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Cleantech Analytics  
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Centreville, VA 20121

April 7, 2018

Maryalice Fischer  
Certification Program Director  
Low Impact Hydropower Institute

Subject: Recertification Recommendation for the Oswego Falls Hydroelectric Facility (FERC #5984, LIHI #35A)

Ms. Fischer:

This letter contains my recommendation for Recertification of the Oswego Falls Hydroelectric Facility (the "Facility"). I complete a thorough review of the application materials and the public record for this Facility, and am recommending recertification for one new, five-year term. I also recommend removal of the existing condition, because the Owner has demonstrated no flow excursions for the required three consecutive years.

Please contact me if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Peter Drown", is written over a faint, illegible printed name.

Peter Drown, President  
Cleantech Analytics LLC

**I. Background:**

The 7.36 MW Oswego Falls Hydroelectric Facility (“Facility”) is located on RM 12.3 of the Oswego River, in the town of Fulton, New York. Project works include a concrete gravity dam (crest elevation 352 ft.) equipped with a pneumatic crest control system and six Tainter gates to provide spill into the central bypassed reach Zone. The Facility consists of two distinct powerhouses on either side of this dam, each with an intake structure, powerhouse and tailrace. Oswego Falls East powerhouse contains three vertical Francis-type turbine-generators with authorized capacity of 1,500 KW each, and Oswego Falls West powerhouse contains four turbine-generator units with authorized capacity of 2,860 KW. The Facility operates in a modified run-of-river mode with an allowable 0.5-foot impoundment fluctuation, and generates approximately 33,780 MWh annually. There is one bypassed reach in the center of the river, bounded by the powerhouses and intake structures (see Figure 1.) The project is located approximately eight miles downstream of the Phoenix Project (FERC #4113) and 0.7 miles upstream of the Oswego River Project (FERC #2474)<sup>1</sup>. The Facility was initially constructed in the early 1900s, and currently operates under the terms and conditions in a 40-year FERC License issued March 1996, subsequent amendments in 2006 and 2011, and the Oswego River and Oswego Falls Offer of Settlement issued in February 2004. Erie Boulevard Hydropower, LP (“Owner”) owns and operates the Facility. The Facility was originally certified as “Low Impact” on July 8, 2008 and re-certified on December 7, 2012, with the expiration date extended to June 30, 2018. On December 27, 2017, the Owner submitted a timely and mostly complete application for Recertification. This application review for recertification was conducted using the new, 2<sup>nd</sup> Edition Handbook that was published in March 2016.



**Figure 1 - Oswego Falls Zones of Effect**

<sup>1</sup> See separate LIHI recertification report for the Oswego River Projects (LIHI #35B)

## II. Recertification Standards

On October 06, 2017, LIHI received a Stage I Application (Intake Application) from the Owner requesting recertification of the Facility. Under the 2<sup>nd</sup> Edition LIHI Handbook, including the new two-phase process starting with a limited review of a completed LIHI application, focused on three questions:

- (1) Is there any missing information from the application?
- (2) Has there been a material change at the certified facility since the previous certificate term?
- (3) Has there been a change in LIHI criteria since the certificate was issued?

If the answer to any question is “Yes,” the Application must proceed through a second phase, which consists of a more thorough review of the application using the LIHI criteria in effect at the time of the recertification application. Because the new Handbook involves new criteria and a new process, the answer to question two for all projects scheduled to renew in 2016 and beyond until the end of the next Certificate term will be an automatic ‘YES.’ Therefore, all certificates applying for renewal post-2016 through at least 2021 will be required to proceed through both phase one and phase two of the recertification application reviews.

## III. Adequacy of the Recertification Package

I completed the Stage I Review of the Recertification Application on November 10, 2017, and noted several minor deficiencies for the applicant to resolve in the Stage II Application. The Applicant provided an updated Recertification Application on March 9, 2018, which included additional supporting information and stated there have been no material changes to the Facility design and operation, or environmental conditions in the project vicinity since the most recent LIHI review. To verify this, I have reviewed the application package, supporting comments and documentation and public records on FERC e-library posted since the original certification report (Franc, 2014). I also independently verified the submitted criteria were appropriate given the changes in the 2<sup>nd</sup> edition LIHI handbook.

