occur in depths of 18 feet or deeper with approximately 89 percent of blasting occurring in depths greater than 20 feet; consequently, only a small percentage of the blasting will occur in waters within the depth of concern for spawning fish.

As the effects criteria also apply to fish habitat, there will be direct impacts to benthic habitats at the blast zone. However, following cable installation, that area is expected to recolonize from recruitment from nearby, unaffected areas of the lake. Recovery for benthic communities varies, ranging from several months to several years, depending on the type of community and type of disturbance (U.S. Department of Energy [DOE] 2013). Depth contours will be returned to pre-existing conditions by filling the trench with upland-derived material.

Coarse material excavated from the bedrock trenches will be side-cast, and two artificial reefs will be created from rock excavated from the three HDD exit pits. The two rock reef structures will be located just north of the Lake Erie HDD exit pits. Each rock reef would be approximately 38 ft x 12 ft and 4 ft in height and would serve as new long term aquatic and fish habitat features within the lake bed. Figure 6 shows the Applicant's proposed plan for the location of these reefs within the lake bed. In the long-term, the side cast rock and two artificial reefs will provide relief and habitat structure that could offset any temporary disruption to nearshore habitats.

The proposed blasting plan was developed using confined stemmed charges and use of blasting mats as best management practices (BMPs) to reduce potential impacts to spawning and early life stages of fish species, as well as implementing delays of one day between blasts. The use of a confined stemmed bore hole blasting technique rather than blasting in open water or at the surface effectively reduces blast forces transmitted through the water column horizontally. Implementing delays between the onset of multiple blasts by installing blasting caps was found to mitigate effects as long as the delay duration exceeded 25 msec, and preferably 50 msec

(Baker 2008, Wright and Hopky 1998). In addition, the drill barge and other vessels working in the area may temporarily disperse fishes, such that fish may avoid the work area and fish occurrence close to the daily blast sites may be reduced.

The Project may use additional impact avoidance techniques such as artificial noise generation to repel fish from the area immediately prior to each blast. Noise may be generated using compressed air discharged into the water column or, as the trench alignment occurs in not particularly deep water, could be created mechanically by operating noisy vibratory equipment (e.g., motorized compactor) on the deck of a nearby tending vessel. Alternatively, operation of a small boat over the blast area immediately prior to blasting could temporarily disperse fish from the area. Based on our assessment, use of a bubble curtain is not warranted. Because the present Project will involve blasting in areas where fish occupation will change on a daily and seasonal basis, it is impossible to predict with absolute certainty that no fishes will be impacted detrimentally. However, existing guidelines and studies heavily suggest that potentially detrimental impacts will be limited to within the calculated setback distance of 63.3 ft or less.

Conclusion - The confined and stemmed blasting method was selected to minimize potential impacts. Stemming charges will result in substantially reduced peak pressures and lower aquatic organism mortality rates than comparable open water detonations (Hempen et al. 2007, Nedwell and Thandavamoorthy 1992). It is expected that the potential for negative impacts on fishes and fish habitat can be minimized during blasting by implementing the proposed existing BMPs (e.g., using confined stem charges, blasting mats, and delays of one day between blasts). Fish are also likely to avoid each daily work area due to localized activities prior to each daily blast. Lastly, only about 11 percent of the blasting will occur in waters 20 ft or less in depth, which minimizes the effects to spawning habitat depths identified by PFBC.

Most impacts from noise would be either temporary or intermittent and it is expected that only a few individuals would be affected relative to the broadly dispersed stocks of any given species in Lake Erie. Of those species in the Project area, many individuals would be expected to react by moving away from noise sources. The amount of explosives used will be limited to the extent possible to avoid noise and vibration impacts on fishes.

It is anticipated that potential impacts to the fish community from blasting during construction will be temporary and do not pose a substantive risk to fish populations within the Project area due to their very limited spatial extent. Side casting of blast rock and the creation of two rock reefs will enhance local aquatic and fish habitat after construction is completed.

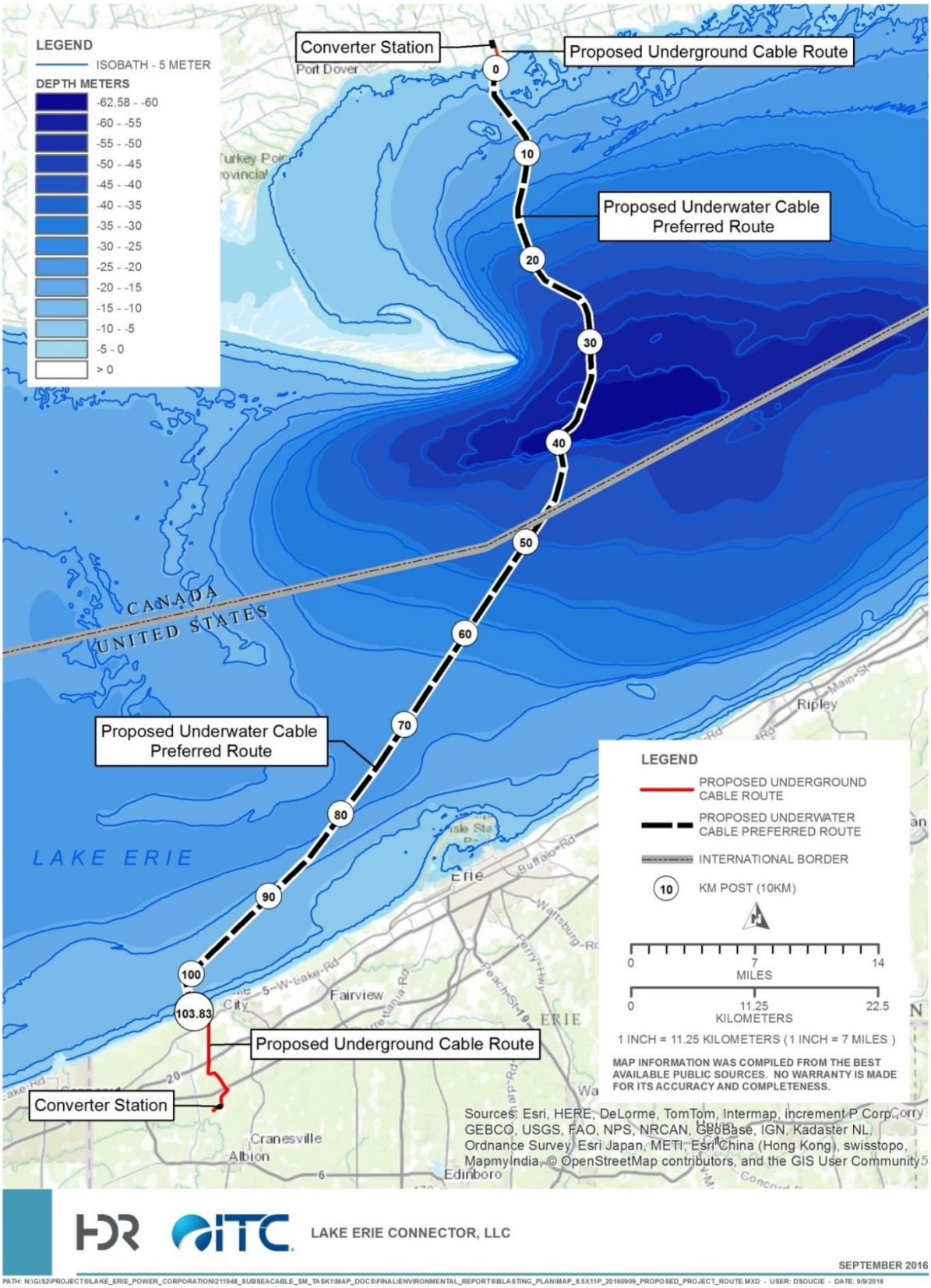


Figure 1. Proposed Project Route, Lake Erie Connector Project.

Figure 2. Location of Proposed Blasting, Lake Erie Connector Project.

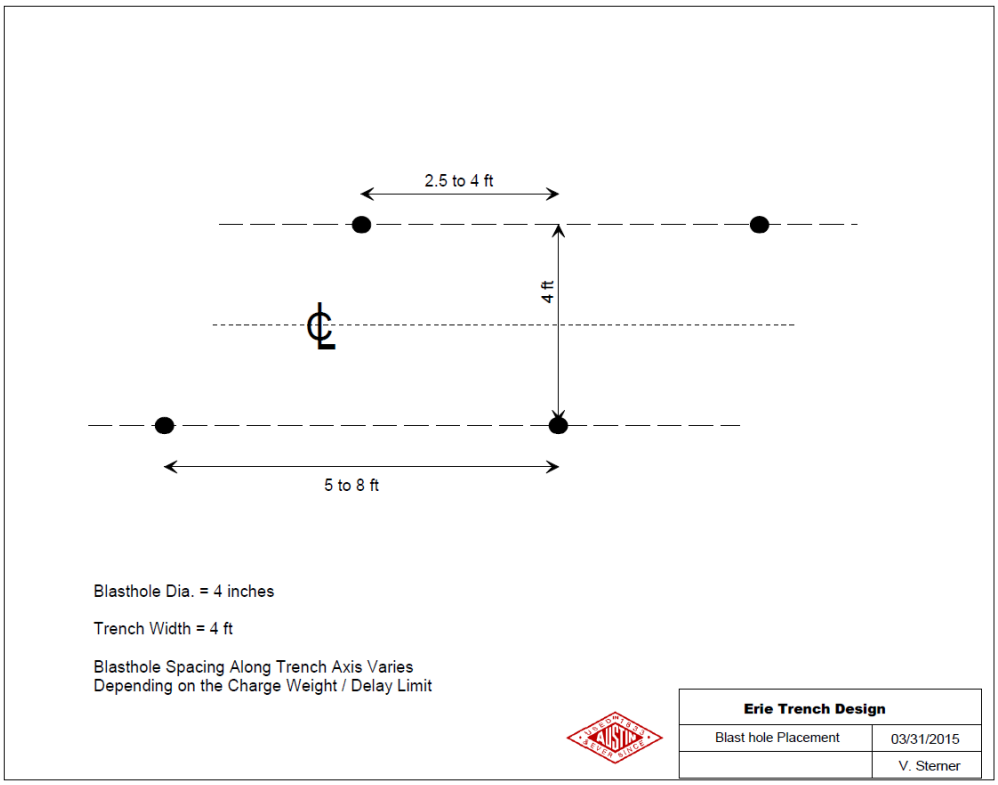
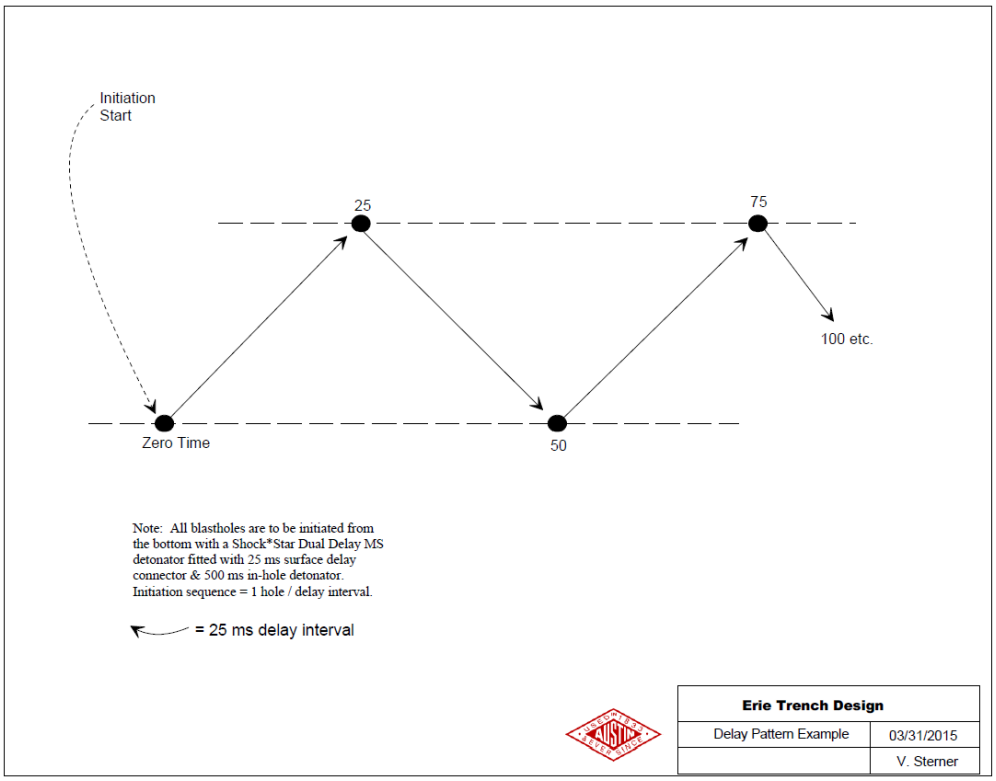


Figure 3. Trench Drill Pattern.



Note: the approximate trench depth will be 6 ft and the width will be approximately 4 ft.

Figure 4. Proposed Blasting Spacing and Delay Pattern.

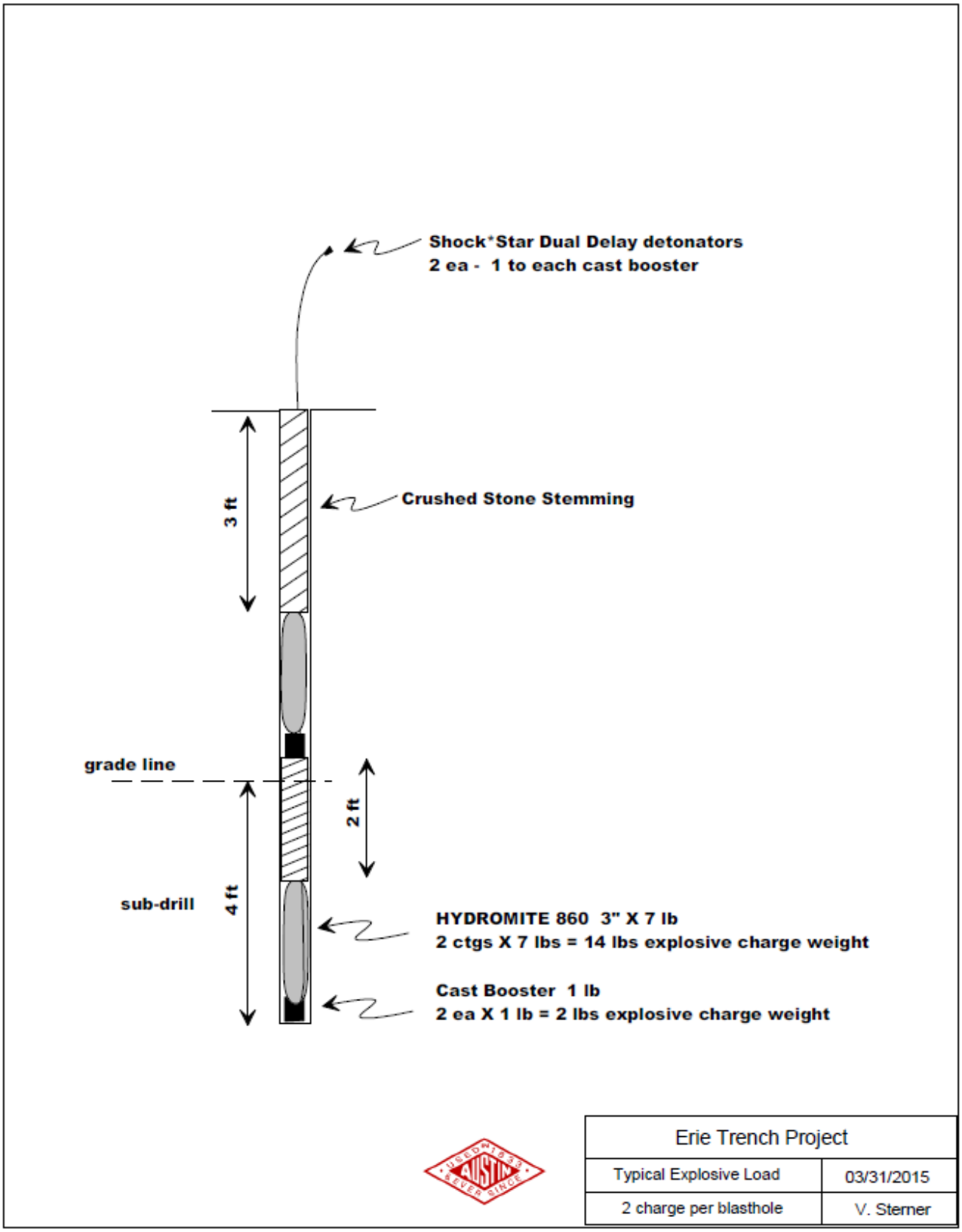


Figure 5. Typical Explosive Load.

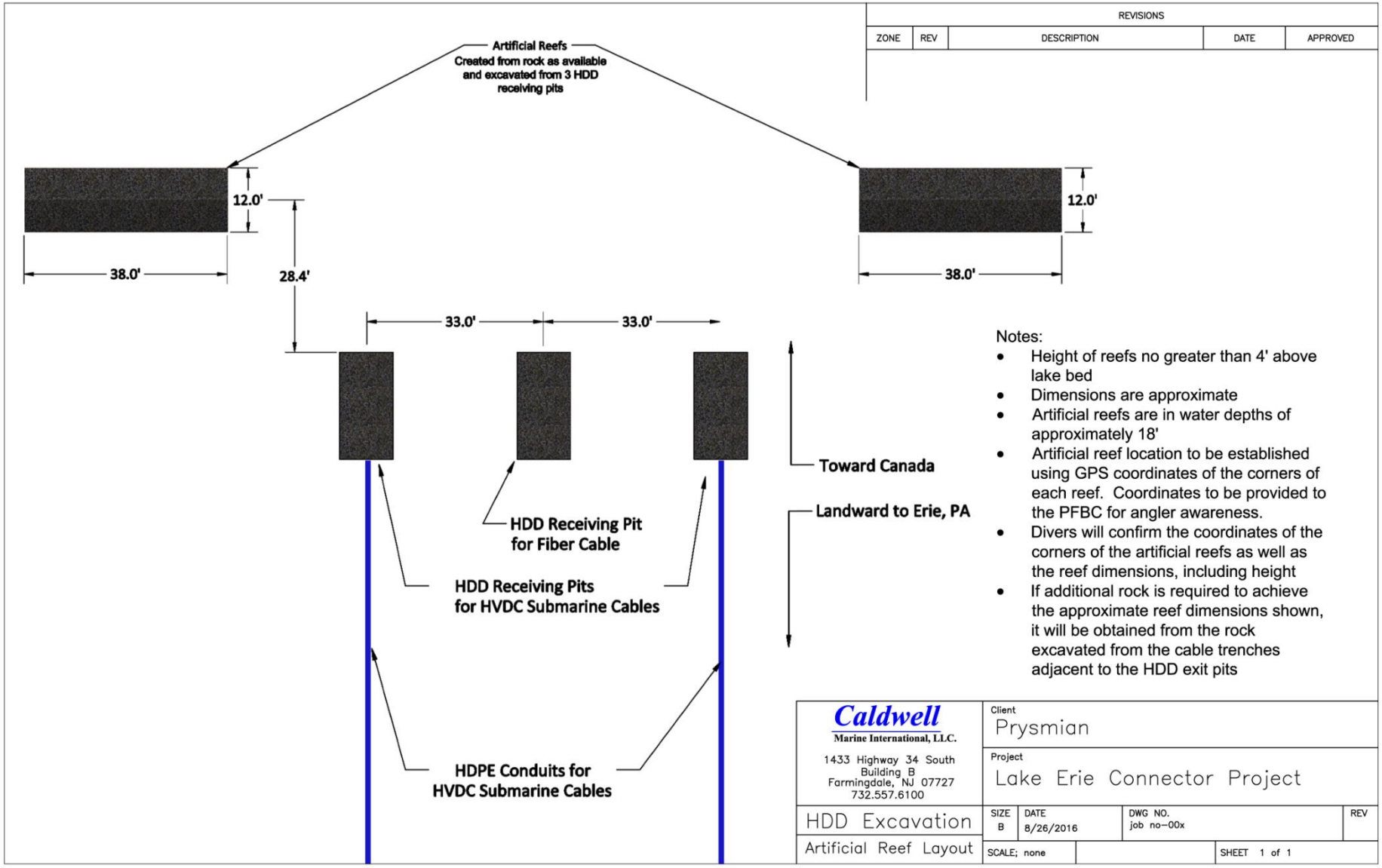


Figure 6. Conceptual Plan for Artificial Reefs.

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Attachment 3

PFBC Comments on the Joint Permit Application

Dams/Forms/F&B - Form (02/12/08)

SUBJECT: **ITC Lake Erie Connector LLC**
Erie County
Conneaut, Township of; Girard, Township of; Springfield, Township of

TO: Pennsylvania Fish and Boat Commission-(DES)
450 Robinson Lane
Bellefonte, PA 16823

FROM: **(check one)**

[X] **NWRO** [ ] **SWRO** [ ] **NERO** [ ] **Central Office**
[ ] **NCRO** [ ] **SCRO** [ ] **SERO**

Date Received By PFBC: 3/30/2016

Permit No.: E25-778

Permit Type: Encroachment

Contact Information:

DEP-Reviewing Biologist: Scott Dudzic

PFBC Reviewer: Dan Ryan

Project Description

Type of work: For purposes of permits being issued in the US, the project consists of an approximately 42.5 mile, 1000 MW, 320 kV, HVDC, bi-directional electric transmission interconnection to transfer electricity from the US-Canada border, as well as approximately 2082 ft of underground, 345 kV, AC cable between the proposed Erie Converter Station and the nearby existing Penelec Erie West Substation.