The application was public noticed on January 2, 2018 with the 60-day public comment period ending on March 3, 2018. In the interim, the Owner provided additional information requested to support this review. No comments were received.

## IV. There have not been any “material changes” at the facility that would affect recertification

In accordance with the Recertification Standards, "material changes" mean non-compliance and/or new or renewed issues of concern that are relevant to LIHI's criteria. Based on my review of materials provided, review of FERC's public records, and consultation with the noted individuals, I found that there are no areas of noncompliance or new or renewed issues of concern. The previous LIHI certificate contained the following condition:

- *LIHI commends EBH for recent efforts to coordinate river flows and hydropower operations in the upper Oswego basin. However, additional documentation is needed to ensure that improvements continue. EBH shall work to formalize the communication protocols on reservoir releases within the basin and provide LIHI with copies of all multi-lateral agreements on coordination of operations. In its annual compliance report to LIHI, EBH shall provide a summary of operational experience with river flows and reservoir levels over the past year, identifying any significant flow events that occurred leading to any violations of flow requirements and corrective actions taken. This condition will be complete after three consecutive years without any operational flow events. (NOTE: this annual summary report may be combined with a similar condition on the Oswego River certification, LIHI #35B)*

This condition was placed on March 10, 2015, and will expire on March 10, 2018. I have reviewed the Owner's compliance submittals for 2016 and 2017, and find that they have complied with this condition by working with the up-river Phoenix hydro facility, the New York State Canal Corporation, North Line Energy LLC, and other river stakeholders to improve communications protocol and make flow adjustments as needed. There were no operational flow events or violations during this time period<sup>2</sup>, so I recommend the condition is complete and can be removed from certification.

## **V. LIHI certification criteria are satisfied in all Zones**

The Applicant selected four Zones for the Facility, including the impoundment, the bypassed reach, and the tailraces for the East and West powerhouses. In the Intake Review, I recommended that the Owner combine the tailrace Zones 3 and 4, but they elected not to do that in the final application, and it does not impact any of my recommendations. The upstream and downstream limits of these Zones were accurately defined as the impoundment to the upstream Phoenix Project, to the tailwater 0.22 miles downstream of the Facility where the river is influenced by the impoundment of the Fulton development which is also in review for LIHI recertification at this time (part of LIHI #35B).

### *A. Ecological Flow Regimes*

The Owner properly selected Standard 1, Not Applicable/De Minimis for Zone 1 (due to the automatic Standard 1 selection for impoundment Zones in LIHI's requirements,) and Standard 2, Agency Recommendation for Zone 2. They selected Standard 1 for Zones 3 and 4, but in my opinion Standard 2 is the correct selection for these two Zones as the flows requirement impacts the operations of the entire project. Article 404 requires the Owner to release bypass flow of 236 cfs or inflow, whichever is less. These requirements are designed to protect and enhance riffle habitat in this reach, an area of concern identified by US Fish and Wildlife Service (USFWS) and New York Department of Environmental Conservation (NYDEC). The scientific and technical basis is contained in a modified Instream Flow Incremental Methodology (IFIM) study of the bypassed reach, in which two life stages of five different fish species were analyzed under a range of simulated flows. Then bypassed flow releases were set to improve the wetted usable area in the bypassed reach to provide habitat for various life stages of resident fish species. These releases were agreed to by multiple non-governmental organizations (NGOs) and Agencies in the Settlement Agreement of 2004. The modified run-of-river operation allows for a 0.5-foot impoundment fluctuation in the reservoir, and requires ongoing monitoring which is described in the FERC-approved Run-of-River Monitoring Plan.

Additional requirements were included in LIHI's condition that the Owner coordinate efforts with other river stakeholders to improve communications protocols on reservoir releases and identify any conditions leading to operational flow events and take corrective action. As mentioned in Section IV, the Owner confirmed they have complied with this condition in their annual compliance statements. Given the scientific and technical basis of the flow recommendations, and the ongoing monitoring requirements, the Facility satisfies this Criterion with Standard 2, Agency Recommendation for Zones 2, 3, and 4.

### *B. Water Quality*

The Owner properly selected Standard 2, Agency Recommendation, for all Zones. The Facility is located on a Water Quality Limited reach, impaired for Fish Consumption due to PCB-contaminated sediments. Although the Owner did not provide a letter stating the Facility is not the cause of this impairment, I reached out to NYDEC

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<sup>2</sup> There were several flow excursions at the Oswego River Project in 2015, and therefore the condition remains in place for that project (see re-certification review for LIHI #35B.)

and confirmed this via letter received March 30, 2018 (see Attachment 1). Although the Owner's application for a Section 401 Water Quality Certificate (WQC) was denied by NYDEC in 1997, initiating the Settlement Offer between the river's stakeholders and the Owner, there was a new WQC issued in August 2006 in support of proposed turbine upgrades, and this WQC and the Settlement Offer contains the most recent agency recommendations specific to water quality. The WQC standards primarily consist of standard terms and conditions pertaining to construction, including sediment, erosion and effluent control, turbidity monitoring, and disposal. However, the primary requirement for water quality is the flows requirement described in that Criterion above and in the Settlement Offer. These recommendations are designed to improve wetted usable habitat and water quality in the bypassed reach and restrict fluctuations of the impoundment to 0.5 foot, improving water quality in the vicinity. Further downstream, the Oswego River Project is subject to additional water quality requirements but these are described in the LIHI recertification report for that Project.

The Owner adequately demonstrated compliance with agency recommendations contained in the WQC and Settlement Offer, and satisfies the Water Quality criterion.

### C. *Upstream Fish Passage*

The Owner selected Standard 1, Not Applicable/De Minimis for Zones 1, 3 and 4, because the primary barrier to fish passage (the dam) is included in Zone 2. The Owner selected Standard 2, Agency Recommendation for Zone 2. This region of the Oswego River is home to a variety of warm-cool water and coldwater species, including walleye, northern pike, smallmouth bass, largemouth bass, Chinook salmon, coho salmon, American eel, rainbow trout (steelhead), brown trout, pumpkinseed sunfish, bluegill, yellow perch, white perch, black crappie, brown bullhead, channel catfish, freshwater drum, bowfin, common carp, alewives, round goby and gizzard shad. Lake Sturgeon are also known to occur in the River, but these are discussed under section F below, due to their threatened status.

Agency recommendations include upstream eel passage facilities at the west end of the spillway, pursuant to License Article 404/405, and the development of a plan for an upstream fish passage structure as required by agencies. The Owner stated that they operate and maintain the eel passage facility in compliance with the license requirements. A 2011 FERC environmental inspection found the eel passage facilities were operational. Eel passage was incorporated into the Settlement Agreement, and aligns with a USFWS priority to re-introduce eels to all habitats within its historical range by 2010. By letter dated March 23, 2018, USFWS provided the following comments about eel passage at the site (see Attachment 1):

*"The owner voluntarily added the eel ladders during an amendment process for the licenses. No effectiveness testing has been done. The American eel population in the Oswego River is probably relatively low now due to the declining numbers coming up the St. Lawrence River. The Oswego is getting near the edge of the range. The eel ladders are still important, but we don't know their effectiveness."* (Attachment 1)





Figure 2 - Upstream eel conveyance system (adjacent to Tainter gate)

The modified run-of-river requirement discussed in section A also impact upstream fish migration. These seasonal bypass flows are designed to protect riffle habitat for the reproduction of macroinvertebrates, minnows, and darters, supporting fish propagation and spawning habitat. Therefore, the same scientific basis and monitoring requirements discussed under section A support this Criterion.

The Owner adequately demonstrated compliance with upstream fish passage recommendations contained in the FERC License and Settlement Offer, and satisfies the Upstream Fish Passage criterion in all Zones.