NOTE: **Please review the attached application for a Water Obstruction and Encroachment Permit for the project described above, and return comments to this office within 30 days.**

Project Location/PFBC Stream Management:

Latitude	Longitude	Primary Water	Receiving Water	Stocked	Wild
42.005728	-80.398252	Wetland		No	No
42.006636	-80.399172	Wetland		No	No
42.006696	-80.399325	Wetland		No	No
41.996059	-80.387947	Wetland		No	No
41.935161	-80.381237	Wetland		No	No
41.978317	-80.388102	Wetland		No	No
41.983634	-80.388010	Wetland		No	No
41.964316	-80.388180	Wetland		No	No
41.935548	-80.379430	Wetland		No	No
41.934862	-80.382212	Wetland		No	No
41.935569	-80.381462	Wetland		No	No
42.009562	-80.401573	UNT to Lake Erie	Lake Erie	No	No
42.005671	-80.393451	UNT to Lake Erie	Lake Erie	No	No
42.006038	-80.387853	UNT to Lake Erie	Lake Erie	No	No
41.998203	-80.387853	UNT to Lake Erie	Lake Erie	No	No
41.996563	-80.387889	UNT to Lake Erie	Lake Erie	No	No
41.942158	-80.374690	UNT to Crooked Creek (RM 8.56)	Crooked Creek	No	No

41.944013	-80.374683	UNT to Crooked Creek (RM 8.56)	Crooked Creek	No	No
41.973008	-80.387497	Crooked Creek	Lake Erie	Yes	No
41.978391	-80.388200	UNT to Crooked Creek (RM 3.42)	Crooked Creek	No	No
41.983679	-80.388112	UNT to Crooked Creek (RM 3.42)	Crooked Creek	No	No
42.411982	-80.032804	Lake Erie		No	No
42.013548	-80.403534	Lake Erie		No	No

Specific Project Comments:

The Pennsylvania Fish and Boat Commission (PFBC) manages Crooked Creek as a stocked trout fishery in the vicinity of the proposed project and recommends an instream construction restriction from March 1 to June 15 to protect stocked trout angling. In addition, the PFBC manages Crooked Creek as migratory steelhead fishery. The PFBC recommends an instream construction restriction from September 1 through April 1 to minimize impacts to the steelhead fishery. The PFBC recommends that the applicant and contractor understand the implications of these restrictions and plan any and all instream construction work accordingly.

The PFBC recommends that the applicant contact Tom Burrell of the PFBC to determine if an Aids-to-Navigation plan (ATON plan) is required for the proposed project: WCO Burrell can be contacted at 717-705-7838 or tburrell@pa.gov.

The proposed project intends to blast and trench in potential fish spawning habitats (generally, waters < 20 feet deep) during spawning timeframes of major Lake Erie gamefishes such as yellow perch, smallmouth bass and walleye (generally, April through July). The PFBC recommends that the applicant compensate for the proposed impacts to Lake Erie fishes and their associated habitat through the construction of reefs for fish habitat. Reefs can be constructed from excavated bedrock material, and be of sufficient size, shape, depth, location and proximity to benefit Lake Erie fishes as well as anglers. The applicant should contact Daniel Ryan of the PFBC (814-359-5140) to further discuss reef configuration and siting, and ultimately a report including this information should be submitted to the

PFBC to be published on the PFBC website for angler awareness. Ryan.

(PFBC Division of Environmental Services)

Approved [X] Not Approved [ ]

See Comments [ ] Withdrawn [ ]

8/15/2016
(Date)

(Approved)

Pennsylvania Fish & Boat Commission

Attachment 4

PFBC Response on Crooked Creek Crossing

From: Ryan, Daniel <daniryan@pa.gov>
Sent: Friday, September 09, 2016 3:36 PM
To: Browne, Peter
Subject: RE: Lake Erie Connector - artificial reef; Crooked Creek crossing

Peter,

Since the project proposes to work in stocked trout and steelhead areas, the JPA will have to come with special conditions (i.e., instream construction restrictions for stocked trout and steelhead) and they cannot be removed. Ideally, it would simply be best to time the HDD crossings to avoid the instream construction restrictions, especially since you're still in the planning/permitting phase of the project as of right now. Regardless, you can still work during the instream construction restrictions so long as you have prior approval (i.e., a waiver) from the PFBC, depending on the type and duration of the activity being proposed.

I'd be your point of contact for any waivers of the instream construction restrictions on the JPA. I realize that HDD can have minimal impact on the streams and angling resources if done correctly, but normally I do have a few concerns that I look for when submitting a waiver request:

1) Angler access to the stream is not blocked by construction (i.e., angler parking areas are not utilized as construction laydown areas)
2) Minimizing the probability of any occurrence of an inadvertent return. Should an inadvertent return occur during the restriction, the applicant could be responsible and may be subject to PFBC law enforcement action

In a nut shell, you will have to contact me with more information prior to working through the instream construction restriction in any year during construction. Hope that answers your question. Have a good weekend.

Thanks,

Daniel Ryan
Fisheries Biologist
450 Robinson Lane
Bellefonte, PA 16823
Phone: 814-359-5140
Fax: 814-359-5175
Email: daniryan@pa.gov

From: Browne, Peter [mailto:Peter.Browne@hdrinc.com]
Sent: Wednesday, August 31, 2016 3:10 PM
To: Ryan, Daniel
Cc: Smiles, Heather A; Jamieson, Andrew (AJAMIESON@Itctransco.com); Mitchell, Robert
Subject: Lake Erie Connector - artificial reef; Crooked Creek crossing

Hi Dan,

In follow up to our discussion, attached for your review please find ITC's conceptual plan for two artificial reefs, which would be created from rock excavated from the HDD exit pits. The plan shows the approximate location and anticipated dimensions of the artificial reefs.

Also, in your comments on the JPA, PFBC recommended an instream construction restriction within Crooked Creek from March 1 to June 15 to protect stocked trout angling, and from September 1 through April 1 to minimize impacts to the

steelhead fishery. The terrestrial cable route crosses Crooked Creek at two locations: Station 118+26 (Lexington Road) and Station 274+50 (just south of U.S. Route 20). However, horizontal directional drilling (HDD) under the stream bed is proposed at both of these locations. The HDD boring would be at least 4 ft below the bottom of Crooked Creek, and no earth disturbance would be closer than 150 feet from Crooked Creek. As such, we believe the proposed construction method will protect stocked trout angling and avoid impacts to steelhead. Given that no instream construction would occur, we wanted to confirm that the HDD work at these two crossing locations can proceed without a timing restriction.

Best regards,

Peter

Peter Browne
Senior Consultant, Renewable Energy Services

HDR
970 Baxter Boulevard, Suite 301
Portland, ME 04103
207.239.3863
peter.browne@hdrinc.com

hdrinc.com/follow-us

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Attachment 5

PFBC Response Regarding Aids to Navigation

From: Burrell, Thomas <tburrell@pa.gov>
Sent: Thursday, September 01, 2016 8:57 AM
To: Browne, Peter
Subject: Re: Lake Erie Connector Project

Mr. Browne,

Thank you for contacting the Pa Fish and Boat Commission concerning the need for an ATON Plan for the Lake Erie Connector Project. As we discussed based on the current plans as described during our conversation an ATON Plan will not be required at this time. If the scope or design of the project should change please contact my office for further review.

Thomas Burrell, Captain
PFBC, Bureau of Law Enforcement

Sent from my iPhone

On Aug 31, 2016, at 3:22 PM, Browne, Peter <Peter.Browne@hdrinc.com<mailto:Peter.Browne@hdrinc.com>> wrote:

Dear Mr. Burrell:

Thank you for your time today discussing the Lake Erie Connector Project. Pursuant to our discussion, I understand you will forward a summary of your conclusions regarding if an Aids-to-Navigation Plan is required for the proposed project.

Best regards,

Peter

Peter Browne
Senior Consultant, Renewable Energy Services HDR
970 Baxter Boulevard, Suite 301
Portland, ME 04103
207.239.3863
peter.browne@hdrinc.com<mailto:peter.browne@hdrinc.com>

hdrinc.com/follow-us<http://hdrinc.com/follow-us>

Attachment 6

PFBC Approval of Plan for Artificial Reefs

From: Ryan, Daniel <daniryan@pa.gov>
Sent: Monday, September 26, 2016 9:36 AM
To: Browne, Peter
Cc: Jamieson, Andrew (AJAMIESON@Itctransco.com); Mitchell, Robert; Smiles, Heather A; Fischer, Douglas; Hartle, Mark
Subject: RE: Lake Erie Connector - revised artificial reef conceptual plan
Attachments: USA Drill Exit Revised 9-23-16.pdf

Peter,

This plan will suffice for PFBC needs on the Chapter 105 side. I've copied Doug Fischer, Heather Smiles and Mark Hartle as an FYI. Let me know if you need anything else.

Thanks,

Daniel Ryan
Fisheries Biologist
450 Robinson Lane
Bellefonte, PA 16823
Phone: 814-359-5140
Fax: 814-359-5175
Email: daniryan@pa.gov

From: Browne, Peter [mailto:Peter.Browne@hdrinc.com]
Sent: Monday, September 26, 2016 8:49 AM
To: Ryan, Daniel
Cc: Jamieson, Andrew (AJAMIESON@Itctransco.com); Mitchell, Robert
Subject: Lake Erie Connector - revised artificial reef conceptual plan

Hi Dan,

In follow up to our call last week, attached please find the revised conceptual plan for the artificial reefs for the Lake Erie Connector Project. Following your review, can you please respond with your approval, and we will update the Corps and DEP of our discussions.

Thanks,

Peter

Peter Browne
Senior Consultant, Renewable Energy Services

HDR
970 Baxter Boulevard, Suite 301
Portland, ME 04103
207.239.3863
peter.browne@hdrinc.com

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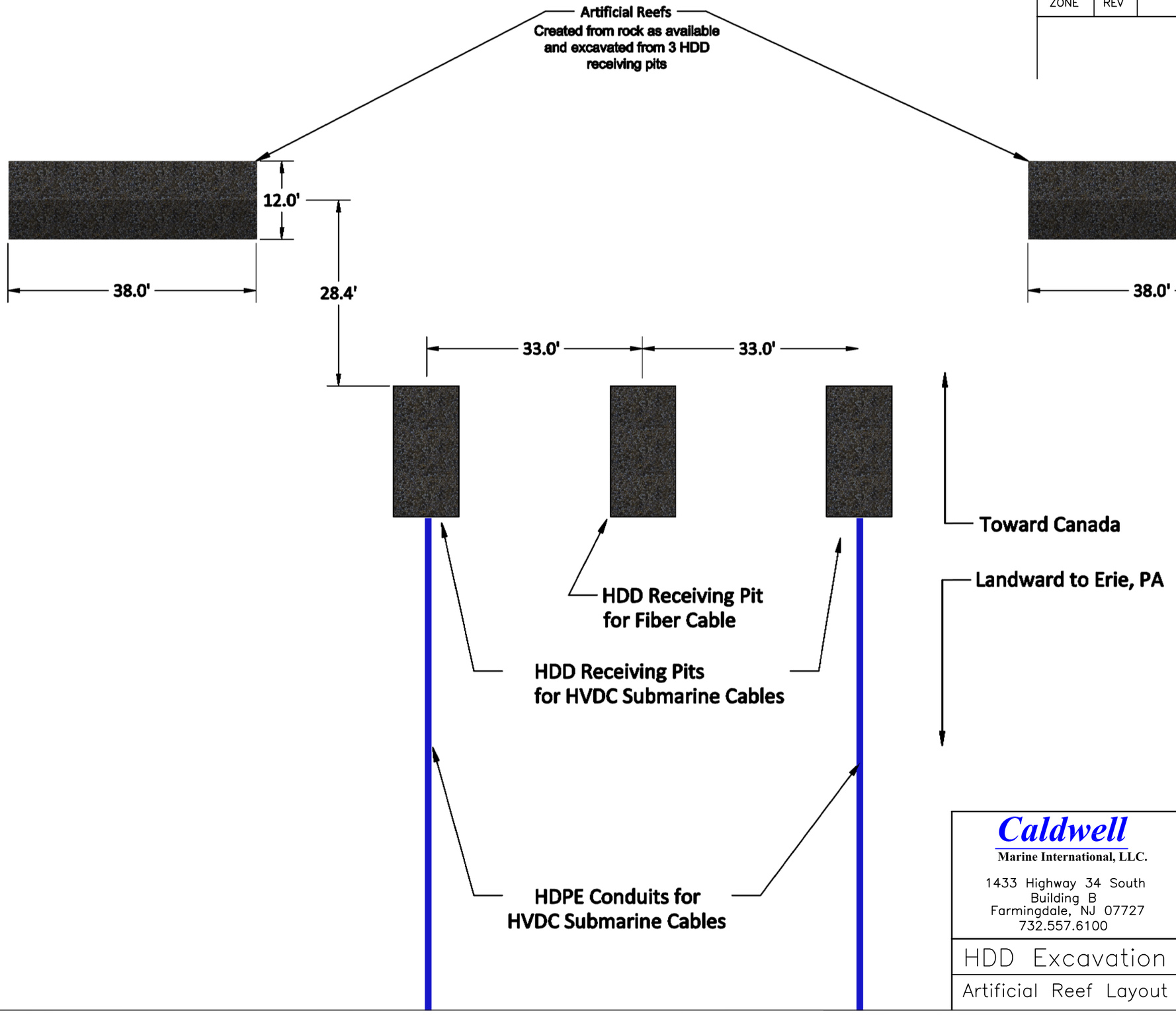
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



Notes:

- Height of reefs no greater than 4' above lake bed
- Dimensions are approximate
- Artificial reefs are in water depths of approximately 18'
- Artificial reef location to be established using GPS coordinates of the corners of each reef. Coordinates to be provided to the PFBC for angler awareness.
- Divers will confirm the coordinates of the corners of the artificial reefs as well as the reef dimensions, including height
- If additional rock is required to achieve the approximate reef dimensions shown, it will be obtained from the rock excavated from the cable trenches adjacent to the HDD exit pits

Caldwell
Marine International, LLC.
1433 Highway 34 South
Building B
Farmingdale, NJ 07727
732.557.6100

Client: Prysmian

Project: Lake Erie Connector Project

HDD Excavation

Artificial Reef Layout

SIZE	DATE	DWG NO.	REV
B	8/26/2016	job no–00x	

SCALE; none

SHEET 1 of 1

Attachment 7

ITC Response to Comments on the JPA Received by the USACE

ITC Lake Erie Connector Responses to Comments on Joint Permit Application
October 6, 2016

ITC Lake Erie Connector, LLC Responses to Comments Received by the U.S. Army Corps of Engineers on the Lake Erie Connector Joint Permit Application

The following codes identifying particular commenters are used in this response to comments (comment letters are included in Attachment A):

Code	Commenters	Comments Filed on these Dates
PFBC	Pennsylvania Fish & Boat Commission	6/29/16 letter filed in response to DOE's Draft Environmental Assessment and attached to Douglas Lavery's 7/19/16 Comment Letter on JPA
SONS	SONS of Lake Erie Fishing Club	7/5/16 online comment
MM	Michelle Mihalak	8/5/16 email
DL	Douglas Lavery	5/17/16 letter, 6/29/16 letter, 6/30/16 online comment & 7/19/16 letter
CTS	Conneaut Township Supervisors	6/20/16 letter attached to Douglas Lavery's 7/19/16 Comment Letter on JPA
MA	Multiple Authors	6/22/16 letter signed by Mr. and Mrs. Wheeler, Mr. and Mrs. Loep, Mr. and Mrs. Fish, Mr. and Mrs. Faykak, Mr. and Mrs. Berry, and Mr. Omer.
P	Petition Opposing Project	Petition is not dated
PB	Pat Bartosek	7/22/16 letter
EPA	Environmental Protection Agency	7/25/16 email
KHM	Kathleen H Marino	7/23/16 email
DM	Dave Marino, LA	3 emails dated 7/21/16 and 1 email dated 7/22/16
JJ	James Jordano	7/20/16 email

No.	Comment Date	Topic	Comment	Response
PFBC 1	6/29/16 letter to DOE	HDD	DOE EA Section 2.4.5.1[1], Aquatic Transmission Cable Installation in Lake Erie Segment, Horizontal Directional Drilling Method: This section references a Drilling Fluid Management Plan (DFMP). The DFMP should be provided and elaborated upon in the Environmental Assessment in order to minimize any impacts of inadvertent returns. In addition, the DFMP should include contacting the appropriate authorities should a release occur, specifically, PFBC law enforcement at 814-337-0444.	The comment refers to the DOE EA. As explained in the Joint Permit Application ("JPA") Environmental Assessment ("EA"), p. 2-16: "To address the potential risk in HDD activities of an inadvertent return (i.e., the unexpected leakage of drilling fluids [consisting largely of bentonite clay] through unidentified weaknesses in the soil), the HDD contractor for each installation will provide and implement a Drilling Fluid Management Plan. The Drilling Fluid Management Plan will identify the fluid handling, recovery, recycling, and disposal procedures and equipment. The HDD contractor will also implement the Inadvertent Fluid Release Prevention, Monitoring, and Contingency Plan (Attachment 1 of the PADEP/USACE Joint Permit Application submitted in January 2016); this plan identifies procedures for monitoring for fluid release, containing a fluid release if it occurs, and cleaning up any fluid losses. Prior to construction, meetings will be held with the authorizing agencies to review these plans." As indicated by that statement in the JPA EA, ITC Lake Erie Connector, LLC (ITC) has identified 1) that the Drilling Fluid Management Plan will be developed for fluid handling, recovery, recycling, and disposal procedures and equipment and is something that the contractor would prepare and submit at a later date, and 2) that the Inadvertent Fluid Release Prevention, Monitoring, and Contingency Plan has been developed for monitoring for, containing, and cleaning up inadvertent returns. This point was reviewed during a phone call with Dan Ryan, PFBC, on July 21, 2016. Mr. Ryan's main concern was that ITC add the Northwest Regional Law Enforcement Office contact information to the plan, and that PFBC be contacted before HDD begins. ITC will include those provisions in the plan. With the addition of this information, he had no further concerns.

[1] Note: Section numbers referenced in the PFBC comments refer to sections in the draft Environmental Assessment prepared by the U.S. Department of Energy ("DOE") as part of the pending Presidential Permit process, rather than the Environmental Assessment submitted as part of the JPA.

No.	Comment Date	Topic	Comment	Response
PFBC 2	6/29/16 letter to DOE	Sidecast rock	DOE EA Section 5.1.4.1, Effects of Construction, Fish: This section mentions the side-casting of rock associated with blasting and/or excavation, and that this material may provide an increase in spawning habitat area after construction activities cease. Please elaborate upon the configuration, size, and location of this material in order to show its benefit to fishes, in lieu of simply side-casting this material beside the excavated trench. The PFBC suggests that this material be utilized to create fish habitat by configuring suitable sized debris in piles to create an array of suitable topography as habitat for fishes.	ITC discussed this concept with PFBC staff and subsequently developed a plan to establish two rock reef structures just north of the Lake Erie HDD exit pits, which will consist of excavated rock as available from the three HDD exit pits. Each rock reef would be approximately 38 ft x 12 ft x 4 ft in height and would serve as new long term aquatic and fish habitat features within the lake bed. Upon review and concurrence by Dan Ryan, PFBC, the proposed plan was included in the blasting permit application submitted to the PFBC on September 27, 2016.
PFBC 3	6/29/16 letter to DOE	Rock trenching impacts	DOE EA Section 5.1.4.1, Effects of Construction, Fish: The PFBC agrees that the applicant has proposed several efforts to avoid and minimize impacts to fish habitat, however, it appears that the project construction schedule cannot avoid in-water construction in sensitive habitats and timeframes. In particular, the proposed project intends to blast and trench in potential fish spawning habitats (generally, waters < 20 feet deep) during spawning timeframes of major Lake Erie gamefishes such as yellow perch, smallmouth bass and walleye (generally, April through July). The PFBC suggests that the size of the proposed trench in waters less than 20 feet deep, as well as the area impacted by side-casted material in waters less than 20 feet deep, be calculated and added to the EA as permanent impacts to fish spawning habitat.	Only about 11 percent of the proposed blasting area (approximately 0.1 miles) will take place within waters less than 20 feet deep. This does not represent a significant permanent impact because the trench will be bedded and backfilled with a sand and gravel mixture (originating from an on-land source). The side-cast rock could be considered a permanent *positive* impact to fish (the benefits are stated in the JPA EA). This was reviewed during a phone call with Dan Ryan, PFBC, on July 21, 2016. He indicated that since the long term benefits of the sidecast rock are stated in the JPA EA, then this addresses his comment. He said the benefits were not explicitly stated in the DOE EA. In addition, upon PFBC's request, ITC has developed a preliminary plan to establish two rock reef structures just north of the Lake Erie HDD exit pits, which would enhance long term aquatic and fish habitat. The proposed plan was included in the blasting permit application submitted to PFBC on September 27, 2016.

No.	Comment Date	Topic	Comment	Response
PFBC 4	6/29/16 letter to DOE	Blasting effects – field study requested	DOE EA Section 5.1.4.1, Effects of Construction, Fish: The PFBC agrees that the applicant has proposed several efforts to avoid and minimize impacts to fish by underwater blasting, and that scientific literature suggests fish mortality as a result of underwater blasting is highly variable. The PFBC recommends that anticipated fish mortality be investigated and included as part of the EA. The PFBC suggests that hydroacoustics and/or sonar be utilized to determine seasonal fish density in proximity of the proposed time and locations of blasting, and to estimate threshold distances of expected fish mortality. The resulting numbers should be used to predict fish mortality within the proposed blasting area and the EA should be amended to include this information.	The estimated threshold distances of predicted fish mortality are presented in the JPA EA and Appendix I (Blasting Analysis); however, this information is not currently included in DOE's EA. Further field studies of fish density would not be effective or productive because the distribution of fish in a large water body like Lake Erie is very patchy and varies constantly. Also, such studies could only identify the general size of fish in the study area and would not determine species type, so they would be of limited value. In addition, impacts to fish will only occur during a single construction period and will not be permanent or ongoing. The ITC team has been discussing this with PFBC, most recently during a discussion on September 9, 2016, in coordination related to development of an application for a PFBC blasting permit. That blasting permit application was submitted to the PFBC on September 27, 2016. ITC will continue to work with PFBC to address their needs through the blasting permit application review process.
PFBC 5	6/29/16 letter to DOE	Darter effects	DOE EA Section 5.1.5.1, Effects of Construction, Eastern Sand Darter: The information presented in the EA related to eastern sand darter impacts is not currently approved by the PFBC as the applicant is still in consultation with the PFBC about the proposed impacts. The EA presented average eastern sand darter abundance and assumed that the available trawl data across years and localities is representative of the eastern sand darter population at the site of construction. In addition, the average eastern sand darter abundance presented does not address bias inherent with the survey design or gear type or the potential for an abundant year class to be present during the construction period was also not considered. The PFBC suggests that any reference to numbers or abundance of eastern sand darters in the project area be removed from the EA until consultation with the PFBC regarding eastern sand darter abundance within the project area is finalized.	PFBC staff informed HDR in a teleconference on September 9, 2016, that they had completed their biological opinion of potential impacts to the eastern sand darter and concluded that the Project would result in a take of 52 darters. On October 5, 2016 ITC received a letter from the PFBC containing the biological opinion along with a take permit for the 52 darters. A copy of this letter is included in Attachment B.

No.	Comment Date	Topic	Comment	Response
PFBC 6	6/29/16 letter to DOE	EMF effects	DOE EA Section 5.1.4.3, Effects of Operations, Maintenance and Emergency Repairs: Various fisheries management agencies have tagged, and are currently monitoring, movements of various Lake Erie fishes through hydroacoustic transmitter and receiver equipment submerged in Lake Erie. More information about these telemetry projects can be found at the following website: http://data.glos.us/glatos/. The PFBC recommends that the applicant contact Chuck Murray of the PFBC at 814-474-1515 to determine the location of the proposed electrical lines in relation to hydroacoustic monitoring equipment and any associated interference(s) to telemetry studies by the proposed project. The EA should be updated to include any foreseen impacts to these telemetry studies as a result of the project.	This issue was not addressed in DOE's EA, but was addressed in the JPA EA, p. 5-33: *"In an email dated March 24, 2015, the PFBC requested additional information regarding an analysis of effects of EMF on hydroacoustic telemetry tags and receivers (the Great Lakes Acoustic Telemetry Observation System currently monitors fish migration in Lake Erie). The telemetry receivers are not close to the cable. In addition, the static magnetic field from the cable is like that of the earth and of similar intensity. These magnetic fields will neither interfere with the acoustic signals nor the receiver instrumentation (personal communication, Dr. William Bailey, Exponent, March 24, 2015)."*
PFBC 7	6/29/16 letter to DOE	EMF effects	DOE EA Section 5.1.4.3, Effects of Operations, Maintenance, and Emergency Repairs: This section indicates that some aquatic species may be sensitive to electromagnetic fields (EMFs). Please indicate which species of fishes would be most sensitive to electric fields, including salmonids and sturgeons, and discuss if scientific literature suggests EMF thresholds for these species. Please compare detectability thresholds for EMFs for each species indicated above and the proposed EMF levels that will be emitted by the project, and any potential adverse impacts to these fishes. Please indicate and further elaborate on avoidance and minimization practices (i.e., proximity to sensitive aquatic resources, burial, cable shielding, etc.) being implemented for the project to avoid and minimize any potential adverse impacts of EMFs to fishes.	EMF effects were addressed in the referenced section of DOE's EA. The additional information requested by PFBC was provided in the JPA EA in the EMF report (JPA Volume III, Appendix F).

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PFBC 8	6/29/16 letter to DOE	Aids-to-Navigation; Fishing buoys	DOE EA Section 5.1.12.1, Effects of Construction: The applicant should contact WCO Tom Burrell of the PFBC at 717-705-7838 to determine if an Aids-to-Navigation (ATON) plan is warranted for this project. In addition, and in order to compensate for temporary losses in boating and angling opportunities due to the proposed exclusion zone around construction activities, elaborate upon ways to mark the locations of the habitat described in *Section 5.1.4.1, Effects of Construction, Fish* above (i.e., the second bullet point from the top discussing side casted material) so anglers can utilize this man-made habitat to target gamefishes.	Mr. Burrell indicated in an e-mail on September 1, 2016 that based on the current Project plans an ATON Plan will not be required. A copy of that email is included in Attachment B. In response to discussion with PFBC regarding the creation of two artificial reefs, the reef location will be identified using GPS, and these coordinates provided to the PFBC for angler awareness. ITC will provide approximate GPS coordinates for the corners of each artificial reef.
SONS 1	7/5/16	Blasting	We are greatly concerned by the proposed blasting in Lake Erie to be undertaken during the construction and the potential harm it will impose on the fishery.	See response to PFBC 2, 3 and 4
SONS 2	7/5/16	Contam. Sediment	We are also concerned with the trenching to be undertaken on the Lake bottom and the amount of toxic sediments that could potentially be released by this process.	This issue was addressed by ITC's water quality model, as summarized in the JPA EA, p. 5-11: *"All model-calculated dissolved metals concentration increases were less than the associated method detection limits (MDL) and much less than acute and chronic dissolved WQS (HDR 2015)."* The full water quality model report is provided in JPA Volume III, Appendix E. It was also addressed in DOE's EA, p. 5-3: *"Model results for increases in the concentrations of dissolved metals are less than the associated method detection limits and much less than short-term and long-term water quality standards (HDR 2015)."*

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SONS 3	7/5/16	Thermal pollution	We are also concerned with the amount of thermal pollution that will be generated from the cable when finally completed.	This issue related to the Lake Segment was addressed in the JPA EA at p. 5-33: *"Exponent has calculated thermal effects to lake water from operation of the Project (Exponent 2015b, Appendix G). Using a set of conservative variables in terms of soil thermal properties and water velocity, the largest increase in temperature was found to be approximately 4.4°F (2.4°C) at the water/soil interface on the lakebed. The point of highest temperature increase was found to be approximately 9 inches (23 cm) in the downstream water flow direction from the cables' centerline. As seen in the attached Figure 5.3-1, the physical extent of this temperature increase is very limited. For example if one were to move vertically by only 4 inches (10 cm) from the point of highest temperature increase on the lakebed, the temperature increase would drop to a mere 0.2°F (0.1°C) (Exponent 2015b)."* In the Underground Segment, the cables will be enclosed in PVC conduit encased in concrete. All electric cables generate heat, including the HVDC cables proposed for the Lake Erie Connector project. However, while the soil temperature adjacent to the cable duct bank is anticipated to increase due to operation of the proposed HVDC transmission cables, the heat will dissipate quickly with increasing distance from the proposed transmission cable. The temperature increase near the ground surface is expected to be less than 0.5 degrees Fahrenheit and will not affect the freeze/thaw cycles or vegetation. The cables do not consume water for cooling.

No.	Comment Date	Topic	Comment	Response
SONS 4	7/5/16	Ground water	Finally our concern is for the property holders along the path of the cable and the potential of adversely affecting the ground water and their wells.	The DOE EA addressed this issue on p. 5-44, referencing the Moody and Associates study. That report was appended to the JPA EA (Appendix M). The potential for any adverse impact on private drinking water wells in the Project vicinity is low, and ITC has committed to implement certain construction techniques recommended in the Moody and Associates report in order to avoid, reduce or mitigate the risk of impact to residential water supply wells. These techniques include creating channels oriented perpendicular to the direction of the cable trench along sections of concern and backfilling them with permeable material that would permit groundwater flow beneath the LEC cable. Dewatering activities will be kept to the minimum level necessary to facilitate construction while avoiding the alteration of preexisting groundwater flow gradients, which could result in reduced yields in adjacent wells. ITC will also develop and implement a Project-specific Private Water Supply Impact Avoidance, Protection and Contingency Plan to address any landowner complaints regarding water quality or quantity issues that are attributed to the LEC Project construction or operation. The plan will contain a process that provides for the receipt of complaints concerning potential Project impacts on the quantity and quality of private water wells along the transmission line route, and the expeditious investigation of such claims by an independent hydrogeologist. The plan will provide that, pending investigation, private water supplies within a potential impact area will be provided a temporary replacement water supply. If after investigation the independent hydrogeologist concludes that the Project has caused or contributed to an adverse impact on the quantity or quality of on a private water supply, ITC will take one the following actions: (1) provide to the property owner/occupant an alternative water supply meeting Pennsylvania Safe Drinking Water Act standards and of adequate quantity to meet the complainant's reasonable needs; (2) provide financial compensation to the property owner/occupant sufficient to cover the costs of acquiring an alternative water supply of adequate quantity and quality; or (3) take such other measures as are mutually agreed upon, in writing, by and between ITC and the property owner/occupant.

No.	Comment Date	Topic	Comment	Response
SONS 5	7/5/16	Route	There is a right of way that is available on Penelec property and should be used rather than disrupting residents along the currently proposed path.	ITC evaluated alternatives as discussed in Volume II, Attachment 3 of the JPA (Section 3 of the JPA EA). With respect to alternative routes for the cable, ITC evaluated several transmission line route, converter station site, and landfall location alternatives. These alternatives were evaluated in relation to the LEC Project's purpose, need and geographic requirements, as well as the practicability and environmental consequences of each alternative. ITC attempted to minimize adverse impacts to residents, their land and the natural environment while still providing a technically and legally viable and cost-effective transmission line. The Erie West substation location in Conneaut Township was selected due to its electrical characteristics and relatively low environmental resource disturbance. Once that location was selected, a number of routes from the lakeshore to the converter station were evaluated based on multiple studies. The preliminary route review included consideration of a route that would parallel existing Penelec transmission lines and a route that would have been constructed in the former railroad right of way. These routes were not viable routes for this Project based on environmental, legal and land use factors.
MM 1	8/5/16 email	EMF	Concerned with potential health effects due to close proximity of residence to the Project, specifically the electromagnetic field.	Public health and safety effects of the Project are discussed in Section 5.10 of the JPA EA (Attachment 3 of the JPA). The High Voltage Direct Current ("HVDC") technology, cables, and converter station that comprise the project are safe and reliable. The cables are well insulated, do not contain liquids or gels, and are made from nonflammable materials. The transmission cables are designed with outer metal insulated layers, which will virtually eliminate the static electric field. HVDC cables do not produce the same type of alternating magnetic fields as AC transmission and distribution systems. The magnetic fields produced by HVDC cables are static fields similar to the earth's static magnetic field. Through the use of HVDC technology, and because the cables will be shielded and the transmission lines will be buried underground, a viable exposure pathway will not occur by which the general public will be exposed to magnetic levels that represent a human health concern.
MM 2	8/5/16 email	Water resources	Concerned with potential effects of Project on water supply to private well.	See response to SONS 4

No.	Comment Date	Topic	Comment	Response
MM 3	8/5/16 email	Route	Requested information on alternative routes that were investigated and location of this information. Questioned whether there was still time to consider alternative routes. Asked if this information be shared with the residents or township supervisors?	See response to SONS 5 In a letter dated September 16, 2016, ITC provided responses to similar questions from Girard Township supervisors regarding alternative routes. A copy of that response is provided in Attachment C.
DL 1	6/29/16 & 7/19/16 letters and 6/30/16 online comment	Project ownership	Concerned that ITC has been purchased by a foreign company.	The forthcoming acquisition of ITC Lake Erie Connector LLC's (ITC's) ultimate parent, ITC Holdings Corp. ("Holdings"), by a Canadian company, Fortis, Inc. ("Fortis"), raises no legitimate concerns regarding the Lake Erie Connector Project. ITC itself, the company that will hold the various required U.S. permits for the project, is, has always been and will remain a U.S. company. The same is true for Holdings. ITC will remain subject to the jurisdiction of all applicable U.S. regulatory agencies, including the Federal Energy Regulatory Commission ("FERC"), the U.S. Department of Energy, the U.S Army Corps of Engineers and various Pennsylvania state agencies. The jurisdiction and authority these agencies have over the Lake Erie Connector Project and ITC's activities will not be affected by Fortis' acquisition of Holdings. In addition, the acquisition has been specifically reviewed by the U.S. Department of the Treasury's Committee on Foreign Investment in the United States ("CFIUS") which has found that the transaction poses no national security concerns, and it has been reviewed and approved by the FERC. Finally, due to the long standing and extremely close relationship between the U.S. and Canada, many U.S. companies are owned or controlled by Canadian interests and vice versa, and foreign ownership has not and does not raise concerns. Indeed, Fortis itself already owns two U.S. utilities, Central Hudson Gas and Electric Corp. and Tucson Electric Power, and its ownership has not caused concerns for those companies or their customers.
DL 2	6/29/16 & 7/19/16 letters	Water resources	Concerned with potential effects of Project on the water table and supply.	See response to SONS 4
DL 3	5/17/16, 6/29/16 & 7/19/16 letters and 6/30/16 online comment	Health	Concerned with potential health effects associated with Project.	See response to MM 1

No.	Comment Date	Topic	Comment	Response
DL 4	5/17/16 & 7/19/16 letters	Property values	Concerned with the potential loss of property values associated with the Project and questioned whether a property value study was conducted for local residents located in close proximity to the convertor hall.	In ITC's experience, the existence of electric transmission infrastructure has minimal to no impact on land values. ITC would particularly expect this to be the case where the electric transmission lines are installed underground, and the converter station includes appropriate setbacks and landscaped buffers from surrounding properties. ITC is following all applicable planning and zoning regulations, and appropriate landscape screening will be provided to reduce visual impacts. While ITC acknowledges some landowners may not want certain trees in the road and transmission line right-of-way to be removed, it is important to note that under Pennsylvania law, trees growing in the right-of-way of Township roads are subject to pruning or tree removal if required by the needs of road use or other uses authorized in the right-of-way. Utility projects such as the ITC Project are examples of authorized uses of the road right of way under Pennsylvania law. ITC is focused in its design and engineering efforts to minimize impacts to any trees in the road rights-of-way. In those instances where trees will be impacted, ITC has included in the Road Use Agreement it is currently negotiating with local townships, an obligation by ITC to compensate affected landowners for the value of any trees that need to be removed. The proposed converter station was chosen in conjunction with a willing landowner and to minimize the distance from the station to the existing Erie West Substation. The selected site is set well back from the road and adjacent landowners, and ITC proposes planting new trees to establish a visual buffer.

No.	Comment Date	Topic	Comment	Response
DL 5	5/17/16, 6/29/16 & 7/19/16 letters and 6/30/16 online comment	Cooling fans	Concerned with the potential impacts of cooling fans (i.e. noise and heat) on residents, pets, and wildlife.	Anticipated sound level impacts associated with the operation of the proposed converter station were analyzed and are discussed in Section 5.9.2.3 of the JPA EA (Volume II, Attachment 3 of the JPA). As detailed in the JPA EA, ITC commissioned noise control experts at HGC Engineering to measure ambient noise levels in the vicinity of the proposed Erie West Converter Station and to prepare a predictive sound level model regarding the potential propagation of sound from the proposed Converter Station to potential residential receptors in the vicinity. The modeling results predict worst case sound levels at the closest residence of 55 dBA with the emergency generator running, and 48 dBA with maximum fan systems operation, but without the emergency generator running. To place these values in perspective, a level of 45 dBA is typical of a small town residence. Ambient noise measurements taken by HGC in the area showed minimum one-hour equivalent sound levels less than 50 dBA during daytime hours and less than 40 dBA during nighttime hours. No adverse impacts associated with the operation of converter station cooling fans are anticipated. Heat from the converter station will be reduced by the installed cooling fans and will not adversely affect the atmosphere, flight patterns of birds, or other wildlife.
DL 6	6/29/16 & 7/19/16 letters and 6/30/16 online comment	Blasting; long term project effects	Concerned with the short-term effects of blasting and long-term effects of operation on aquatic organisms including "four local fish".	Blasting impacts are discussed in the EA (Attachment 3 of the JPA) in Section 5.4.1.1 and in the blasting analysis contained in Appendix I of the JPA EA. See responses to PFBC 2, 3 and 4. Long term effects of operation of the project are negligible, as explained in the JPA EA. See responses to PFBC 3 and SONS 3.
DL 7	6/29/16 & 7/19/16 letters	Water quality	Concerned with rise in water temperatures associated with the aquatic portion of the Project and the potential for algal growth.	See response to SONS 3

No.	Comment Date	Topic	Comment	Response
DL 8	7/19/16 letter	Economy	Concerned the Project will result in long term negative effects to the local fishing business.	During construction, only limited short duration access constraints to streams near the construction area will temporarily hinder access to some fishing areas along the underground segment of the Project route. Likewise, installation of the cable within Lake Erie will result in only temporary, site-specific constraints on boat access within the construction area. There will be no long term limits on access to current fishing opportunities during project operation and no long-term changes to existing fish populations or fishing opportunity are expected. As noted in the response to PFBC comments, ITC has engaged in consultations with the PFBC, and has agreed to install certain artificial reef structures to enhance fish habitat.
DL 9	6/29/16 & 7/19/16 letters and 6/30/16 online comment	Birds and bats	Concerned the proposed Converter Hall will negatively impact birds (i.e. flight patterns) and bald eagles in the area. Indicated Project impacts on birds and bats should be considered.	Potential impacts on birds and bats within the project area were evaluated in consultation with federal and state wildlife agencies and the agency consultation documents and findings are included in Section G of the JPA and in Sections 5.5 and 5.6 of the JPA EA (Volume II, Attachment 3 of the JPA). No significant effects to birds or bats are expected from construction and operation of the proposed project. Based on the review of potential impacts to birds and bats, both U.S. Fish and Wildlife Service and the Pennsylvania Department of Conservation and Natural Resources did not object to the project based on its current layout, construction methods and proposed operation.
DL 10	5/17/16, 6/29/16 & 7/19/16 letters and 6/30/16 online comment	Vaults – impacts/ location	Concerned with the location of vaults and their impacts on the water flow and quantity. Indicated information on the proposed location of vaults should be disclosed.	ITC understands resident concerns regarding the location of the splice vaults that will connect segments of the land cable. The exact location of these vaults will not be available until the detailed design process is completed, which is expected to be in late 2017. Neither the cables nor the splice vaults will be located outside of the road right of way unless ITC has specific easements granted by affected landowners. The final location of the vaults along the route will be dependent on the final cable design, maximum road transportable lengths and maximum installable lengths of the cable, and ITC's efforts to minimize conflicts with existing driveways, utilities, and structures. Regarding water effects, see response to SONS 4
DL 11	5/17/16 & 7/19/16 letters	Energy dependence	Concerned the Project will be owned by a foreign entity and result in a dependence on foreign energy.	See response to DL 1

No.	Comment Date	Topic	Comment	Response
DL 12	5/17/16 letter	Environ-mental impact study	Questioned if an environmental impact study has been received from ITC.	ITC has prepared all required permitting-related documents in accordance with the federal, state and local laws and regulations. This included pre-application consultation with all permitting entities and agencies to confirm the application contents and review processes. ITC's JPA included an applicant prepared Environmental Assessment (EA), which included summary reports of a variety of environmental impact studies that ITC completed (e.g., blasting, EMF, thermal, lake water quality modeling, and water well assessment). The U.S. Department of Energy (DOE) has prepared its own EA as part of the National Environmental Protection Act (NEPA) review process for the ITC Project.
DL 13	5/17/16 letter	Project information	Indicated that the amount of information provide by ITC was insufficient and just enough to satisfy requirements by the federal government.	ITC has included a comprehensive amount of information in its JPA, the three volumes of which contained over 2,500 pages, including a very robust environmental assessment. See response to DL 12.
DL 14	5/17/16 letter	Distribution of Project information and property values	Concerned information provided by ITC was not adequately distributed to local residents by their local governmental representatives. Concerned with country living being destroyed by installation of transmission lines and converter hall, and impact on property values.	ITC has prepared all required permitting-related documents in accordance with the federal, state and local laws and regulations. This included pre-application consultation with all permitting entities and agencies to confirm the application contents and review processes. In addition, a project website was established by ITC that includes baseline information on the project, links to media articles, frequently asked questions and upcoming project-related events – www.itclakeerieconnector.com. Regarding impacts concerning sound levels, country living, and property values, see response to DL 4, DL 5, and SONS 5.
DL 15	5/17/16 letter	Target of terrorism	Concerned the Lexington Road site will be a potential target for terrorism due to its role in supporting the regional electric grid.	The transmission cables will be buried and out of view except for the Erie Converter Station. Security fencing will surround the converter station to prevent unauthorized access and to provide public safety. The Erie Converter Station will also be manned 24 hours per day.
DL 16	6/30/16 online comment	Route	Requested an alternative route owned by Penelec be researched, explored and utilized.	See response to SONS 5
DL 17	6/30/16 online comment	Power Source	Requests information on how Canadian Power transmitted by the project will be generated and whether it will all be hydro.	The Project will allow for the transmission of electricity in both directions, from Canada to the US and from the US to Canada. Although a significant amount of electricity generated in Canada is from hydro and other renewable sources, ITC cannot state that all of the power flowing in each direction will be from such sources.

No.	Comment Date	Topic	Comment	Response
CTS 1	6/20/16 letter	General - effects	Concerned with potential impacts of the Project (i.e. Electric Converter Station) on drinking water resources; health effects associated with the proximity of the buried electrical cable to living spaces; impacts associated with noise; loss of quality of life; and property devaluation	See the following responses to these comments: • Drinking water impacts: SONS 4 • Health effects from buried cables: MM 1 • Noise Impacts: DL 5 • Loss of quality of life: DL 4 • Property devaluations: DL 4
CTS 2	6/20/16 letter	Route	Requested an alternative route owned by Penelec be researched, explored and utilized.	See response to SONS 5
MA 1	6/22/16 letter	General - effects	Indicated that there has been no concern for the health, safety, welfare, or responsibility for damage or compensation for the Project to the 13 properties in the Northwest Conneaut Township that have not entered into land sale/agreements or are in negotiations for easement passage for the underground cable by any entity involved in this proceeding.	See responses to MM 1 and DL 4
MA 2	6/22/16 letter	Water resources	Concerned about water pollution (i.e. runoff) to waterbodies, including trout waters, and drinking water resources during construction and maintenance of the Project.	The federal, state and local permitting processes each involve review of Project-specific erosion and sedimentation control plans and stormwater management plans (for both construction-related and post-construction situations). These proposed plans are included in the JPA in Sections M and O. Responding to comments from the PADEP, revised erosion and sedimentation control plans were submitted to PADEP as an amendment to the NPDES Stormwater Permit application on August 10, 2016. These plans include the use of best management practices and project siting and design considerations meant to avoid and minimize potential impacts to water resources and adjacent lands.