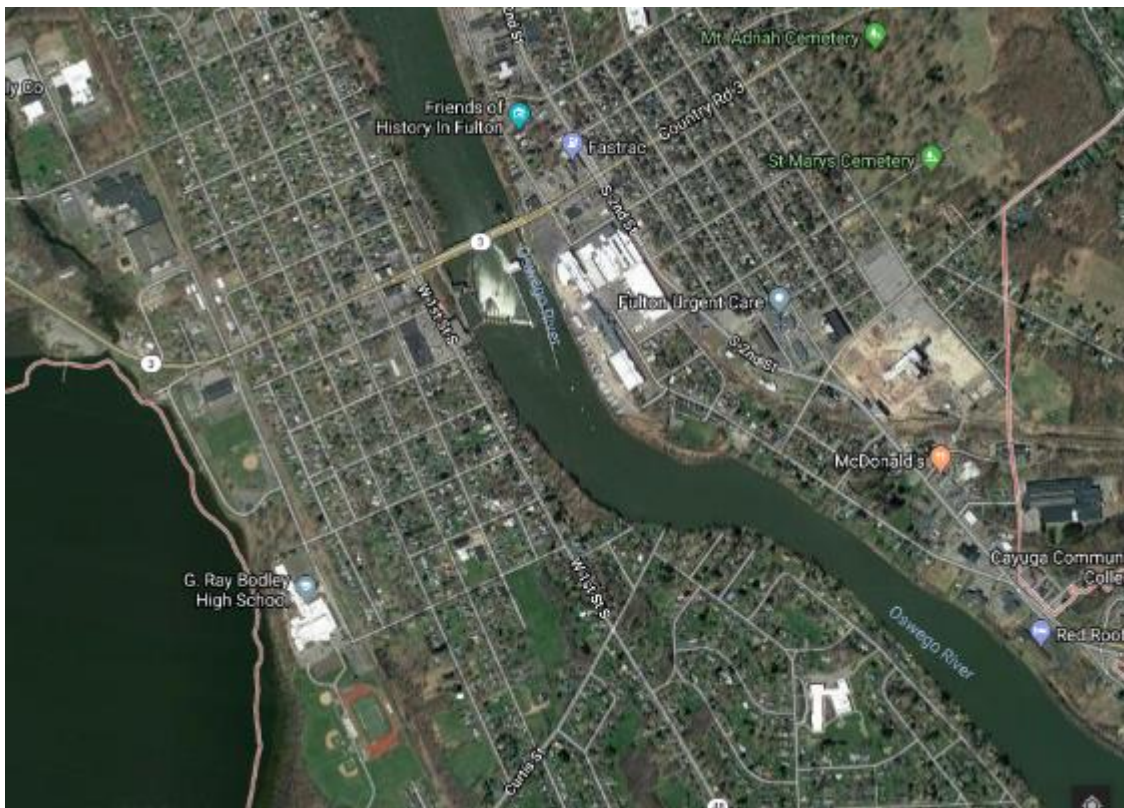
#### D. Downstream Fish Passage

The Owner properly selected Standard 1, Not Applicable/De Minimis for Zones 1, 3 and 4, because the primary barrier to fish passage (the dam) is included in Zone 2. Fish species that occur in the Oswego River include walleye, northern pike, smallmouth bass, largemouth bass, Chinook salmon, coho salmon, American eel, rainbow trout (steelhead), brown trout, pumpkinseed sunfish, bluegill, yellow perch, white perch, black crappie, brown bullhead, channel catfish, freshwater drum, bowfin, common carp, alewives, round goby and gizzard shad. Downstream fish passage and protection requirements are included in the 2004 Settlement, and provide habitat enhancement and deterrence provisions. The minimum flow requirements described in Flows, above, are designed to be “fish friendly,” and therefore are pertinent to this Criterion as well. The Owner is required to pass 70 cfs at the east powerhouse and 166 cfs through the west powerhouse, as determined in the IFIM study and agreed to by all stakeholders in the Settlement. Furthermore, the Owner is required to install seasonal 1.0-inch-spaced trashracks or 1.5-inch diameter plates from May 1 through November 30, to deter fish from entering the turbine intakes. These are the only ongoing downstream fish passage requirements, and the same scientific and technical basis, and monitoring requirements from the Flows standard apply here. ZonesThe Owner adequately demonstrated compliance with these base flows, minimum flows, and fish entrainment protection requirements

contained in the FERC License and Settlement Offer, and satisfies the Downstream Fish Passage criterion in all Zones.

*E. Watershed and Shoreline Protection*

The Owner properly selected Standard 1 Not Applicable/De Minimis for all Zones. It is readily apparent that each of Erie Boulevard LP’s Oswego River projects is located in heavily urbanized areas, with impervious surfaces and residential/commercial development surrounding the Oswego River and each of the project boundaries. The shorelines are clearly not of significant ecological value, and there are no shoreline management plans in place. The impoundment of Oswego Falls does extend through rural, forested areas but this area is not under control of the Owner, and no management plans or requirements exist. Therefore, the Facility satisfies this criterion in all Zones.