No.	Comment Date	Topic	Comment	Response
MA 3	6/22/16 letter	General – effects	Concerned with potential impacts on human health and interference with electrical appliances. Indicated the problems associated with noise disturbance, sight, drinking water and bodily affects from electromagnetic waves and property devaluation remain unanswered.	See the following responses to these comments: • EMF impacts on human health: MM 1 • EMF impacts on electrical appliances: As noted in Section 2.5.2 of the JPA EA, the Erie Converter Station will be designed in accordance with the applicable standards for Electromagnetic Compatibility Limits and will not exceed the design criterion for interference levels. No operational impacts on communication systems would be expected because the transmission cables would not create induced voltages or currents that could impact communications equipment such as marine radios, remote telephones, and cellular telephones. The transmission cables are designed with outer metal layers and would not create an external electric field. Insulated cables do not have corona discharge and are not independent sources of radio, telephone, or television interference. • Noise impacts: DL 5 • Drinking water impacts: SONS 4 • Property devaluations: DL 4 • Visual aesthetics – Visual impacts are addressed in Section 5.8 of the JPA EA. With the exception of the proposed converter station, the ITC project facilities will be within the lake bed or buried underground and out of view. A buffer with planted trees is proposed for the east side of the converter station site, along the driveway to the converter station, and along the road next to the converter station. A visualization of what the Erie Converter Station would look like is provided in Figures 5.8-1 and 5.8-2 of the JPA EA.,
MA 4	6/22/16 letter	General - effects	Concerned about lack of consideration regarding impacts to family and property values in Public Notice No 16-21 that include physical, aesthetic, and radical changes to the rural way of life in the small community of northwest Conneaut Township.	See responses to MM 1 and DL 4
MA 5	6/22/16 letter	Route	Indicated impacts could be reduced by using the Penelec ROW from Lake Erie to Conneaut Township to the Lexington Road Substation.	See response to SONS 5
P 1	Undated Petition Opposing Project	General - effects	Petition concerns include impacts to local wildlife, ecosystem, and water table. Specifically concerned with potential impact on local bald eagles and blue herons.	See responses to DL 9 and SONS 4

No.	Comment Date	Topic	Comment	Response
P 2	Undated Petition Opposing Project	General - effects	Concerned with lack of access to any in depth environmental impact studies conducted by ITC. Concerned regarding health effect associated with noise from the cooling fans and long term health effects from having AC/DC buried cables in close proximity to homes.	See responses to DL 12, DM 4, SONS 4 and MM 1
PB 1	7/22/16 letter	General - effects	Concerned about the installation of the underground transmission line near residence (i.e. removal of trees, effects on water resources). Inquired about the impacts of the transmission line on water resources (i.e. streams, wetlands, springs, pond, wells) and whether it would result in flooding.	• Removal of trees - See response to DL 4 • Water effects – See response to SONS 4 • Flooding – As noted in Section 5.3.2.4 of the JPA EA: Floodplains exist within the proposed Project area at stream crossings. Temporary disturbance to approximately 4.3 acres of floodplain areas would occur during cable installation from clearing, trenching, and HDD activities, including clearing of vegetation, ground disturbance, and related construction activity. To minimize impacts on floodplains during construction, BMPs such as erosion and sedimentation controls and restoring pre-existing ground grading, would be implemented and the area would be restored within a few days after cable installation. Also, a number of floodplain crossings would involve the use of an HDD construction method, which would avoid disturbance of the floodplain areas. Once construction commences, no permanent above-ground alterations or new impervious surfaces along the cable route would be created that could impact flood storage, infiltration, or flooding hazard. Because the transmission line would be buried, there would be no permanent effects on the FEMA mapped floodplains or the PADEP regulated floodways from construction of the proposed Project. The elevation and profiles of work areas within floodplains will be restored to pre-existing conditions. During Project operations there would be no impact on water levels or the potential flood mitigation capacity of the floodplain. Therefore, no long term adverse effects on floodplain areas are expected from operation and maintenance of the underground segment of the LEC transmission line
PB 2	7/22/16 letter	Alternative route	Indicated the Penelec ROW would be more suitable for the transmission line and would have less of an impact on water resources.	See response to SONS 5

No.	Comment Date	Topic	Comment	Response
EPA 1	7/25/16 email	Wetland monitoring	For the PFO wetland establishment/restoration areas, 5 years of monitoring may be insufficient due to the amount of time associated with establishing a mature forested system. EPA recommends at least 10 years of monitoring.	ITC considers a 5 year monitoring plan to be adequate for the proposed wetland compensation site. After 5 years of monitoring is completed and if the USACE determines that additional site management and monitoring is warranted, ITC will extend the wetland compensation monitoring period as required.
EPA 2	7/25/16 email	Performance standards - trees	Furthermore, performance standards should include criteria aimed at describing growth of the tree stratum in the mitigation area (i.e. annual average increase in height or DBH) to demonstrate that areas are on a trajectory of being a forested system. Woody vegetation should show a positive increase in height at the end of each year during the monitoring period.	LEC is preparing a 90% level wetland compensation plan, which will be submitted to the permitting review agencies. This plan and associated report will provide greater detail as requested by the EPA.
EPA 3	7/25/16 email	Performance standards - invasives	Additionally, EPA recommends including vegetative performance standards that include a 5% invasive species action level and no greater than 33% total coverage by a single vegetative species to ensure a diverse community.	ITC commits that invasive species will be monitored during the minimum five year post-construction wetland mitigation site monitoring period, and control measures as specified in the wetland mitigation plan will be implemented if annual average relative areal cover of invasive species exceeds five percent for a period of three consecutive years. Relative areal cover is defined as the total absolute cover for all invasive species divided by the total absolute cover of all species (invasive and non-invasive) observed in monitoring plots. Site performance monitoring will also include evaluation of areal plant species coverage within the mitigation site with a goal of no greater than 33% total relative coverage by a single vegetative species
EPA 4	7/25/16 email	Wetlands	The applicant should provide greater detail on the construction details, treatment expected, and possible maintenance anticipated for the specific biofilter wetland areas.	ITC is preparing a 90% level wetland compensation plan, which will be submitted to the permitting review agencies. This plan and associated report will provide greater detail as requested by the EPA.
KHM 1	7/23/16 email	Contam. sediments	Concerned polluted sediments on the lake's floor will be reintroduced into Lake Erie during construction.	A water quality model was developed and analyzed for the Project and a report of findings was included as Appendix E of the JPA EA (in Volume III of the JPA). The report concluded that temporary construction-related increases in total phosphorous or dissolved phosphorous would be of short duration and then decrease rapidly to pre-construction conditions within approximately four hours of cable route trenching. Similarly, the model results indicate that suspended or dissolved heavy metals that are temporarily mobilized by project construction will not adversely affect water quality or create conditions that exceed Pennsylvania water quality standards.
KHM 2	7/23/16 email	Thermal pollution	Concerned there may be long term effects from thermal pollution that could impact flora and fauna, especially fish.	See the response to SONS 3

No.	Comment Date	Topic	Comment	Response
KHM 3	7/23/16 email	General - effects	Concerned with impacts to property value due to loss of trees, restoration efforts of concord grape vineyard, roads in the winter from heat dissipation, and health risks.	See the following responses to the these comments: • Impacts from loss of trees: See response to DL 4 and DM 6 • Health risks: See response to MM 1 • Impacts to local roads from heat dissipation in the winter: See response to DM 4 • Impacts to vineyard homeowner is restoring: The excavation along Townline Road will be primarily within the roadway, and should not impact the grapevines, unless the grapevines encroach significantly into the right-of-way.
DM1	7/21/16 email	Distribution of project information	Expressed disappointment that a letter for the public notice was not received.	ITC regrets that the landowner was not identified in developing the list of affected landowners.
DM 2	7/21/16 email	General - effects	Concerned with the safety and health effects on residence and family.	See response to MM 1
DM 3	7/21/16 email	General	Questioned how the line is encased or protected to prevent harmful static electric or magnetic fields from being emitted and if there is a recommended distance for residential living from Project.	See response to MM 1
DM 4	7/21/16 email	Thermal effects	Concerned with thermal effects from the buried transmission line related to impacts to permafrost in the winter, mature trees and their dormancy, as well as wetlands and amphibians.	See response to SONS 4.
DM 5	7/21/16 email	Water resources	Concerned with potential effects of Project on water supply to private well.	See response to SONS 4
DM 6	7/21/16 email	Tree removal	Concerned with tree removal in ROW and impacts associated with the wind protection, heat reduction, aesthetic benefits, and value to the property they provide. Indicated many of the trees on property are mature and tree removal in ROW would also indirectly impact the support provided to trees outside of ROW. Indicated trees should not be cut down and line should be encased so not impacted by trees.	ITC is committed to minimizing inconvenience and working with neighboring property owners. However, it is not feasible for the developer of a project such as this to pay landowners along a public road relating to inconvenience arising from construction in a public road right-of-way. Public roads exist in part for purposes such as this project and to support utility infrastructure. In this instance, the township is entrusted with ownership and responsibility for the right-of-way and the township is charged with acting on behalf of its residents along the route to protect their interests consistent with legal uses that may be made of the road right-of-way. That being said, ITC will compensate property owners for the fair market value of trees that are removed. Also, see response to DL 4

No.	Comment Date	Topic	Comment	Response
DM 7	7/21/16 email	Route	Indicated the abandoned railroad and High Power Electric line routes would affect less people and are direct routes from the shoreline to the substation.	See response to SONS 5
JJ 1	7/20/16 email	Route	Questioned why ITC is using current route which includes private property as opposed to an alternate route going from the lake shore to Lexington Penelec substation.	See response to SONS 5
JJ 2	7/20/16 email	Water resources	Concerned with potential effects of Project on water supply to private well.	See response to SONS 4

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Attachment A

Comments on the Lake Erie Connector JPA received by the USACE

Fodse, Michael M LRP

From: Michelle Mihalak <Michelle@haneserie.com>
Sent: Friday, August 05, 2016 10:31 AM
To: Fodse, Michael M LRP
Subject: [EXTERNAL] RE: Lake Erie Connector Project

Hi Michael,

Thank you again for taking the time to talk with me today. Per our discussion, I'm not opposed to the project per se however the route is my concern. My house sits very close to the road, my guess would be 40 feet. My bedroom is in the front of the house(as is my nephews), therefore I feel like I would basically be sleeping on top of this cable every night which can't help make me wonder how it can or will affect my health. Not only my health but my pets and nephew that live with me as well. I try to live a fairly healthy lifestyle so that is something that is very important to me. I would probably be told that there are no health concerns affiliated with the cable but whenever there is an electrical current there will be a magnetic field. MM1

Another major concern is my water well. I was informed that this cable requires ground water/moisture to keep it cool. If this cable is then utilizing any water that would be supplied to my well, how will this impact my water supply? I did have Moody and Associates test my well this past spring (March or April) at that time my water recovery was great. I truly appreciate that I have a baseline for how my well performs but then again, what good will that do me if my well stops producing water? I've been at this residence for roughly 10 years now and have never had an issue with my well. MM2

If an alternate route was found that would be less intrusive to the residents of Girard Township, I would like to think that it could be a viable option as well? Have other routes been thoroughly investigated? If not, is it still possible for them to do so? If they have and are not viable options, has this information or can this information be given to either the residents or township supervisors? MM3

Thank you again for your time~

Michelle Mihalak

8377 Lexington Road

Girard, PA 16417

From: Michelle Mihalak
Sent: Wednesday, August 03, 2016 3:49 PM
To: 'michael.m.fodse@usace.army.mil'
Subject: RE: Lake Erie Connector Project

Hi Michael,

I received your letter in regards to the permits for the Lake Erie Connector Project. I would like to discuss further with you if at all possible. I can be reached at the below number Monday through Friday from 8:30 am to 5 pm. After 5:00 pm, my cell phone is 814-882-8820.

Thank you in advance,

Michelle Mihalak

From: Michelle Mihalak
Sent: Tuesday, July 26, 2016 10:23 AM
To: 'michael.m.fodse@usace.army.mil'
Subject: Lake Erie Connector Project

Hi Michael,

I received your letter in regards to the permits for the Lake Erie Connector Project. I would like to discuss further with you if at all possible. I can be reached at the below number Monday through Friday from 8:30 am to 5 pm. After 5:00 pm, my cell phone is 814-882-8820.

Thank you in advance,

Michelle Mihalak

Ref CELRP-OPF2013-1434

7/19/2016

Mr. Fodse,

In response to the ITC/Lake Erie Connector Project.

Section 1 of the DoE permit ITC states they are not owned by any foreign companies, at the time of the application. This was a true statement. ITC has sold to a Canadian power company called Fortis, for $11.3 billion. Fortis has sold 19.9% to a Singapore company GIC for $1.3 Billion. This alone causes concerns about the USA being supplied electricity from foreign owned companies. The sale should be completed, according to the Fortis website, by the third quarter of 2016. When the sale is completed ITC has no stock in this project. DL1

The Conneaut Township supervisors have submitted a letter to ITC/Mike Ivester that until the concerns of local residents in the future convertor hall location have a guarantee that the water table will not be disturbed and what health issues can happen from such large buried power lines being located in the front yards will or possibly have on residents the supervisors can not approve this project to continue forward. DL2 & DL3

Some other local residents concerns are loss of property values, quality of life living next to the hall and last the impact from the cooling fans on residents, pets and wildlife. DL4 DL5

I have included a copy of the supervisors letter to ITC.

My concerns which I brought to Conneaut Township, Erie County Council, Erie County Executive Cathy Dahlkemper , State Representative Parke Wettling among others are facts stated in the application.

The possible blasting of the bedrock which goes 2000 feet into the lake from the shore, will definitely kill many aquatic life species, along with the four local fish that will have some affects for long term from the buried lines. DL6

Another concern is where the lines are to be buried the water temperatures will rise 2.3 degrees. The Erie area is a fishing community and fishing is a year round benefit to the local economy. The disruption during construction and after will leave a long term negative effect to local fishing business. There will be an effects on algae growth. DL7 & DL8

Local birds that the hall will affect should be considered from the local American Bald Eagle which has a flight path over the future site. This family of Eagles have been local residents for 20 + years and disrupt their life along with local residents is a shame all for a foreign owned power company. The other birds in the report should also be reviewed even down to the bats, which are losing population in America. DL9

The reason for concern is the multiple cooling fans that will be installed in the hall will produce a decibel of 50+,and unknown heat generated into the atmosphere. That high of a constant decibel will be heard by humans,dogs,birds and wildlife. Please save our community from this great disturbance. The heat generated will cause unknown atmosphere issues. DL5

On a personal concern from having to live so close to this foreign owned power business, the local water table is nine feet to thirteen feet deep, The vaults they propose to install are 10'x10'x30' with 1.5' of ground cover and a 6"+ gravel base. That puts them in the water table which if disrupted could possibly go away. I have asked the land agent repeatedly where the location of the vaults are and his comments are they have not be established. DL2

I feel a project of this size and being pushed this fast, an important detail like vault locations should have been decided long ago. ITC knows that PA DOT has told them about weight limits on local roads. The application states there are 15 to 16 vaults on the land route. The local community is not being given the whole truth about this project. DL10

May 21st,2016 Erie County Councilwoman Carol Loll requested ITC come to the Erie County Courthouse for a public meeting. I attended and asked all and more of the issues stated above

Unfortunately ITC's Mike Ivester,Andrew Jamieson nor Steve Halmi were able or were willing to answer these questions.
This meeting brought up concerns from the PA Fish and Boat Commission to the Dept. of Energy along with the SONS of Lake Erie have also submitted a letter to the Dept. of Energy with their concerns.
All the information sent to the Dept. of Energy is on their website
www.lakeerieconnectorea,com
February 2016 the Supreme Court put a stay on the EPA, closing coal powered electric producing plants down. Their concerns were that closing plants without given them a chance to meet emission standards is making America electric weak. In a era when the USA wants to not be energy dependent on foreign companies, we are considering letting one build in America and produce power in Canada to be owned by foreign business. DL11
I asked ITC if the power to be supplied was produced by hydro and the answer was NO.
In closing, Please forward all information to any other organization that currently has a application in their office waiting for approval of this project.
I do understand from our phone conversation that the issues in this letter does not involve your office for permitting, but please take all the information your office has received from local residents and postpone the current permit application from ITC/Fortis,GIC who ever is the current owner of this project.
Give the American power companies a chance to meet emissions and save American jobs before suppling other foreign companies with work opportunities funded by the American public who buy electricity.

Thank You
Douglas Lavery
8651 Lexington Rd.
Girard,PA.16417

Included Conneaut Township's letter ITC
Concerns addressed to Conneaut Township and Erie County Council
SONS of Lake Erie letter
Fish and Boat commission letter
E-mail and letter to DOE/Mr. Brian Mills
Local residents petition

CONNEAUT TOWNSHIP SUPERVISORS
12500 US ROUTE 6N
ALBION, PA 16401
(814) 756-4301

June 20, 2016

Mike Ivester, Regional Manager
Local Government & Community Affairs
ITC Midwest
123 5th Street S.E.
Cedar Rapids, Iowa 52401

Dear Mr. Ivester,

We, the new, legal representatives of Conneaut Township, have listened to many complaints by our constituents over the last several months concerning the planned Electric Converter Station proposed by ITC.

We have also provided an open public meeting, with a presentation by ITC, to discuss the proposed route, construction, and pertinent facts of operation of the planned Station. Several important points have not been addressed, however, and those points still disturb our constituents.

First, and mainly, is the drinking water concern.

Second is the possible health effect from such a large buried electrical cable in such close proximity to living space.

Third is the noise magnitude of this operation.

Fourth is the loss of quality of life.

CTS 1

Finally, and importantly, is the huge property devaluation.

Our Township is basically rural, with only a small portion of homes with city water near the town of Albion. Conneaut Township does not experience water shortages with the water wells in the Township. More importantly, the northwest corner of our Township, where the proposed ITC converter Station would be located, is in the best aquifer in our Township. The proposed line is within feet of, and possibly into or below, the water line of the concerned citizens' drinking water. This is a huge concern, as any damage to the water table could have a substantial long-term effect on our citizens.

The third concern is the noise level. We believe that the constant noise level proposed will be a definite nuisance and a radical change to the present living conditions. Is it right to ask our constituents for forfeit their peace and quiet?

With all the above problems not being addressed, it has caused stress and anxiety to the northwest neighborhood of Conneaut Township.

Lastly, there is a most definite and substantial loss of property value. Who would want to live next to this facility? Property values will decrease.

In conclusion, we feel that our constituents have very legitimate and honest complaints. These issues will have to be addressed before we can support such a large construction project. Without having these quality of life concerns addressed, it is unfair to our constituents to give our support to you.

Furthermore, we understand that there is already an alternate route available, which is fully owned by Penelec. That route already comes directly from Lake Erie, and would go to the very same location. That route is much shorter and would be less costly and less offensive to Erie County – especially our citizens. That route would not interfere with the homes and lives of our constituents. We hope that this idea will be researched, explored and utilized. CTS 2

As the legal Representatives of Conneaut Township, we believe we have a responsibility to withhold our support until these concerns are addressed for the citizens that we represent.

Daniel G. Tercho, Chairman

Sarah A. McCabe, Supervisor

Gregory D. West, Supervisor

Tuesday , May,17,2016

Douglas Lavery
[redacted]

Good evening council members,
My concerns are about a company called ITC, which is planning to install the project called , The Lake Erie Connector.
1000 MW. Bi-directional High Voltage Direct Current (HVDC)
Building a convertor Hall on Lexington Rd , Girard,PA. Conneaut Twp.
My concerns and others living in this rural setting are

1. Has a environmental impact study been received from ITC | DL12

2. Has a lose of property values study been done for local residents close to the convertor hall | DL4

3 . The water table in our area is 13' deep and very high quality
If one of the scheduled connection vaults is placed in the area the water flow and quality will be destroyed. The vaults are 10'x10'x30' with 1.5' of coverage | DL10 & DL2

4. Residents with in the convertor hall area will most definitely loose tremendous property values on their homes along with the country living we are associated with will be disrupted.
This local community neighborhood which has a standard of owner pride will be lost. | DL4

5. The sound effects from the convertor hall cooling fans that we have been told will produce 50 + decibels will undoubtedly annoy residents , pets & natural wildlife
The heat generated from the cooling fans will change the flight patterns of natural birds
This will definitely change the daily sightings of the eagles / blue heron and other fowl. | DL5

6. Health effects or quality of life from such a high DC/AC buried cable being installed in the ground of each homeowner or neighbors property.
Which could emit a electric magnetic field | DL3

7. Information from ITC has been basically less than informational but just enough to satisfy the federal government requirements. | DL13

8. Local residents have no local government suppling information, asking for information, or being supplied information from ITC to help tax paying Erie County residents from basically having their country living being destroyed by the installation of the lines and the convertor hall for the profit of ITC, leaving the residents with property that will be worth absolutely nothing and have to deal with for the rest of their lives. | DL14

9. ITC has sold its company to a Canadian power company called Fortis for 11.3 Billion dollars. Fortis has sold 19.9% of it holdings to a Singapore power company GIC for 1.3 Billion dollars. I fell neither of these companies will care about the Americans this | DL11

will affect.

10.The Lexington rd. site will most definitely be put on a terrorist hit list because Penelec will supply 12 American states including Washington DC from this sub station and it will supply Canada with unknown areas of power. DL15

In closing the residents of Lexington Rd need the councils help to protect them from this project that has no concerns for the people or the enviroment it will affect. Big money will be made from the production of this electric but none of it will help Erie County or the United States because the owners are from Canada and Singapore.

Websites for information
lakeerieconnector.com

ITC Lake Erie Connector Project
Comment Receipt

Refers to Comment Placed on July 5, 2016

Name	Jerome Skrypzak for the SONS of Lake Erie Fishing Club
Address	
Email	
Phone	
Subject	Lake Erie Cable Connector
Message	On behalf of the over 3000 members of the SONS of Lake Erie Fishing Club I would like to make the following comments. We are greatly concerned by the proposed blasting in Lake Erie to be undertaken during the construction and the potential harm it will impose on the fishery. We are also concerned with the trenching to be undertaken on the Lake bottom and the amount of toxic sediments that could potentially be released by this process. We are also concerned with the amount of thermal pollution that will be generated from the cable when finally completed. Finally our concern is for the property holders along the path of the cable and the potential of adversely affecting the ground water and their wells. There is a right of way that is available on Penelec property and should be used rather than disrupting residents along the currently proposed path We strongly feel that this project should be put on hold until all of the possible negative issues are resolved. Yours truly, Jerry Skrypzak President SONS of Lake Erie
Site	http://www.lakeerieconnectorea.com
Date/Time:	July 5, 2016 6:31 pm

SONS1
SONS2
SONS3
SONS4
SONS5

Pennsylvania Fish & Boat Commission

established 1866

Division of Environmental Services
450 Robinson Lane
Bellefonte, PA 16823
Phone: 814-359-5140
Email: daniryan@pa.gov

June 29, 2016

Brian Mills
Office of Electricity Delivery and Energy Reliability (OE-20)
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585
E-mail: Brian.Mills@hq.doe.gov
ATTN: LEC Draft EA Comments

Dear Mr. Mills:

This letter is in response to the a request dated June 3, 2016, from the Department of Energy in Washington, DC, in regards to the Lake Erie Connector Project Draft Environmental Assessment (EA). The Pennsylvania Fish and Boat Commission (PFBC) appreciates the opportunity to comment on the draft EA. The PFBC has had the opportunity to review the EA, and offers the following comments to quantify and clarify the impacts associated with the proposed project:

PFBC 1 • Section 2.4.5.1, Aquatic Transmission Cable Installation in Lake Erie Segment, Horizontal Directional Drilling Method: This section references a Drilling Fluid Management Plan (DFMP). The DFMP should be provided and elaborated upon in the Environmental Assessment in order to minimize any impacts of inadvertent returns. In addition, the DFMP should include contacting the appropriate authorities should a release occur, specifically, PFBC law enforcement at 814-337-0444.

PFBC 2 • Section 5.1.4.1, Effects of Construction, Fish: This section mentions the side-casting of rock associated with blasting and/or excavation, and that this material may provide an increase in spawning habitat area after construction activities cease. Please elaborate upon the configuration, size, and location of this material in order to show its benefit to fishes, in lieu of simply side-casting this material beside the excavated trench. The PFBC suggests that this material be utilized to create fish habitat by configuring suitable sized debris in piles to create an array of suitable topography as habitat for fishes.

PFBC 3 • Section 5.1.4.1, Effects of Construction, Fish: The PFBC agrees that the applicant has proposed several efforts to avoid and minimize impacts to fish habitat, however, it appears that the project construction schedule cannot avoid in-water construction in sensitive habitats and timeframes. In particular, the proposed project intends to blast and trench in potential fish spawning habitats (generally, waters < 20 feet deep) during spawning timeframes of major Lake Erie gamefishes such as yellow perch, smallmouth bass and walleye (generally, April through July). The PFBC suggests that the size of the proposed trench in waters less than 20 feet deep, as well as the area impacted by side-casted material in waters less than 20 feet deep, be calculated and added to the EA as permanent impacts to fish spawning habitat.

PFBC 4 • Section 5.1.4.1, Effects of Construction, Fish: The PFBC agrees that the applicant has proposed several efforts to avoid and minimize impacts to fish by underwater blasting, and that scientific literature

PFBC 4 suggests fish mortality as a result of underwater blasting is highly variable. The PFBC recommends that anticipated fish mortality be investigated and included as part of the EA. The PFBC suggests that hydroacoustics and/or sonar be utilized to determine seasonal fish density in proximity of the proposed time and locations of blasting, and to estimate threshold distances of expected fish mortality. The resulting numbers should be used to predict fish mortality within the proposed blasting area and the EA should be amended to include this information.

PFBC 5
- Section 5.1.5.1, Effects of Construction, Eastern Sand Darter: The information presented in the EA related to eastern sand darter impacts is not currently approved by the PFBC as the applicant is still in consultation with the PFBC about the proposed impacts. The EA presented average eastern sand darter abundance and assumed that the available trawl data across years and localities is representative of the eastern sand darter population at the site of construction. In addition, the average eastern sand darter abundance presented does not address bias inherent with the survey design or gear type or the potential for an abundant year class to be present during the construction period was also not considered. The PFBC suggests that any reference to numbers or abundance of eastern sand darters in the project area be removed from the EA until consultation with the PFBC regarding eastern sand darter abundance within the project area is finalized.

PFBC 6
- Section 5.1.4.3, Effects of Operations, Maintenance and Emergency Repairs: Various fisheries management agencies have tagged, and are currently monitoring, movements of various Lake Erie fishes through hydroacoustic transmitter and receiver equipment submerged in Lake Erie. More information about these telemetry projects can be found at the following website: http://data.glos.us/glatos/. The PFBC recommends that the applicant contact Chuck Murray of the PFBC at 814-474-1515 to determine the location of the proposed electrical lines in relation to hydroacoustic monitoring equipment and any associated interference(s) to telemetry studies by the proposed project. The EA should be updated to include any foreseen impacts to these telemetry studies as a result of the project.

PFBC 7
- Section 5.1.4.3, Effects of Operations, Maintenance, and Emergency Repairs: This section indicates that some aquatic species may be sensitive to electromagnetic fields (EMFs). Please indicate which species of fishes would be most sensitive to electric fields, including salmonids and sturgeons, and discuss if scientific literature suggests EMF thresholds for these species. Please compare detectability thresholds for EMFs for each species indicated above and the proposed EMF levels that will be emitted by the project, and any potential adverse impacts to these fishes. Please indicate and further elaborate on avoidance and minimization practices (i.e., proximity to sensitive aquatic resources, burial, cable shielding, etc.) being implemented for the project to avoid and minimize any potential adverse impacts of EMFs to fishes.

PFBC 8
- Section 5.1.12.1, Effects of Construction: The applicant should contact WCO Tom Burrell of the PFBC at 717-705-7838 to determine if an Aids-to-Navigation (ATON) plan is warranted for this project. In addition, and in order to compensate for temporary losses in boating and angling opportunities due to the proposed exclusion zone around construction activities, elaborate upon ways to mark the locations of the habitat described in *Section 5.1.4.1, Effects of Construction, Fish* above (i.e., the second bullet point from the top discussing side casted material) so anglers can utilize this man-made habitat to target gamefishes.

The PFBC thanks you for the opportunity to comment on draft EA. Should you have any questions, feel free to contact me at the number listed above.

Sincerely,

Daniel Ryan
Fisheries Biologist, PFBC
Watershed Analysis Section
Division of Environmental Services

ITC Lake Erie Connector Project
Comment Receipt

Refers to Comment Placed on June 30, 2016

Name		Douglas Lavery
Address		Withheld to protect the privacy of commenter
Email		Withheld to protect the privacy of commenter
Phone		Withheld to protect the privacy of commenter
Subject		ITC has sold out
Message	DL1	Mr. Mills, Itc's application states that they are not owned by any foreign companies in Section 1. at the time of the application that was a true statement. ITC has sold it's entire company to a Canadian power company called Fortis for $11.3 billion. Fortis has sold 19.9% to a Singapore company GIC for $1.3 billion. When this project starts it will be owned by foreign business companies. I thought America was trying to become independent of foreign energy suppliers. Please review this information on the ITC and Fortis websites. Four species of fish that are common to the Erie, PA shores will be also effected by the buried lake lines. Erie, PA fishing is a great income and sport for this local area. If blasting the bedrock occurs and even burying the lines will cause a disruption to the aquatic life which will be disastrous to local sport fishing. The rise in water temperatures where the lines are buried will cause issues with the four or more species of fish identified. The four species of birds identified, one being the bald eagle which lives within 1/2 mile of the proposed convertor hall site will definitely have its flight pattern effected by the noise and heat from the hall cooling fans. The other birds will also be effected equally along with the bats which are slowly disappearing from America. Local residents and pets that will have the hall built with in site and sound will be affected as the wildlife will be. Water tables will be disrupted from the installation of the lines and vaults that are schedule to be installed in their front yards. ITC's land agent will not identify where the vaults are located because ITC knows there is or will be a severe water issue for residents when completed. Property values have not addressed,health issues have not been identified, quality of rural living will be destroyed by the construction of the hall. There are many residential issues that ITC has conveniently avoided to answer. There is a alternate route available which is owned by Penelec that goes from the West sub station to the lake, this would not involve any residential properties but ITC says Penelec does not want it on their land and also wetland issues. The current route has wetlands thru it and it does not seen to be a problem. The Penelec route should be used and the wetlands relocated which has happened numerous times in this area for commercial malls etc. Please check into how the Canadian power will be produced, when I asked if it
	DL6	
	DL9	
	DL5	
	DL10	
	DL3	
	DL16	
	DL17	

DL17 | was hydro only the ITC answer was NO. It will be supplied by different producers? I thought it was to be all hydro and green. I have some information which I will mail to you. The information is a letter to ITC from Conneaut Township supervisors stating they will not give approval of any further movement on the projects until all the concerns from the residents located close to the hall are resolved. Water,loss of property values, noise levels, quality of life, health concerns all related to the construction of the lines, vaults and the hall. Please put a halt to the approval of ITC's application because of the sale to foreign companies and the people ,wildlife, aquatic and pets this project will affect. Thank you

Site http://www.lakeerieconnectorea.com

Date/Time: June 30, 2016 12:50 am

6/29/2016

Mr. Mills,

In response to the ITC/Lake Erie Connector Project.

DL1 Section 1 of the permit ITC states they are not owned by any foreign companies, at the time of the application. This was a true statement. ITC has sold to a Canadian power company called Fortis, for $11.3 billion. Fortis has sold 19.9% to a Singapore company GIC for $1.3 Billion. This alone causes concerns about the USA being supplied electricity from foreign owned companies. The sale should be completed, according to the Fortis website, by the third quarter of 2016. When the sale is completed ITC has no stock in this project.

DL2 The Conneaut Township supervisors have submitted a letter to ITC/Mike Ivester that until the concerns of local residents in the future convertor hall location have a guarantee that the water table will not be disturbed and what health issues can happen from such large buried power lines being located in the front yards will or possibly have on residents the supervisors can not approve this project to continue forward.

DL3 Some other local residents concerns are loss of property values, quality of life living next to the hall and last the impact from the cooling fans on residents, pets and wildlife.

I have included a copy of the supervisors letter to ITC.

My concerns which I brought to Conneaut Township, Erie County Council, Erie County Executive Cathy Dahlkemper , State Representative Parke Wettling among others are facts stated in the application.

DL6 The possible blasting of the bedrock which goes 2000 feet into the lake from the shore, will definitely kill many aquatic life species, along with the four local fish that will have some affects for long term from the buried lines.

DL7 Another concern is where the lines are to be buried the water temperatures will rise 2.3 degrees. The Erie area is a fishing community and fishing is a year round benefit to the local economy. The disruption during construction and after will leave a long term negative effect to local fishing business. There will be an effects on algae growth.

DL9 Local birds that the hall will affect should be considered from the local American Bald Eagle which has a flight path over the future site. This family of Eagles have been local residents for 20 + years and disrupt their life along with local residents is a shame all for a foreign owned power company. The other birds in the report should also be reviewed even down to the bats, which are losing population in America.

DL5 The reason for concern is the multiple cooling fans that will be installed in the hall will produce a decibel of 50+,and unknown heat generated into the atmosphere. That high of a constant decibel will be heard by humans,dogs,birds and wildlife. Please save our community from this great disturbance. The heat generated will cause unknown atmosphere issues.

DL10 On a personal concern from having to live so close to this foreign owned power business, the local water table is nine feet to thirteen feet deep, The vaults they propose to install are 10'x10'x30' with 1.5' of ground cover and a 6"+ gravel base. That puts them in the water table which if disrupted could possibly go away. I have asked the land agent repeatedly where the location of the vaults are and his comments are they have not be established. I feel a project of this size and being pushed this fast, an important detail like vault locations should have been decided long ago. ITC knows that PA DOT has told them about weight limits on local roads. The application states there are 15 to 16 vaults on the land route. The local community is not being given the whole truth about this project.

May 21st,2016 Erie County Councilwoman Carol Loll requested ITC come to the Erie County Courthouse for a public meeting. I attended and asked all and more of the issues stated above

Unfortunately ITC's Mike Ivester,Andrew Jamieson nor Steve Halmi were able or were willing to answer these questions.

DL1 February 2016 the Supreme Court put a stay on the EPA, closing coal powered electric producing plants down. Their concerns were that closing plants without given them a chance to meet emission standards is making America electric weak. In a era when the USA wants to not be energy dependent on foreign companies, we are considering letting one build in America and produce power in Canada to be owned by foreign business.

I asked ITC if the power to be supplied was produced by hydro and the answer was NO.

In closing I ask of the Dept. of Energy and the Whitehouse to review the future owners of ITC and put a stop to this project. Review the way the power will really be produced.

Give the American power companies a chance to meet emissions and save American jobs before suppling other foreign companies with work opportunities funded by the American public who buy electricity.

Please delay or stop the approval of ITC's application to move forward.

Thank You

Douglas Lavery

[redacted]

Included Conneaut Township's letter ITC

Concerns addressed to Conneaut Township and Erie County Council

July 22, 2016

Regulatory Branch
U. S. Army Corps of Engineers
Pittsburgh District
1000 Liberty Avenue
Pittsburgh, PA
15222-4186

Attn.: Michael Fodse

Ref: CELRP-OPF2013-1434

Dear Mr. Fodse

This letter is in response to the public notice, 16-21, dated June 24, 2016, from Chief, Regulatory Branch, Scott A. Hans, Army Corps of Engineers. We would like to make known our response to the proposed activities of ITC Lake Erie Connector Project.

In our small community of Northwest Conneaut Township, which will be in close proximity to the site for the proposed ITC Convertor Station, there are twenty-one (21) properties or partials that will be affected in one way or another by this project. Of the twenty-one households, four (4) properties have made or anticipate land sale/agreements. Four more are in negotiations for easement passage for the underground cable. That leaves thirteen properties that will have to live next to, within sight, within hearing distance, or have property near or bordering the ITC property. All the homes are in a relativity tight rural agriculture setting. There is no concern for the health, safety, welfare, responsibility for damage or compensation by any entity to anyone of the thirteen properties. MA1

The permit process mentions the concern for wetlands and rare shrubs; concerns for endangered species, fish, wildlife, and historic places. Section no. 4 paragraph of the letter references unavoidable impacts to Waters of the United States. Additionally, no. 5 mentions the Encroachment Permit Water Quality Certification. Finally, no. 12 section gives residents a chance to respond.

Our neighborhood has been proactive in a timely manner, gathering information, attending meetings with ITC officials, township and county representatives. We are proud to say that we have gained the support of Conneaut Township Supervisors, our first line of defense in the American form of democracy known as constituent support. They support our legitimate neighborhood grievances for our drinking water. We have also gained the support of the S.O.N.S. of Lake Erie, a 3000 member sportsmen's organization concerned about our drinking water. Pollution of our water will cause run off issues downstream and eventually effecting trout waterways. We are located on one of the top aquifers for residential water use in Conneaut Township. All drainage goes directly into Lake Erie. MA2

Our residents have been respectful, courteous and have communicated our expressed concerns for quality of life issues. Furthermore, we are concerned about the high levels of noise. Can anyone guarantee one hundred percent that the high electromagnetic wave disturbance will not damage the human body or cause interference to electrical appliances? Another legitimate complaint is the possible pollution to our drinking water, not only the construction, but the maintenance and inspection in future years. Lastly, is the physical, aesthetic, and radical change to our rural way of life. What compensation can address that fact? These issues are a major source of anxiety to this neighborhood. The problem of noise disturbance, sight, drinking water and bodily affects from electromagnetic waves, and property devaluation all remain unanswered. Each of these dynamic forces of change will affect each property in MA3 MA4 MA3

a different way. Honesty along with responsibility for a project of this magnitude have been lacking. Honesty will be exemplified in the admission that these dangers do exist. Responsibility will prevail when a commitment is shown by a bond to protect the community for the project that is portrayed to be so safe. Without these necessary steps, one can assume that this project speaks only of large profits for foreign investors at the expense of a small rural community. Who will protect us from these unknown environmental changes, especially when the owners and board of directors live in foreign countries, and we have no knowledge of who they are? This community, our life style and our property are the necessary resource to achieve the goal of the investors of this valuable project. Now is the time for action by ITC officials, to step forward and take responsibility for the huge change that will take place, and notify all government agencies of their commitment to the community by accepting responsibility for any damages addressed to the above concerns.

MA4 In conclusion, public notice no. 16-21 expresses concern for many important issues like wildlife, fish, shrubs, wetlands, and historic sights. Notwithstanding, the most important resource, human life, has not been given as much attention. Human life is a commodity that is priceless. This should be the first and primary concern of this project. Therefore, it appears that since the most important aspect of this project has been ignored, the basic quality of life that makes this neighborhood a nice place to live has not been addressed properly. Notwithstanding, is the fact, that we are being asked to change our life style without question and to accept a great change. This request of change is without any consideration for our family or property value. How can a change of this proportion take place without consideration for the most important capital in any project? It is irresponsible to allow this travesty of justice to occur. All of the thirteen property owners are affected, in one way or another, not just the land that will be traversed. Those destructive forces as mentioned above are a threat and will affect our environment. These issues must be addressed for each property owner before any permits are granted. However,

MA5 most all of the above concerns could be averted, by following the Conneaut Township Supervisor's alternative route plan; the direct power line route from Lake Erie to Conneaut Township to the Lexington Road Sub-Station. That route is presently owned and operated by Penelec. That right of way goes directly to the site where the convertor station will be located and will have the least impact in Erie County. Penelec will benefit from the ITC project. Penelec has the necessary land for this project. Their direct right-of way is approximately one mile shorter than the highway route through our community of homes. Furthermore, their direct route will have less impact on the local ground water, local feeder stream and storm water runoff. Penelec, ITC, and the foreign investors should use their own land and be a good neighbor in Erie County. That compromise will protect and preserve the Lake Erie Watershed and our drinking water.

Sincerely,

Theodore Loepp
Shirley E. Loepp
Victor Wheeler
Sandra Wheeler
Rodney Lash
Trustee
Steve Rohrer
Shelley Hayhall
Edward Fayhall

July 22, 2016

Address & Phone

- Signatures on July 22, 2016 Letter to Army Corps of Engineers

Mr. & Mrs. Victor Wheeler---R. D. #1 Girard, Pa. 16417-814-756-3894

Mr. & Mrs. Ted Loep---8840 Lexington Road, Girard, PA. 16417-814-7564383

Mr. & Mrs. Rodney Fish---8760 Lexington Road, Girard, PA. 16417-814-756-0878

Mr. & Mrs. Edward Faytak's--- 8751 Lexington Road, Girard PA, 16417-814-756-4720

Mr. & Mrs. Michael Berry---11170 Bowmantown Road, Cranesville, PA 16410-392-4102

Mr. Steve Omer------Bowmantown Road, Cranesville, PA. 16410

7/14/16
Farm & Dairy

We only have so much groundwater

By Gail Prunty

Gail Prunty

The Dirt on Conservation

When you see the earth's surface on a globe, all of the blue gives the illusion that we have water o'plenty!

But in reality, once you "hold the salt" water in oceans (97 percent) and "put the freeze" on water trapped in ice caps and glaciers (2 percent), suddenly 99 percent of the water on Earth is not directly usable by humans.

Our remaining fresh water supplies are either stored beneath the ground (in soil or fractured bedrock) or in surface water (in streams, rivers, and lakes). Of this, a mere 1 percent of fresh liquid water that we can use and which our survival depends, more than 98 percent exists beneath the land's surface.

Water underground. Groundwater is water found below the land's surface and fills the spaces and cracks between soils, sand grains and rocks.

If this saturated area, or zone, is capable of storing and yielding groundwater to a well, it is called an aquifer.

Aquifers are composed of permeable sediment or rock of which Ohio has three major types: sand and gravel deposits, sandstone bedrock, and carbonate bedrock (limestones and dolomites).

Here in the Heartland, our average precipitation is between 30 to 44 inches per year. As this rain and snowmelt soak into the ground, most is taken up by plants or soil, while some slowly seeps into the layers of pore space.

Replenishing aquifers. Approximately 3-16 inches of Ohio's annual rainfall replenishes our aquifers in this process called "recharge." The top of this saturated zone is known as the water table and water tables vary in depth — rising during wet seasons and falling deeper during dry seasons. Lakes, rivers, streams and ditches also recharge aquifers.

As part of the water cycle, groundwater does not remain stagnant underground, but moves very slowly from upland to lowland ... sometimes only a few feet each year.

In Ohio, we are fortunate to have abundant groundwater resources. Approximately 45 percent of Ohioans depend on groundwater for their homes, businesses, schools, industries, farms and drinking water supplies.

Collectively, we consume more than 1 billion gallons of groundwater each day. Yet our connection to groundwater's significance seems to be buried deeper than the water itself.

Fragile. Groundwater is an especially fragile resource that is very slow-moving, mostly unseen, sluggish to recharge, and incredibly difficult to clean. So it's incredibly surprising how ill-equipped and unarmed we are in the realm of groundwater protection.