**Figure 3 - Aerial View of Oswego Falls Hydroelectric Facility in Fulton, NY**

*F. Threatened and Endangered Species*

The Owner selected Standard 3, Recovery Plan and Action for all Zones. The species identified include the Indiana Bat (federally endangered), Northern Long-eared Bat (federally threatened), Bald Eagle (state threatened), Bog Turtle (federally threatened), Eastern Massasauga (federally threatened), and Lake Sturgeon (state threatened). The Owner gave a thorough description of how they comply with the recovery plans for both species of bats, the Bog Turtle, and the eastern Massasauga. This includes minimizing vegetation removal and seasonal tree-clearing, habitat protection, and run-of-river operation. The Owner cited their existing upstream and downstream fish passage and protection measures coupled with run-of-river operations as evidence of protection of resident sturgeon. The NYDEC is using habitat enhancement and artificial propagation (fish

hatchery programs) to support populations of this species, and published a Species Recovery Plan on January 31, 2018 for the period 2018 – 2024<sup>3</sup>. The Oswego River projects (including Oswego Falls and Oswego River,) straddle two management units, the Central NY unit and Eastern Lake Ontario unit. The Plan states that sturgeon are known to regularly migrate upstream between these units, indicating that they are able to pass through or otherwise navigate these projects. The primary recommendations consist of monitoring populations of these species and eventual spawning habitat structures pending the successful testing of spawning beds elsewhere in the region. The Oswego River projects are not interfering with any of these activities, and the seasonal trashrack overlays and flow requirements also likely benefit this species. I solicited comments from NYDEC and USFWS to verify compliance with these management plans, and on March 29, 2018 they confirmed that there has been “good progress” across their native range, and the Owner has been responsive to their requests.

The Owner adequately demonstrated compliance with recovery plans for all listed species, and satisfies the Threatened and Endangered Species criterion in all Zones.

#### G. *Cultural and Historic Resources Protection*

The Owner properly selected Standard 1, Not Applicable/De Minimis for all Zones. There are cultural and/or historic resources in the area and some Facility structures are old enough to be considered for listing on the National Register of Historic Places. However, there are no protection requirements, and the New York State Historic Preservation Office determined that the Facility and its operations would have no effect on properties listed in or eligible for the National Register of Historic Places<sup>4</sup>.

#### H. *Recreation*

The Owner selected Standard 2 Agency Recommendation for all Zones for which public access can be granted (excluding the bypassed reach due to safety considerations). This stretch of the Oswego River is used extensively for recreational purposes, primarily boating and fishing. The New York State Canal Commission operates the locks that provide boat access around the dams, and several day-use recreational facilities are owned and maintained by local municipalities or New York State. Article 17 of the FERC License requires the Owner to construct, maintain, operate or facilitate reasonable recreational facilities. The Owner donated land and financial resources to construct a boat launch prior to license issuance, and FERC determined their ongoing efforts satisfied the intent to provide recreational access. The Owner stated they maintain public fishing and river viewing areas pursuant to Article 410, including handicapped-accessible areas. During the most recent FERC inspection, all environmental and public use requirements of the Facility were determined to be satisfactory. By letter dated June 8, 2016, FERC stated the Owner is in compliance with their requirement to file Form 80 documents upon request by the Agency. Based on this evidence, the Owner adequately demonstrated compliance with all agency recommendations impacting recreation at the Facility, and satisfies the Recreation criterion for all Zones.

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<sup>3</sup> [https://www.dec.ny.gov/docs/fish\\_marine\\_pdf/lakesturgeonrp.pdf](https://www.dec.ny.gov/docs/fish_marine_pdf/lakesturgeonrp.pdf)

<sup>4</sup> See Environmental Assessment: <https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=13716276>



## VI. Conclusion

In my opinion, the materials provided and referenced above are sufficient to make a recertification recommendation, and no further application review is needed. In conclusion, I recommend Recertification of the Oswego Falls Hydroelectric Facility to one new, five-year term, with no conditions required.