The risks of groundwater contamination and the price of cleanup are far greater than most communities could ever imagine or afford. Groundwater contamination occurs when man-made or even naturally occurring materials seep into groundwater supplies and render it unsafe and unfit for human use.

Examples of potential pollutants include household hazardous wastes, leaking underground storage tanks and landfills, failing septic systems, runoff including fertilizers, pesticides, animal wastes, chemicals and road salt, and naturally-occurring arsenic, lead, methane, radon and other elements or gasses.

Protecting groundwater. As homeowners and residents, we can and must protect and preserve our groundwater.

The first and most critical step is that we strive to be "well educated."

Over the past 30 years, the U.S. Centers for Disease Control and Prevention found an increased proportion of waterborne disease outbreaks

(Continued on Page A19)

Farm + Dairy
Part 2-
7/14/16

(Continued from Page A18)

associated with private household drinking water supplies, with the majority of documented outbreaks caused by groundwater.

While routine testing ensures state and federal standards in public water supplies, it is the primary responsibility of the individual well owners to ensure that the water drawn from their wells is safe.

In Ohio, more than 700,000 people have their own wells. Routine monitoring of your water well is extremely important, not only to determine the current water quality, but also to provide a baseline of quality and the ability to detect changes in future water tests.

The Ohio Department of Health recommends that private water system owners test total coliform bacteria, E. coli, nitrates, and arsenic annually as well as any time there is a change in taste, odor, or appearance of your drinking water.

In addition to your water chemistry and bacteria tests, your annual water supply maintenance check should also include a static water level check, a water yield test, and a visual inspection of the well cap and cover.

Knowing the drill. If planning a new or replacement water well, contact your local health department to begin the process of obtaining a well permit. A lot evaluation is required by a registered private water system contractor.

The Ohio Department of Health requires every well to have a permit prior to being drilled. Private water system permits are good for one year.

Within this timeframe, the installation or alteration must be performed, the system must pass a final inspection, and the water supply must pass a water test through a state-certified water testing lab.

Learn more. For more information on water well maintenance, visit odh.ohio.gov, epa.ohio.gov/home, your local health department, the Ohio Watershed Network (ohiowatersheds.osu.edu), or your local Soil and Water Conservation District.

(Gail Prunty is the education/communications specialist for the Geauga Soil and Water Conservation District.)

PETITION TO STOP THE ITC LAKE ERIE CONNECTOR PROJECT CONVERTOR HALL LOCATION

The goal of this petition is to prevent the Lake Erie Connector project proposed for the Lexington Road site. The impact of this project to local environment is detrimental to our local wildlife , ecosystem , to say nothing to the damage to our local water table. We currently enjoy our local eagle's nest and many blue heron among other wildlife. What will happen to those? P1

We , the local residents have great concerns over the fact that we have had no access to any in depth environmental impact studies that have been conducted by the company (ITC) There are great concerns regarding the health effects of the constant noise from the cooling fans located in the convertor hall.
The long term health effects from having high AC/DC buried cables in our front yards is unknown. To say nothing for the effect the entire project will have on our property values. P2

Please sign this petition if you agree.

Page #

Print Name & Phone #	Print Address	Signature
DAVID LAVERY 814-756-3845	8675 LEXINGTON RD GIRARD PA 16417	
Patricia Lavery 814-756-3845	8675 Lexington Rd. Girard, PA 16417	
TONY TAYLOR	8780 LEXINGTON Rd GIRARD, PA 16417	
SANDRA WHEELER	R.D.#1 GIRARD, PA 16417	
VICTOR Wheeler	R.D.#1 Girard, PA. 16417	
JOHN BROWN	8541 LEXINGTON RD GIRARD, PA.	
Adam Muth (315) [illegible]	8519 Lexington Rd Girard Pa 16417	
Gerald Keller	8519 Lexington Rd Girard, PA.	
Jessica Muth	8519 Lexington Rd Girard PA	
~~LEE KELLER~~ ~~Lee Keller~~	8519 Lexington Rd Girard, PA	
LEWIS SHELDON	8471B LEXINGTON RD GIRARD, PA. 16417	
SUSAN M Sweeney	8353 Lexington Rd girard PA 16417	
Randall M Sweeney	8353 Lexington Rd girard PA 16417	

Page #

Print Name & Phone #	Print Address	Signature
Ryan Cooper	8353 Lexington Rd Girard PA 16417	
Stacey Cooper	8353 Lexington Rd. Girard, PA 16417	Stacey Cooper
Timothy Schrum	8150 Lexington Rd. Girard, PA 16417	
CAROL SCHRUM	8150 LEXINGTON GIRARD PA 16417	
Josh Kovatch	8100 Lexington Girard PA 16417	
Kenneth & Joyce McPeak	11033 Springfield Rd. Girard, Pa 16417	
David & Kimberly Lovell	4523 THOMAS RD McKean PA 164	
Joshua Fish	8760 Lexington Rd Girard PA 16417	
814-397-3347 Shelby Taylor	8751 Lexington Rd GIRARD PA 1641?	
Brandi Fightal 814 449 3633	35 W. Main Street Albion, PA 16401	
814-397-5982 Ryan Fightal	35 W Main Street Albion PA 16401	
Adam Fightal [illegible] 814-440-9349	8751 Lexington Rd Girard PA 16417	
Benjamin Blevins	10175 Elm St Lake City PA 16423	

Page #		
Print Name & Phone #	**Print Address**	**Signature**
Shea Sedler 814	10684 Springfield Rd Girard PA 16417	
Anthony Humanski	10027 Sampson Ave Girard PA 16417	
ED TAYLOR 814 423 7631	8751 LEXINGTON RD GIRARD PA 16417	
TIM Hannah	8777 Lexington Road GIRARD PA 16417	
April More	8777 Lexington Road Girard PA 16417	
Rick Bliss	8830 LEXINGTON RD GIRARD PA	
SHIRLEY LOEPP	8840 LEXINGTON RD GIRARD, PA 16417	
Theodore Loepp	8840 Lexington Rd Girard, Penna	
Kathy Campbell	8873 Lexington Road Girard PA 16417	
Lloyd Bortzer	8873 Lexington Road Girard PA	
RONALD STORTEVANT	8855 LEXINGTON RD GIRARD, PA 16417	
Mary Ann Lavery 814-756-4853	8651 Lexington Rd Girard PA 16417	
DOUGLAS LAVERY 814-756-4853	8651 LEXINGTON RD GIRARD, PA. 16417	

July 22,2016

Micheal Fodse
US Army Corps of Engineers, Pittsburgh District
1000 Liberty Ave.
Pittsburgh, Pa. 15222-4186
Re: Application No. 2013-1434

Dear Mr. Fodse,

I have concerns bout the HVDC transmission line being installed underground in front of our property where we reside.
We were approach by Wyatt Price a representive from ITC. In the conversation we were told that all of our trees would have to be remove
because the transmission line needs a substantial amount of water to keep the transmission line cool. Since the line needs substantial
amount of water. What will be the impact on the streams, wetlands, and our wells? Also there are springs close to the surface that supply
water to ponds and wells which will be destroyed from the insulation of the transmission line. Would this cause unwanted flooding? PB1

Penelec has an exstising right away which would be better suited for this transmission line. This would be less of an impact on wetlands
streams and the water table that supply water to are wells. There are many concerns and questions from property owners affected by this HVDC
transmission line. We are asking if a public meeting can be held on this matter. PB2

Sincerely,

Pat Bartosek

barpcwin@aol.com

Fodse, Michael M LRP

From: Almeter, Katelyn <Almeter.Katelyn@epa.gov>
Sent: Monday, July 25, 2016 7:49 AM
To: Fodse, Michael M LRP
Cc: Martinsen, Jessica
Subject: [EXTERNAL] LRP 2013-1434

Good morning,

EPA has reviewed the public notice and application for ITC Lake Erie Connector, LLC and is providing the following comments:

* For the PFO wetland establishment/ restoration areas, 5 years of monitoring may be insufficient due to the amount of time associated with establishing a mature forested system. EPA recommends at least 10 years of monitoring. | EPA1

* Furthermore, performance standards should include criteria aimed at describing growth of the tree stratum in the mitigation area (i.e. annual average increase in height or DBH) to demonstrate that areas are on a trajectory of being a forested system. Woody vegetation should show a positive increase in height at the end of each year during the monitoring period. | EPA2

* Additionally, EPA recommends including vegetative performance standards that includes a 5% invasive species action level and no greater than 33% total coverage by a single vegetative species to ensure a diverse community. | EPA3

* The applicant should provide greater detail on the construction details, treatment expected, and possible maintenance anticipated for the specific biofilter wetland areas. | EPA4

Thank you for the opportunity to review. If you have any questions please feel free to contact me at 215-814-2797.

Thanks,

Katelyn

Fodse, Michael M LRP

From: Kaleen <KaleenMarino@yahoo.com>
Sent: Saturday, July 23, 2016 1:16 PM
To: Fodse, Michael M LRP
Subject: [EXTERNAL] CELRP-OP-F 2013-1434

4561 Townline Road
Girard, Pennsylvania
July 23, 2016

Michael M. Fodse
Regulatory Branch
US Army Corp of Engineers
Pittsburgh District
1000 Liberty Avenue
Pittsburgh, Pennsylvania 15222-4186

Dear Mr. Fodse:

I am registering my concerns for the application numbered CELRP-OP-F 2013-1434, and I am requesting a public hearing to discuss the project.

The company making the request, ITC, has made numerous efforts to discuss the project. I appreciate their openness to questions. Still, I would like the opportunity to have non-biased engineers and individuals discuss the project, answer my questions, and hear any remaining concerns.

I worry about the negative impact this project may have on Lake Erie in both the short term and long term. One fear is that while laying the line the polluted sediments on the lake's floor will be reintroduced into lake waters. I also worry that there may be long term effects because of the heat output from the line. Will even a slight temperature increase in lake water have consequences to flora and fauna, particularly the fresh water fisheries? KHM1 KHM2

I have questions how this line will impact my life directly since I live on the proposed route and own three other properties along it. The least of my concerns is the aesthetic loss of centuries old trees which will harm my property values. My husband and I are working to restore a concord grape vineyard. I question how the line will impact our efforts. I wonder how the heat dissipation will affect our road in the winter. Most concerning to my heart are the health risks to my children living and growing near the line. KHM3

If Pennsylvania and the United States governments believe the impact on Lake Erie will be worth the risks, I wonder why ITC chose this specific route. Is it because it makes the least environmental impact or is it the most affordable?

Again, ITC has made efforts to answer residents' questions and concerns. I still wish to hear from your experts on these matters. Thank you for your consideration.

Sincerely,

Kaleen H. Marino

Fodse, Michael M LRP

From: Dave Marino <dave@dahlkemperlandscape.com>
Sent: Friday, July 22, 2016 5:34 PM
To: Fodse, Michael M LRP
Subject: [EXTERNAL] Public notice Response to app No 2013-1434 notice 16-21
Attachments: IMG_9042.jpg; IMG_9044.jpg

Mr. Fodse,

I have not heard back from you regarding my previous emails so please let me know you have received them.

Also, I have attached a few pictures of my front yard trees that will be removed due the new Power line. As you can see they protect my house from wind and dust from the dirt road. The power company does not want any large trees to be placed back. Only shrubbery.

Thanks.

--
Respectfully,

Dave Marino, LA

Dahlkemper Landscape Architects & Contractors
1650 Norcross Road
Erie Pa, 16510

P 814.825.3253
F 814.825.0775
C 434.3069

Fodse, Michael M LRP

From: mjordano2@roadrunner.com
Sent: Wednesday, July 20, 2016 6:14 PM
To: Fodse, Michael M LRP
Subject: [EXTERNAL] Notice # 16-21 celrp-op-f 2013-1434

To Whom It May Concern:

I spoke to you a month ago, my complaint is why are they coming on peoples private property when they could have used an alternate route going from the lake shore to Lexington PENELEC substation. We have had our well checked by Moody which we had an excellent report on return of water into our well with no contamination. Our water vain is located between 5 and 6 feet down below ground, our main water supply comes from across the road which is east of our home, if they contaminate our water supply or our well goes dry are they going to purchase our home at market value. We have major concerns about our water supply, if you would like to speak with us concerning this matter, please feel free to contact us at your convenience, thank you for your time. JJ1 JJ2

James Jordano
11185 Springfield Rd.
Girard, Pa 16417

Home 814-774-5358
Cell 814-460-1945

Fodse, Michael M LRP

From: Dave Marino <dave@dahlkemperlandscape.com>
Sent: Thursday, July 21, 2016 10:37 AM
To: Fodse, Michael M LRP
Subject: [EXTERNAL] Public notice Response to app No 2013-1434 notice 16-21

Mr. Fodse,

I am a resident of Girard Township, 2101 Townline Road, and I have several concerns and questions regarding the proposed HVDC line that is planned to be placed within 50' of my home where my family of six reside.

I am disappointed that I have not personally received a letter for the public notice and that I was informed of the Notice from a previous land owner across the street. (James Traut 2342 Townline road) We recently purchased that property also. DM1

First and foremost I'm concerned with the safety and health affects the line would have on my residence and family. DM2

How is the line encased or protected to not emit harmful static electric or magnetic fields? DM3

Is there a recommended distance for buffer zone for residential living space from these types of lines?

I have other questions and will follow up with separate emails regarding each.

Thank you for your time.

--
Respectfully,

Dave Marino, LA

Dahlkemper Landscape Architects & Contractors
1650 Norcross Road
Erie Pa, 16510

P 814.825.3253
F 814.825.0775
C 434.3069

Fodse, Michael M LRP

From: Dave Marino <dave@dahlkemperlandscape.com>
Sent: Thursday, July 21, 2016 10:50 AM
To: Fodse, Michael M LRP
Subject: [EXTERNAL] Public notice Response to app No 2013-1434 notice 16-21

Mr. Fodse,

Here are a few of my other environmental concerns regarding my Land, Trees Water supply and even my house foundations.

What affect with the line have regarding heat, I have heard that it is very hot. Will there be a permafrost affect from the line in the winter? How will that affect mature trees and their dormancy? How will this affect the local wetlands and the amphibians that thrive here? The water shed for a good portion of the proposed line is in a HQ CWF. DM4

Will the line affect my drinking water, we have a shallow well of 12-15' which is plentiful and I'm concerned the trench may redirect the ground water in some way or fashion or the water table be contaminated due to the very sandy parent soil material. DM5

Thanks!

--
Respectfully,

Dave Marino, LA

Dahlkemper Landscape Architects & Contractors
1650 Norcross Road
Erie Pa, 16510

P 814.825.3253
F 814.825.0775
C 434.3069

Fodse, Michael M LRP

From: Dave Marino <dave@dahlkemperlandscape.com>
Sent: Thursday, July 21, 2016 11:04 AM
To: Fodse, Michael M LRP
Subject: [EXTERNAL] Public notice Response to app No 2013-1434 notice 16-21
Attachments: IMG_7433.jpg; IMG_7425.jpg

Mr. Fodse,

We went to a meeting last night at the Girard township building and they are currently discussing with the power company to widen the right of way for tree removals to 50'. My house is an old farm house build before there were automobiles and there are 13 trees along the ROW that will be removed if they move forward with the 50 clear area. They are going to compensate us for the trees (they say they will) but these trees provide a wind break, heat reduction and aesthetic that is priceless. Not to mention that it will reduce my property value and sale potential. The one tree is a hickory that is over 250 years old.

I have recently purchased the property across the street and it has mature forest along the right of way. This forest of 15 acres is possibly some of the oldest 2nd growth in Erie County. Many trees there are upwards of 100' tall and 30 to 40" diameter. I have attached a few pictures. If they cut the trees down 25' form the center of the road I will loose the anchors and support that hold up the taller trees behind them.

DM6

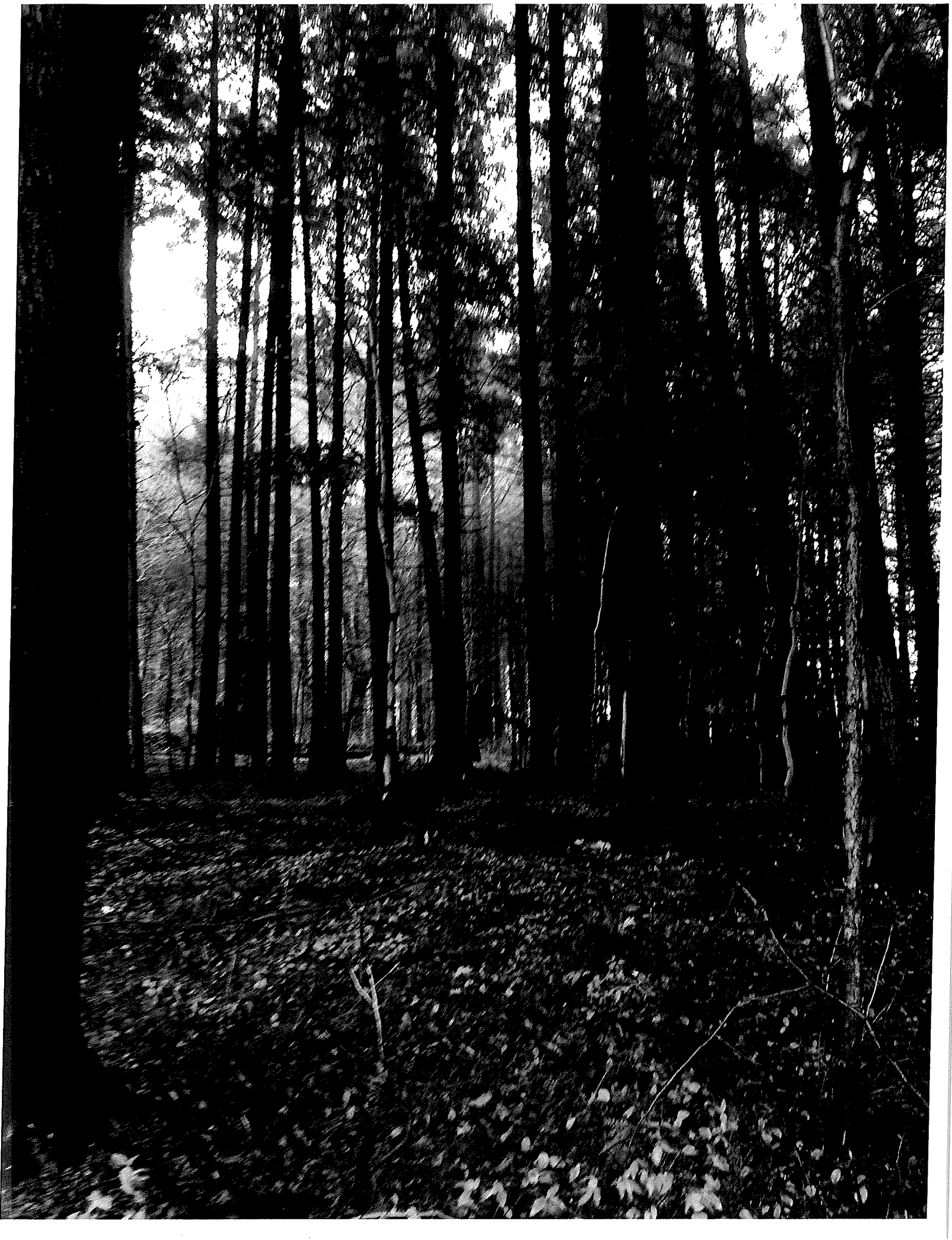
I don't believe they should be able to cut the trees down, they should encase the line so that the trees will not affect them. 90 per cent of roots are within the top 2' of the surface.

--
Respectfully,

Dave Marino, LA

Dahlkemper Landscape Architects & Contractors
1650 Norcross Road
Erie Pa, 16510

P 814.825.3253
F 814.825.0775
C 434.3069



Fodse, Michael M LRP

From: Dave Marino <dave@dahlkemperlandscape.com>
Sent: Thursday, July 21, 2016 11:47 AM
To: Fodse, Michael M LRP
Subject: [EXTERNAL] Public notice Response to app No 2013-1434 notice 16-21

Mr. Fodse,

As you have seen I have several concerns regarding the line location to my properties and the affects it will have an them and the environment. One of the other main issues I have is that there are two existing right of ways or routes that are not being utilized for this line. One is an abandon railroad and the other is a High Power Electric line. Both of these existing routs affect less people than the current route and both are direct routes from the shoreline location to the substation. Most people are in favor of the line being located in one of the existing right of ways but money talks. Our township supervisors said the main reason they want the line here is to strengthen the Power grid of the country and its our duty to allow it. I feel that it is important for green power but everything I have worked extremely hard for will be affected permanently and will not recover in my lifetime due to the loss of aesthetic and sale value. The power grid of the country can be strengthened but it should not be on the backs of citizens who pay taxes and are not getting any compensation for use of the right of way while it destroys their properties and values. They need to utilized one of the other routes that are available. This is a multi billion dollar project, half a million for an other route is a drip in the bucket to them, please have a voice for the working folks of these townships whose properties will suffer.

DM7

Please do not accept this permit based on the availability of other less intrusive routs available for the proposed line. I can send a map of the other more direct routs that are available if you would like.

Thank you for your attention and concern.

--
Respectfully,

Dave Marino, LA

Dahlkemper Landscape Architects & Contractors
1650 Norcross Road
Erie Pa, 16510

P 814.825.3253
F 814.825.0775

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Attachment B

Correspondence with Pennsylvania Fish and Boat Commission regarding:

Eastern Sand Darter - October 5, 2016 letter

Aids to Navigation – September 1, 2016 e-mail

Pennsylvania Fish & Boat Commission
established 1866

Division of Environmental Services
Natural Diversity Section
450 Robinson Lane
Bellefonte, PA 16823
(814) 359-5236

October 5, 2016

Peter Brown
HDR Engineering, Inc.
970 Baxter Boulevard, Suite 301
Portland, ME 04103

RE: Species Impact Review – SIR#43765
Biological Opinion, Threatened and Endangered Species Special Permit
Lake Erie Connector Project
Erie County, Pennsylvania

Dear Mr. Brown:

The Pennsylvania Fish and Boat Commission (PFBC) has reviewed the project plans and biological assessment for the proposed Lake Erie Connector Project. The enclosed document represents the PFBC's biological opinion about the effects of the proposed activity on state listed fish species, and a Special Permit that authorizes incidental take for the Eastern Sand Darter.