Please contact me if you have any questions.


Sincerely,

A handwritten signature in black ink, appearing to read "Peter R. Drown", written in a cursive style.

Peter R. Drown, President  
Cleantech Analytics LLC

**Attachment 1**  
**Agency and Applicant Communications**

**Date:** March 30, 2018  
**Contact Person:** Valarie Ellis  
**Agency:** New York State Department of Environmental Conservation

 **Ellis, Valarie D (DEC)** <valarie.ellis@dec.ny.gov> Mar 30 (4 days ago) ★  
to Peter, Kevin, Ian, Scott

Mr. Drown,

The Water Inventory/Priority Waterbodies List categorizes the sediments of that section of the **Oswego** River as impaired for PCB contamination. This is likely due to probable, past industrial discharges to the river. Therefore, the Department is not considering any on-going operations or discharges as contributing to PCB loadings to the sediments in the river.


I hope this information has been helpful. If there is anything else we can assist you with, please let us know.

**Valarie D Ellis, PE**  
Professional Engineer I (Environmental), Division of Water, Region 7  
Onondaga Lake Monitor

New York State Department of Environmental Conservation  
615 Erie Blvd., West, Syracuse, NY 13204-2400  
P: [315.426-7500](tel:3154267500) | F: [315.426-7459](tel:3154267459) | [valarie.ellis@dec.ny.gov](mailto:valarie.ellis@dec.ny.gov)

Water Quality on **Oswego** River Inbox x

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 **Peter Drown** <peter.drown@cleantechanalytics.com> Mar 28 (6 days ago) ☆  
to Ian

Hi Ian,

I am completing my reviewer's report for the re-certification of the **Oswego** Falls Hydroelectric Project (FERC #5984) for the Low Impact Hydropower Institute. Can you confirm that the Project is not the cause of the water quality impairment listed for this stretch of the **Oswego** River?

Thanks,

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**Date:** March 29, 2018  
**Contact Person:** Ian Blackburn, Fish and Wildlife Technician  
**Agency:** New York State Department of Environmental Conservation



Peter Drown <peter.drown@gmail.com>

### Low Impact Hydropower Power - NY Recertifications

**Blackburn, Ian R (DEC)** <ian.blackburn@dec.ny.gov>  
To: Peter Drown <peter.drown@cleantechanalytics.com>

Thu, Mar 29, 2018 at 12:17 PM

Peter: Nysdec's recovery plan for lake sturgeon has recently been revised and there has been good progress across the state in their native range. Brookfield has been responsive to our recent requests in ratiobasing efforts in the Oswego River system.

Hope that helps. Please contact me if you need additional clarification.

Thank you,

Ian Blackburn

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**Peter Drown** <peter.drown@cleantechanalytics.com>

Mar 23 (11 days ago) ☆

to Stephen\_Patch, Robyn\_Niver

Hello Stephen, Robyn,

I am the reviewer responsible for the **Oswego** River projects, and I would appreciate your comments on the following two items:

- The Owner noted the possible presence of Lake Sturgeon in the **Oswego** River. As a threatened and endangered species, is the Owner in compliance with any relevant conditions in species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar plans issued by your agency? If these plans have not been developed, is there any concern from your agency with the impact of these projects on resident Lake Sturgeon?

- The Owner has installed and operates upstream eel passage at the facilities. Can you comment on the effectiveness of these facilities?

Thanks,

[\[...\]](#)

**Date:** March 23, 2018  
**Contact Person:** Stephen Patch, Lake Sturgeon Hydro Project Coordinator  
**Agency:** US Fish and Wildlife Service



**Patch, Stephen**

Mar 23 (11 days ago) ☆

to Dave, Peter, Ian, Robyn

If you haven't contacted the New York State Department of Environmental Conservation, please contact Dave or Ian (cc'd above). As Robyn indicated, we have no jurisdiction over lake sturgeon. The owner voluntarily added the eel ladders during an amendment process for the licenses. No effectiveness testing has been done. The American eel population in the **Oswego** River is probably relatively low now due to the declining numbers coming up the St. Lawrence River. The **Oswego** is getting near the edge of the range. The eel ladders are still important, but we don't know their effectiveness.

[\[...\]](#)