Pursuant to the authority under the Fish and Boat Code, 30 Pa.C.S. § § 2102 and 2305, the PFBC hereby grants ITC Lake Erie Connector LLC a Special Permit, as per 58 PA Code 75.4 (1)(iii) to take threatened and endangered species for activities of the Lake Erie Connector Project. This permit authorizes take, which was determined by the enclosed PFBC Biological Opinion to include the state endangered Eastern Sand Darter. The permit conditions outlined in the PFBC Special Permit are mandatory. This Special Permit is valid through the completion of the project, and expires on 31 December 2019. If the in-lake portions of this project are not completed by 31 December 2019, ITC Lake Erie Connector LLC shall reinitiate consultation with the PFBC to re-evaluate project impacts on the state listed species, and to determine the appropriateness of the Special Permit and its conditions contained in the Biological Opinion.

If you have any questions regarding this Biological Opinion and/or Special Permit, please contact me at 814-359-5113.

Sincerely,

Christopher A. Urban, Chief
Natural Diversity Section

cc: Mark Hartle, PFBC
Heather Smiles, PFBC
Dan Ryan, PFBC
PA-DEP, NW Region, Meadville

Enclosure

BIOLOGICAL OPINION

Effects of the Lake Erie Connector Project on the Eastern Sand Darter, Erie County, Pennsylvania

Species Impact Review #43765

May 2016

Pennsylvania Fish and Boat Commission
Division of Environmental Services
450 Robinson Lane
Bellefonte, PA 16823

DESCRIPTION OF THE PROPOSED ACTION

ITC Lake Erie Connector LLC (the Applicant) is proposing to construct and operate the Lake Erie Connector Project (LECP). This project would entail constructing approximately 72.4 miles (116.5 km) of high-voltage direct current (HVDC) electric transmission line that would transfer electricity between Canada and the United States. A detailed description of the proposed construction activities for LECP was provided in a report submitted to the Pennsylvania Fish and Boat Commission (PFBC) and is briefly summarized herein (HDR 2015). Approximately 42.5 miles (68.4 km) of the LECP line is proposed to occur within Erie County, Pennsylvania, United States. In Lake Erie, the cables will be buried in the lakebed to protect against damage from shipping traffic, fishing activity, and ice scour. The shoreline crossings from land to Lake Erie will be completed by horizontal directional drilling (HDD). In Pennsylvania, the HDD will exit the lakebed at approximately 2,000 feet (600 meters) from shore at a water depth of approximately 18 ft (5.4 meters). From the exits of the HDD bores, a trench will be blasted and excavated in the bedrock until softer lakebed material is encountered and jet plow (high pressure water) facilitated burial is possible. The blasting is to occur for approximately 1.4 km and require approximately 130 days.

SPECIES OF CONCERN AND EFFECTS OF THE ACTION

A Species Impact Review (SIR) permit application was submitted to the PFBC through the Pennsylvania Natural Diversity Inventory (PNDI) system for the LECP and the potential presence of fishes listed as endangered in Pennsylvania was identified in SIR43765. These fish species are Lake Sturgeon (*Acipenser fulvescens*), Cisco (*Coregonus artedi*), and Eastern Sand Darter (*Ammocrypta pellucida*).

Potential impacts on the Lake Sturgeon were considered insignificant given the location of the LECP area of operation, the rarity of the Lake Sturgeon, and its use of near shore areas and lotic systems for spawning.

The Cisco is currently considered likely extirpated in Lake Erie, but specimens are occasionally encountered (Coldwater Task Group 2015). The only recent reports from Pennsylvania waters have come from 1986 and 1987. From 1990 to 2014, only 39 specimens were reported from Lake Erie, mostly by commercial fishermen operating in Ontario waters (Coldwater Task Group 2015). At this time, it is unclear if these recent collections represent a Lake Erie remnant stock or strays from Lake Huron. In either case, the rarity or absence of Cisco in the LECP area and the pelagic nature of Cisco, make it highly unlikely that the LECP would significantly affect critical habitat for this species.

The Eastern Sand Darter (ESD) has been observed in the vicinity of the LECP area (HDR 2015, Stauffer et al. 2016, PFBC Lake Erie Research Unit unpublished data) within Pennsylvania. The Eastern Sand Darter is a benthic fish which occupies areas dominated by sand substrate, in which they routinely bury themselves. Survey data collected in Pennsylvania demonstrate the Eastern Sand Darter is present at depths to 29 meters in Lake Erie and in open water during the summer at various depths. This information suggests that spawning may occur at those locations and not strictly in near shore areas; however, this has not been investigated. It appears that the LECP activities will likely encounter Eastern Sand Darter within the construction area. As an initial

SIR response, the PFBC requested that the LECP avoid conducting activities affecting sand substrate in Pennsylvania during the Eastern Sand Darter spawning window of 1 June – 31 August. Construction during these dates was deemed by the Applicant to be essential for the completion of the LECP and the spawning seasonal restriction could not be observed. Consultation with the PFBC was initiated to resolve the conflict and at that approximate time the Applicant subsequently informed the PFBC that blasting was going to be required to bury a portion of the transmission line. The Applicant was asked to develop and present a Biological Assessment characterizing the impacts to the Eastern Sand Darter and estimate the expected take related to the activities of the LECP.

To facilitate the assessment of take of the Eastern Sand Darter within Pennsylvania, the PFBC Lake Erie Research Unit, Fisheries Management Division provided benthic trawl data to the Applicant and their consultant, HDR. These trawl data were the result of PFBC surveys intended to assess percid gamefish recruitment, predominately in the fall and with some data available from summer surveys. A total of 366 trawl samples were considered with 17 trawls having captured Eastern Sand Darters. It is not clear if all of the trawls not having captured Eastern Sand Darters were spatially well distributed or if they occurred in areas with suitable habitat for Eastern Sand Darters. Only the spatial distribution of Eastern Sand Darter capture sites was presented by HDR (2015) within the report figures (Figure 3.1-1, p.15). The capture of Eastern Sand Darters in these trawls was incidental and not the results of targeted searches. From these data, HDR (2015) calculated a long term average density of 0.43 Eastern Sand Darters per hectare and concluded that the PFBC trawl data suggested there was predominantly low recruitment with an occasional stronger year class at approximately 10 year intervals on average. These conclusions were based on the number of trawls conducted that had and had not captured Eastern Sand Darter throughout the percid assessments (N = 366).

A benthic trawl is likely to be more effective at capturing Eastern Sand Darters under certain conditions and representation in the trawls was not necessarily a reflection of abundance in the wild. Eastern Sand Darter are a benthic fish and are known to burrow into sand (Trautman 1981), potentially reducing their recruitment to a trawl when it does not dig into the top layer of sand or when the trawl bounces breaking contact with the bottom. Although the benthic trawl is capable of capturing small benthic fishes, the capture probability for the Eastern Sand Darter, if present, is not likely to be 100% in a benthic trawl. This assertion is contrary to what is implied by HDR.

HDR (2015, p.12) states the following: “Because the present Project will involve blasting in areas where fish occupation will change on a daily and seasonal basis, it is impossible to predict with absolute certainty that no fishes will be impacted detrimentally.” The HDR calculated average Eastern Sand Darter per hectare (0.43) assumes that the available trawl data averaged across years and localities is representative of the Eastern Sand Darter population at the site of the LECP where and when the blasting is to occur. Figure 3.1-1 (HDR 2016) also clearly shows that a portion of the fisheries survey data for the Eastern Sand Darter from trawls has been collected from the vicinity of the LECP. The potential for an abundant year class of Eastern Sand Darters to be present at the site of the LECP and during the construction period were not considered by HDR (2015).

To address these concerns, a more conservative calculation is presented herein to provide an alternative calculation of potential take based on available field data. The average density value

0.43 ESD/hectare, is replaced in the HDR calculations by the density calculated from the most abundant trawl value, 6.69 ESD/hectare (see HDR 2015). A correction factor was not added to address the effect of benthic trawl efficacy for catching Eastern Sand Darters; however, we believe this (6.69 ESD/hectare) is a more realistic representation of the potential population in the project vicinity.

The lethal take evaluation presented by HDR (2015) was focused on areas where blasting will be conducted in conjunction with the sandy habitats preferred by the Eastern Sand Darter and the PFBC agrees with this habitat based approach to assessing impacts. Sand overburden (over shallow bedrock) is present for approximately 578 meters of the project path where blasting is planned. A corresponding area of 7.84 hectares in these sandy areas is estimated to be affected by blasting (HDR 2015). In this area, lethal take of 52 Eastern Sand Darters could be expected (6.69 fish/hectare x 7.84 hectares) using the maximum observed density versus lethal take of 4 Eastern Sand Darter using a long term average density from all of the PFBC trawls and areas (0.43 ESD/hectare x 7.84 hectares)).

Potential impacts from the grapnel run, HDD, jet plow operations, EMF, temperature change, and cable maintenance effects are reported by HDR (2015) to be insignificant in regards to the Eastern Sand Darter. The PFBC is inclined to agree with these assertions in the biological assessment and has not included any estimate of take for these aspects for the Eastern Sand Darter.

CONCLUSION – BIOLOGICAL OPINION

Chapter 75.4 (1) (i) authorizes the PFBC to make determinations regarding the continued existence of a listed threatened and endangered species within Pennsylvania. It is the Biological Opinion of the PFBC, that the proposed project will have no demonstrable adverse impacts on the population of the Eastern Sand Darter within the Commonwealth. This determination is based on the likely severity of species take following an analysis of the project effects. It is our best professional judgment that the proposed project is not likely to jeopardize the continued existence of the species within the Commonwealth. We do anticipate some level of species take; however, we do not expect the level of take to adversely impact the local population of Eastern Sand Darter known from Lake Erie. The PFBC is defining “take” as removing or killing of animals through any means directly or indirectly and in a time frame coincident with (immediate) or delayed following a specific activity.

SPECIAL PERMIT

Amount or Extent of Threatened and Endangered Species Take

This Special Permit allows for the take of 52 Eastern Sand Darter from the area of the LECP during stated project activities. To further avoid and minimize further take associated with the impacts from the proposed development on the Eastern Sand Darter and its habitat, the following mandatory permit conditions shall be implemented. These conditions also include mitigation measures to compensate for take of listed species and conservation measures to ensure the long-term protection of the listed species.

Special Permit Conditions

1. Best management practices to be used:
    a. Erosion and Sedimentation Pollution Control Plan. During the project, the Applicant shall implement an "Erosion and Sedimentation Pollution Control Plan" that shall be implemented as approved by the Pennsylvania Department of Environmental Protection.
    b. Additional impact avoidance techniques for fishes outlined by HDR (2015):
        i. Implementation of confined stemmed bore hole blasting techniques.
        ii. Implementation of appropriate depth of the blast hole collar and charge weight.
        iii. Implementation of appropriate delays between the onset of multiple blasts.
        iv. Implementation of appropriate stemming techniques.
        v. The Project may also use additional impact avoidance techniques such as use of blasting mats, deployment of bubble curtains or measures to mobilize and clear fish from the immediate blast area.

2. Reporting of dead listed species found on the project site: Any dead specimens of listed species (see 58 PA Code Chapter 75) that are found within the project action area shall be clearly photographed and frozen/preserved for PFBC review. In conjunction with the preservation of any dead specimens, the observer has the responsibility to ensure that evidence intrinsic to determining the cause of death of the specimen is not disturbed. The finding of dead specimens does not imply enforcement proceedings pursuant to Section 2305 of the Fish and Boat Code (Act 1980-175, Title 30). The reporting of dead specimens is required within 24 hours to enable the PFBC to determine if species take is reached or exceeded and to ensure that the permit conditions are appropriate and effective. Upon locating a dead specimen, the Applicant or its representatives must notify the Pennsylvania Fish and Boat Commission's Division of Environmental Services, 814-359-5237.

3. Mitigation/restitution for take of the Eastern Sand Darter:
    a. The Applicant has agreed to render the replacement value of the estimated take of Eastern Sand Darters. The replacement value of the Eastern Sand Darter was assessed using best available information and the guidance outlined by the "fish kill manual" of the American Fisheries Society (Southwick and Loftus 2003). After discussion with aquaculturists experienced in raising *Ammocrypta* spp., it was determined that the replacement cost for an Eastern Sand Darter would be approximately $100 per individual. The total replacement value [mitigation] would then be $5,200 (52 ESD x $100 /ESD) for the estimated impacts of the LECP.
    b. Mitigation for Eastern Sand Darters will be included with the PFBC Division of Environmental Services blasting permit assessment. Under Section 2906 of the Fish and Boat Code (Act 1980-175, Title 30), any person using explosives shall make restitution to the Pennsylvania Fish and Boat Commission for all fish destroyed when using explosives. The SIR permit and Biological Opinion is not meant to address concerns for any other populations of fish.

Literature Cited

Coldwater Task Group. 2015. Report of the Lake Erie Coldwater Task Group, March 2015. Presented to the Standing Technical Committee, Lake Erie Committee of the Great Lakes Fishery Commission. Ann Arbor, Michigan, USA.

HDR Engineering, Inc. 2015. Lake Erie Connector Project, Biological Assessment, Eastern Sand Darter. Report prepared for ITC Lake Erie Connector LLC, Novi, Michigan.

Southwick, R. I., and A. J. Loftus, editors. 2003. Investigation and monetary values of fish and freshwater mussel kills. American Fisheries Society, Special Publication 30, Bethesda, Maryland.

Trautman, M. B. 1981. The fishes of Ohio, revised edition. Ohio State University Press, Columbus.

From: Burrell, Thomas <tburrell@pa.gov>
Sent: Thursday, September 01, 2016 8:57 AM
To: Browne, Peter
Subject: Re: Lake Erie Connector Project

Mr. Browne,

Thank you for contacting the Pa Fish and Boat Commission concerning the need for an ATON Plan for the Lake Erie Connector Project. As we discussed based on the current plans as described during our conversation an ATON Plan will not be required at this time. If the scope or design of the project should change please contact my office for further review.

Thomas Burrell, Captain
PFBC, Bureau of Law Enforcement

Sent from my iPhone

On Aug 31, 2016, at 3:22 PM, Browne, Peter <Peter.Browne@hdrinc.com<mailto:Peter.Browne@hdrinc.com>> wrote:

Dear Mr. Burrell:

Thank you for your time today discussing the Lake Erie Connector Project. Pursuant to our discussion, I understand you will forward a summary of your conclusions regarding if an Aids-to-Navigation Plan is required for the proposed project.

Best regards,

Peter

Peter Browne
Senior Consultant, Renewable Energy Services HDR
970 Baxter Boulevard, Suite 301
Portland, ME 04103
207.239.3863
peter.browne@hdrinc.com<mailto:peter.browne@hdrinc.com>

hdrinc.com/follow-us<http://hdrinc.com/follow-us>

Attachment C

ITC letter dated September 16, 2016 sent to Girard Township to respond to comments

September 16, 2016

Girard Township Supervisors
10140 Ridge Road
Girard, PA 16417

Re: ITC Lake Erie Connector Project

Dear Girard Township Supervisors,

Thank you for your letter of July 27, 2016 ("Letter") regarding our proposed Lake Erie Connector electric transmission project ("LEC"). In the attachment, each of the questions posed in your letter is repeated in italics and our responses are provided based on the most current information available. We have attempted to group the questions raised into related categories as well as provide references to additional materials.

In addition to answering your questions, we also wanted to advise you that the in-service date for the project has been moved back one year from 4th Quarter 2019 to 4th Quarter 2020. This change is due to the long lead time and limited manufacturing capability for the underwater cable system.

ITC is proud of its relationships in communities where we operate and we intend for the same in Girard Township. We believe this project will bring significant benefits to the township and surrounding area. We look forward to providing more information to you and the community as we continue development of the project. Please let us know if you have further questions or concerns, and we will do our best to address them.

Sincerely,

Michael Ivester
Regional Manager
Local Government and Community Affairs
mivester@itctransco.com

Water Questions Identified in the Letter:

1. *Well issues – this is still a huge, major concern. Residents are very concerned about losing their water supply or contamination of it.*

9. *What about permanent damage, such as water issues. Residents asked who would they contact if they have damage or lose their water. We said they talk with us first. Who pays to correct it they asked? They would like a written agreement from ITC for water issues that may be encountered. They said they should sign for the easement they are giving ITC. 1 resident said they did that with a National Fuel Gas line in the ROW in her front yard.*

10. *Some residents would like to see the report on the water testing. There are 2 more people who want to take advantage of the testing too. We will send you their name & address.*

ITC Response: In response to concerns raised by residents about water, ITC engaged Moody and Associates of Meadville to conduct voluntary water well testing along the proposed cable route. On September 8, 2015, ITC mailed notices to 67 residents along the proposed cable route offering water testing. ITC sent a second notice out on November 16, 2015. To date Moody has tested 32 water sources for those residents along the route who have requested the testing, with copies of each resident's individual results being mailed to them on June 20, 2016. ITC will continue to offer water testing to any resident along the proposed cable route.

Using the well sample data from residents as well as reviewing local conditions and 43 borehole logs from along the route, Moody prepared a report containing a Water Well Risk Abatement Recommendation. The main body of the Moody report and the figures were submitted to the U.S. Army Corps of Engineers and Pennsylvania Department of Environmental Protection as part of LEC's Joint Permit Application ("JPA"). The portions of the Recommendation included in the JPA are available at Appendix M in Volume III of the JPA and are also enclosed with this letter for your ease of reference. Based on their analysis, Moody recommended, and ITC has committed to, the use of certain construction techniques in order to avoid, reduce or mitigate the risk of impact to residential water supply wells along the proposed cable route. These techniques include:

- Channels oriented perpendicular to the direction of the trench will be incorporated into the trench bottom along sections of concern.
- The channels will be at least 1 foot wide, at least 1 foot deeper than the prevailing depth of the trench, and no more than 10 feet apart along the length of the sections of concern.
- The channels will be backfilled with a permeable material that will permit groundwater flow beneath the proposed transmission cable.
- Dewatering activities will be kept at the minimum level necessary to facilitate construction activities in order to avoid altering the preexisting groundwater flow gradient, which could result in reduced yield in adjacent wells.

As ITC proceeds through the detailed design phase (currently scheduled to be completed in late 2017), ITC will continue to review construction techniques and potential mitigation measures to ensure that residents along the cable route continue to have a safe and reliable water supply.

While ITC does not believe there will be any long-term impacts to the water supply, ITC will develop a written contingency plan to provide an alternate source of water in the unlikely event of adverse impacts to the water supply. We expect in the fall to have a proposed mitigation plan to share with the Township which sets forth a detailed Private Water Supply Impact Avoidance, Protection and Contingency Plan in the unlikely event the project impacts privately owned potable water sources.

Additionally, none of the technical systems (including cooling) at the planned converter station will use water drawn from local wells. The only water drawn from onsite wells will be used for washrooms for onsite employees, and we do not anticipate that this minimal usage would impact other wells in the area.

Project Route Questions Identified in the Letter:

8. *We weren't able to answer questions to the residents on Lexington Rd. We weren't sure where in the ROW the line will be. A couple residents on Lexington said they were told it was on the berm (possibly). So disturbance across one resident's driveway where her water supply comes from would be a major problem. Another said he has spring fed pond is in his front yard & he's concerned about losing the water in it & in his well. Both on Lexington Rd. This same resident said debris was left in the ditch along his pond from the core drilling that was done.*

6. *We talked about 2 other ROW's that you could use. Everyone would be quiet if ITC uses Penelec's ROW or Rick Sommer's ROW.*

ITC Response: Due to their size, a set of the most current route alignment maps will be delivered to your office separate from this letter. While these maps reflect the current alignment, there may be further adjustments as detailed engineering design work proceeds. Any such changes may require review and approval of the permitting agencies. We also understand resident concerns regarding the location of the splice vaults that will connect segments of the land cable. The exact location of these vaults will not be available until the detailed design process is completed which is expected to be in late 2017. Neither the cables nor the splice vaults will be located outside of the road right of way unless ITC has specific easements granted by landowners to do otherwise. The final location of the vaults along the route will be dependent on the final cable design, maximum road transportable lengths and maximum installable lengths of the cable, and ITC's efforts to minimize conflicts with existing driveways, utilities, and structures.

If residents identify debris or have concerns at any time related to our technical investigations or during construction, we would encourage them to contact us immediately by calling the ITC customer service number at (877) 482-4829. We endeavor to be good neighbors and cannot remedy issues that we are not aware of. Additionally, it should be noted that during the construction phase we will have environmental plans that have been approved by various government agencies that we and our contractors will need to follow. Specifically, project construction disturbance will be addressed via implementation of best management practices (BMPs) consistent with state regulations, an approved erosion and sedimentation control plan, and a National Pollutant Discharge Elimination System (NPDES) Permit for stormwater discharges associated with construction activities. These plans specify that following cable

installation, disturbed areas would be graded to match the original topography and to be compatible with local drainage patterns.

With respect to alternative routes for the cable, we evaluated several route, converter station and landfall alternatives. These alternatives were evaluated in relation to the LEC Project's purpose, need and geographic requirements, as well as the practicability and environmental consequences of each alternative. We attempted to minimize adverse impacts to residents, their land and the natural environment while still providing a technically and legally viable and cost-effective transmission line. The Erie West substation location in Conneaut Township was selected due to its electrical characteristics and lower environmental disturbance. Once that location was selected, a number of routes from the lakeshore to the station were initially evaluated over several months of studies. The route review included a route that would parallel existing Penelec transmission lines and a route that would have been constructed in the former railroad right of way. These routes were not viable routes for this project based on environmental, legal and land use factors.

Health Concern Questions Identified in the Letter:

3. *There is a house on Townline which is close to, quite possibly 50', from the centerline of the road. He's concerned about electromagnetic field contamination in their home when they will be sleeping 50' from the buried cables forever. The same owner also has a row of evergreens for a wind barrier within the ROW plus another 280 yr. old hickory tree in ROW that he is refusing to have removed for any amount of money.*

4. *We do not know who Wyatt Price is, but apparently he told residents that the cable line generates a lot of heat and water is needed to cool the line down. This is the first the Township Supervisors have heard of this. Is there truth to this?*

5. *One resident said a Wyatt Price told them the reason for removing the trees is because the trees will suck the water supply needed at the conversion station. Is the reason for the 50' ROW & tree removal because of a water issue or the roots disturbing the lines?*

7. *Is there heat generated from the buried line? If so, what about thawing & freezing snow issues on the road? What about heat in the wet lands, will that disturb their condition? (if there is heat)*

ITC Response: The High Voltage Direct Current ("HVDC") technology, cables, and converter station that comprise the project are safe and reliable. The cables are well insulated, do not contain liquids or gels, and are made from nonflammable materials. The transmission cables are designed with outer metal insulated layers, which will virtually eliminate the static electric field. HVDC cables do not produce the same type of alternating magnetic fields as AC transmission and distribution systems. The magnetic fields produced by HVDC cables are static fields similar to the earth's static magnetic field. Through the use of HVDC technology, and because the cables will be shielded and the transmission lines will be buried underground, a viable exposure pathway will not occur by which the general public will be exposed to magnetic levels that represent a human health concern.

Above ground, underground, underwater HVDC systems are in use all over the world. There are a dozen HVDC projects installed in North America, and over a hundred projects installed worldwide. For example, the Cross Sound project, which transfers energy between Shoreham, Long Island and New Haven, Connecticut, is a transmission line using underwater HVDC cables beneath Long Island Sound. Placing transmission cables beneath waterways is well-established and has been a safe way to move power for over half a century.

Mr. Wyatt Price is the Director of Land Management Services at Metro Consulting Associates and has been retained by ITC to assist with real estate matters. Mr. Price has over 35 years of experience in right of way and real estate fields and was in attendance at the open house and at other township meetings.

As we've discussed with the Township and in public meetings, the underground cables will be enclosed in PVC conduit encased in concrete. All electric cables generate heat including the HVDC cables proposed for the Lake Erie project. However, while the soil temperature adjacent to the cable duct bank is anticipated to increase due to operation of the proposed HVDC transmission cables, the heat will dissipate quickly with increasing distance from the proposed transmission cable. The temperature increase near the ground surface is expected to be less than 0.5 degrees Fahrenheit and will not affect the freeze/thaw cycles or vegetation.

The cables do not consume water for cooling. The heat generated by the cable in the concrete encased duct bank does not affect the moisture content of the soils. Rather, the moisture content of the soil is a large factor in determining the heat dissipation properties of the soils. Certain large trees and other vegetation with extensive root systems will reduce the moisture content in nearby soils. Under drought conditions the soil dry out could significantly reduce the rate of heat dissipation, causing the temperature of the cable core to rise to potentially damaging levels. ITC undertook a soil sampling study last year that included determining the dry out tendencies and heat dissipation properties of the soils along the route. That study identified specific soil types where large vegetation would lead to damaging dry out conditions for the cable. In addition to the dry out concerns, in specific areas the duct bank can be potentially damaged by long term exposure to tree roots. This is why ITC is requesting permission from the township and certain landowners to remove trees and vegetation in certain areas along the route.

Property Issue and Damage Questions Identified in the Letter:

2. *There are a few resident that will refuse to have their trees removed.*

11. *There are 2 residents whose houses are very close, within 50' front setback, who are concerned about damage done to their houses from the road equipment such as the compactor. Who repairs their home that if it happens?*

12. *Where will all the equipment be staged during construction & how long will the road work take?*

13. *Will there be room on the roads during construction for farm equipment to travel? Such as a grape picker which is quite wide.*

14. *Residents think we should ask for a 2 yr time frame for road settling & repair to the road after construction & completely super pave the road instead of the seal coating like the surface on Springfield Road now.*

15. *Residents all want to be paid for their inconveniences & negotiated with them too.*

ITC Response: While ITC acknowledges some landowners may not want their trees removed, it is important to note that under Pennsylvania law, trees growing in the right of way of Township roads are subject to pruning or tree removal if required by the needs of road use or other uses authorized in the right of way. Utility projects such as the ITC LEC project are examples of authorized uses of the road right of way under Pennsylvania law. ITC is focused in its design and engineering efforts to minimize impacts to any trees in the road rights-of-way. In those instances where trees will be impacted, ITC has included in the Road Use Agreement it is currently negotiating with Girard Township, an obligation by ITC to compensate affected landowners for the value of any trees that need to be removed.

In terms of potential damage to homes during the construction phase of the project, ITC does not anticipate any realistic possibility that the installation of the cables in the road rights of way could result in damage to neighboring homes. The equipment used for the cable construction is similar to that used for road construction and maintenance. Nevertheless, if any damage should occur and it is established that the damage was caused by the cable installation work, then ITC would bear the costs of necessary repairs associated with any damage arising from ITC's construction activities.

ITC is committed to working closely with its contractors, landowners and the township to minimize inconvenience to neighboring property owners during construction. While through traffic access may be temporarily limited at times, ITC's contractors will work with landowners who need access to their private driveways and farm fields. Staging of equipment will take place only at designated staging areas where ITC has obtained permission for such staging. Equipment and materials being used that day will be staged in the work area along the road and ditch line. It is expected that the work area will occupy one half of the road, for approximately 500 feet. The work area will shift by 100 to 200 feet per day. Passage for oversized farm equipment may need to be coordinated with ITC.

While we are committed to minimizing inconvenience and working with neighboring property owners, it is not feasible for the developer of a project such as this to pay landowners along a public road relating to inconvenience arising from construction in a public road right of way. Public roads exist in part for purposes such as this project and to support utility infrastructure. In this instance, the township is entrusted with ownership and responsibility for the right of way and the township is charged with acting on behalf of its residents along the route to protect their interests consistent with legal uses that may be made of the road right of way.

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APPENDIX M

WATER WELL ASSESSMENT

(Main body of the study report and figures)

Moody and Associates, Inc.
www.moody-s.com

Groundwater and Environmental Professionals - Since 1891

Sent via email

January 28, 2016

Mr. Steve Halmi
Deiss & Halmi Engineering, Inc.
105 Meadville Street
Edinboro, PA 16412

RE: ITC Lake Erie Connector, LLC Project
Residential Water Well Risk Abatement
Recommendation

Mr. Halmi,

ITC Lake Erie Connector LLC ("ITC") engaged Moody and Associates, Inc. ("Moody") to conduct a pre-construction risk assessment to privately owned potable water sources in the vicinity of the underground electric transmission line to be installed as part of the Lake Erie Connector Project ("Project"). This letter report provides a summary of the results of our investigations and our recommendations with respect to techniques to avoid, reduce or mitigate potential impacts to residential well sources.

Letters were sent to 67 property owners having water wells along the proposed ITC Lake Erie Connector, LLC ("ITC") cable route in Springfield, Conneaut, and Girard Township, Erie County, Pennsylvania. The letters requested access for Moody and Associates, Inc. ("Moody") to perform quality and quantity evaluations on the water wells. Moody has received responses from and completed water quality, quantity, and risk assessments of 21 water sources located adjacent to the proposed ITC cable route. Additionally, Moody evaluated local conditions and borehole logs provided to Moody by ITC to establish whether risk of impact may exist due to the proposed construction activities.

To establish pre-construction water supply yield and a general water quality baseline, data was gathered for those private water supply sources who provided access. This data included basic information about the source, such as type (i.e. well or otherwise), location, depth, diameter, pump

depth setting, and static water level. Water quality samples were collected for field analysis of pH, conductivity, oxidation-reduction potential, dissolved oxygen, temperature, and turbidity. The samples were also analyzed by a PADEP certified laboratory for alkalinity, chloride, conductivity, hardness, pH, sulfate, total dissolved solids, total suspended solids, coliform bacteria, E. coli bacteria, calcium, iron, magnesium, manganese, potassium, sodium, ethane, and methane. A 30-minute drawdown flow test was also conducted for each source to determine the source yield and recovery. The water quality data was offered to be shared with the property owner at no charge to the property owner. Individual assessments and the data generated during the site visits are included in ATTACHMENT A.

Water sources located within close proximity to the route, and those located in the apparent down-gradient groundwater flow direction may have the potential to be impacted from construction activities. A total of 9 out of the 21 sources sampled were deemed to be at moderate risk of impact. The remaining water sources were deemed to be at low risk of impact. Moody recommends that construction techniques be employed in order to avoid, reduce or mitigate the risk of impact to residential water supply wells adjacent to the proposed cable route.

Topographic relief and gradient are minimal, which reduces the overall risk of interception and re-direction of groundwater otherwise destined for a residential water well. However, the water table is relatively high in some areas. Risk involved with construction activities in those areas includes introduction of turbidity to the water source and interruption of water flow to the well. While turbidity is generally a temporary disruption, interruption of groundwater flow gradient is potentially a more long-term concern. FIGURE 1 illustrates the recorded water levels measured in the wells surveyed by Moody. Properties having wells with a recorded water level greater than or equal to 10 feet below ground surface ("bgs") are shown in green, and wells having a recorded water level less than 10 feet bgs are shown in blue. The wells having recorded water levels less than 10 feet bgs are highlighted because they may be more likely to be impacted by interruptions in shallow groundwater flow.

The duct bank design will result in an impermeable barrier from ground surface to approximately 5.5 feet bgs along the proposed ITC cable route. The risk of potential interruption in groundwater flow would occur in areas where the proposed cable trench and impermeable duct bank are constructed in areas where the following conditions exist:

- Permeable sediments exist in the shallow subsurface that is penetrated by the duct bank, and less permeable subsurface sediments then occur immediately below the permeable zone at less than 10 feet bgs.
- The water table is relatively shallow and encountered during excavation.

ITC provided data from 43 borings installed along the proposed ITC cable route. The boring logs are included in ATTACHMENT B. Each borehole description was analyzed to assess whether the installation of the cable duct bank might impact the groundwater flow to water wells in the area.

The conditions that were considered included:

- A low permeability interval immediately below the duct bank, based on bore hole log data
- Water wells located downgradient of the ITC line
- A groundwater elevation high enough to be impacted by the impermeable duct bank or low-permeability interval.

Based on bore hole log data, low permeability intervals were identified by the occurrence of clay in the soil descriptions above 20 feet bgs. Descriptions that only included "trace of clay" were not identified as low permeability. Groundwater flow was assumed to follow the general ground slope in the area and in the direction of hydrologic features. Mitigative recommendations based on individual borehole locations are as follows:

- BH-01, BH-05, BH-06, BH-07, BH-08, BH-19, BH-21, BH-22, BH-23, BH-24, BH-25, BH-26, BH-27, BH-30, BH-31, BH-32, BH-34, BH-35, BH-36, BH-37, and BH-40 all had no low permeability intervals. Mitigative procedures are unnecessary at these locations.
- AC-01 has a low permeability interval from 1.5-7.5 feet bgs. AC-01 is not located along the proposed route of the line and mitigative procedures are unnecessary.
- AC-02 has a low permeability interval from 1.5-15.0 feet bgs. AC-02 is not located along the proposed route of the line and mitigative procedures are unnecessary.
- BH-02 has a low permeability interval from 1.5-5.0 feet bgs. The duct bank will be deeper than this interval. Mitigative procedures are unnecessary.
- BH-03 has a low permeability interval from 10.0-20.0 feet bgs which will not be immediately below the duct bank. Mitigative procedures are unnecessary.
- BH-04 has a low permeability interval from 4.0-7.5 feet bgs. There are water wells downgradient of this section of line and the recorded water levels (RWL) in these wells is high enough to be impacted by the low permeability interval. If groundwater is encountered during trench construction, mitigative procedures should be taken along this section of line, illustrated on PLATE 1.
- BH-09 has a low permeability interval from 1.5-5.0 feet bgs and from 7.0-10.0 feet bgs. The permeable interval from 5.0-7.0 feet bgs makes mitigative procedures unnecessary.
- BH-10 has a low permeability interval from 1.5-5.0 feet bgs, from 7.0-10.0 feet bgs, and from 12.0-20.0 feet bgs. The permeable interval from 5.0-7.0 feet bgs makes mitigative procedures unnecessary.
- BH-11 has a low permeability interval from 7.0-15.0 feet bgs. The permeable interval from 0.0-7.0 feet bgs makes mitigative procedures unnecessary.
- BH-12 has a low permeability interval from 4.0-7.5 feet bgs and 11.5-16.5 feet bgs. There are water wells downgradient of this section of line and the RWL in these

wells is high enough to be impacted by the low permeability interval. If groundwater is encountered during trench construction, mitigative procedures should be taken along this section of line, illustrated on PLATE 1.

- BH-13 has a low permeability interval from 1.5-5.0 feet bgs, 7.5-10.0 feet bgs and 11.5-16.5 feet bgs. The permeable interval from 5.0-7.5 feet bgs makes mitigative procedures unnecessary.
- BH-14 has a low permeability interval from 11.5-20.0 feet bgs which will not be immediately below the duct bank. Mitigative procedures are unnecessary.
- BH-15 has a low permeability interval from 2.0-20.0 feet bgs. There are water wells downgradient of this section of line and the SWL in these wells is high enough to be impacted by the low permeability interval. If groundwater is encountered during trench construction, mitigative procedures should be taken along this section of line, illustrated on PLATE 1.
- BH-16 has a low permeability interval from 4.5-10.0 feet bgs. There are water wells downgradient of this section of line but the SWL of these wells is unknown at this time. If groundwater is encountered during trench construction, mitigative procedures should be taken along this section of line, illustrated on PLATE 1.
- BH-17 has a low permeability interval from 6.5-10.0 feet bgs. The permeable interval from 0.0-6.5 feet bgs makes mitigative procedures unnecessary.
- BH-18 has a low permeability interval from 4.5-10.0 feet bgs. There are now water wells downgradient of this section of line. Mitigative procedures are unnecessary.
- BH-20 has a low permeability interval from 1.5-10.0 feet bgs. There are water wells downgradient of this section of line and the SWL in these wells is high enough to be impacted by the low permeability interval. If groundwater is encountered during trench construction, mitigative procedures should be taken along this section of line, illustrated on PLATE 1.
- BH-28 has a low permeability interval from 0.5-5.0 feet bgs. The duct bank will be deeper than this interval. Mitigative procedures are unnecessary.
- BH-29 has a low permeability interval from 0.5-5.0 feet bgs. The duct bank will be deeper than this interval. Mitigative procedures are unnecessary.
- BH-33 has a low permeability interval from 1.5-4.5 feet bgs. The duct bank will be deeper than this interval. Mitigative procedures are unnecessary.
- BH-38 has a low permeability interval from 9.0-18.0 feet bgs which will not be immediately below the duct bank. Mitigative procedures are unnecessary.
- BH-39 has a low permeability interval from 0.7-4.5 feet bgs. The duct bank will be deeper than this interval. Mitigative procedures are unnecessary.
- BH-41 has a low permeability interval from 4.5-7.5 feet bgs. There are water wells downgradient of this section of line but the SWL of these wells is unknown at this time. If groundwater is encountered during trench construction, mitigative procedures should be taken along this section of line, illustrated on PLATE 1.

Moody recommends that in order to minimize risk of impact, mitigative techniques may need to be employed in the construction of the cable trench. Sections of the line in which the impermeable barrier may affect local water wells are illustrated on PLATE 1. Mitigation should be considered along those intervals, and especially when shallow groundwater is encountered during the construction of the trench. Channels oriented perpendicular to the direction of the trench should be incorporated into the trench bottom along intervals of concern. The channels should be not less than one foot wide and one foot deeper than the prevailing depth of the trench, and should be backfilled with a permeable material that will permit groundwater flow beneath the line. Additionally, the channels should be constructed at intervals not greater than ten feet along the length of the section of concern. In addition, Moody recommends that dewatering activities are kept at the minimum level necessary to facilitate construction activities. Excessive dewatering of the trench may lead to alteration of the preexisting groundwater flow gradient and reduced yield in adjacent water wells.

The analysis and recommendations contained in this letter report are based specifically on the data provided by ITC and collected to date by Moody during pre-construction well surveys. Please contact us if you have any questions regarding this assessment or the information contained herein.

Respectfully Submitted,

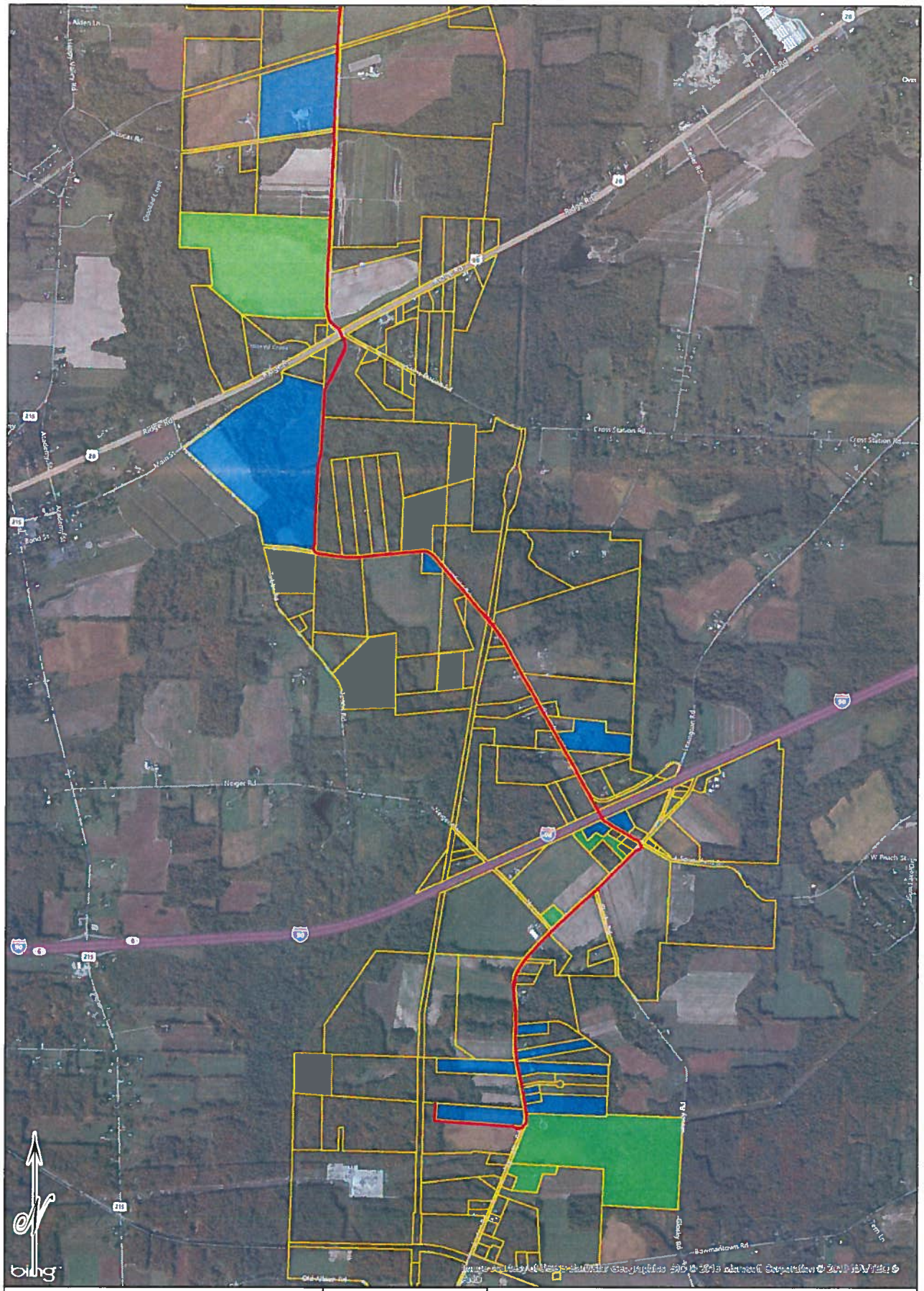
Paul J. Martin
Moody and Associates, Inc.

Cc: Tim Weston
Mark Miller

Attachments

FIGURE 1

INITIAL RECORDED WATER LEVELS



LEGEND

- Cable Route 5-8-2015
- Tax Parcel Boundary

Recorded Water Level

- <10'
- ≥10'

Scale: 1 in = 1,500 ft

0 750 1,500

Feet

Prepared for:
Deiss & Halmi Engineering, Inc

Map Reference:
This exhibit is based on the Bing Maps Hybrid - © 2010 Microsoft Corporation and its data suppliers

RECORDED WATER LEVEL MAP

ITC Lake Erie Connector Site
Springfield, Conneaut and Girard Townships
Erie County, Pennsylvania

Project #: 15-268-MM

Drawn by	Checked by	Date	Revision
AMH	PJM	1/27/2016	0

11548 Cotton Road
Meadville, Pennsylvania 16335
814.724.4970 voice
814.724.4973 fax
www.moody-s.com

Moody

PLATE 1

RECOMMENDED MITIGATION INTERVAL MAP


LEGEND
Borehole Location
Evaluated Water Source Location
Assumed Water Source Location
Cable Route 5-8-2015
Recommended Mitigation Interval
Tax Parcel Boundary
Map Reference.
This exhibit is based on the Bing Maps Hybrid - © 2010 Microsoft Corporation and its data suppliers
Scale 1 in = 1 000 ft
0 500 1 000
Feet
PLATE 1
RECOMMENDED
MITIGATION INTERVAL MAP
ITC Lake Erie Connector Site
Springfield, Conneaut and Girard Townships
Erie County, Pennsylvania
Prepared for:
Deiss & Halmi Engineering, Inc
Moody
Project # 15-288 AIM
AMH
PJM
1/28/2016