

**REVIEW OF POTENTIAL DAM REMOVAL
AND MITIGATION OPPORTUNITIES IN
NEW YORK'S GREAT LAKE'S BASIN**

By

Christopher Stephens

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New York Rivers United

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Executive Summary

Six dams were found to present removal or mitigation opportunities that could significantly add to the amount of available fish spawning habitat in New York's eastern Lake Ontario Basin. These dams were identified through field visits and close consultation with New York Department of Environmental Conservation fishery managers. Restoration of fish passage to upstream segments of these dammed tributaries has the potential to restore naturally sustaining populations of important native and sport fish such as American eel, Atlantic salmon and steelhead trout (Table ES-1).

The dams identified as a high priority for future evaluations all meet the following criteria:

- located on tributaries that support important native species and/or sport fish;
- no longer serve a useful purpose;
- show signs of structural deterioration and on-site safety issues;
- no contaminated sediment issues above the dam;
- further review is supported by NYSDEC fishery managers

The amount of additional upstream miles of fish spawning habitat that would be created from these proposed dam removals range from 1 to 21 miles. If all of the six dams were removed it would produce a total of 63 miles of additional upstream spawning habitat. The majority of these dams are privately owned and no longer serving a useful purpose. Some of these tributaries will need to be carefully considered to ensure that favorable conditions are not created for predatory sea lamprey or other exotic species.

Federal, state, local governments and non-governmental organizations can use these findings to identify where more focused assessments are needed. Estimated removal costs associated with these dams range from \$40,000-\$800,000.

Table A. Proposed Priority Barrier Mitigation Project.

Dam/Stream	Location Town/County	Potential Upstream Habitat (miles)	Key Species	Estimated Removal Cost
Monitor Mills Dam/South Sandy Creek	Ellisburg/Jefferson County	21	AE,SH,PS	\$50K-\$250K
Webster Dam/Sandy Creek	Adams/Jefferson County	1	AE,SH	\$60K-\$100K
Youngs Mill Dam/Black Creek	Mexico/Oswego	11	AE,SH,PS	\$50K-\$100K
Ames Mill Dam/Little Salmon River	Mexico/Oswego	1.5	AE,AS,PS,BKT	\$40K-\$100K
Little Salmon Dam/Little Salmon River	Mexico/Oswego	11.5	AE,AS,PS,BKT	\$40K-\$100K
Fernwood Dam/Grindstone Creek	Fernwood/Oswego	17	AE,AS,PS,BKT	\$300K-\$800K

Key:

- AE - American eel
- AS - Atlantic salmon
- BKT - Brook trout
- PS - Pacific salmon
- SH - Steelhead trout

Introduction

This study is part of an ongoing effort to restore the Great Lakes ecosystem. In 1987, the governments of Canada and the United States signed the Great Lakes Water Quality Agreement which includes the development of Lakewide Management Plans for each of the five Great Lakes. LaMPs provide a systematic and comprehensive ecosystem approach to restoring the Great Lakes. Restoring access to vital fish spawning habitat is one necessary step to achieve the goal of natural sustaining fish populations in the Great Lakes.

The objective of this study is to identify potential dam removal/barrier mitigation opportunities in New York's Great Lakes Basin to help restore the connection between Great Lakes fish and upstream tributary spawning habitats. The Project assessed the current needs and opportunities associated with using selective dam removal and other alternative barrier mitigation methods to restore or allow upstream fish passage along rivers in New York State's Great Lakes Basin. The project developed a list of dams that could be removed or mitigated to improve upstream fish passage.

This report identifies first and second barrier dams on New York's Lake Ontario's basin tributaries where dam removals, fish ladder construction or other mitigation activities could potentially increase upstream spawning habitat for important native fish and sport fish.

Species of Interest

The Lake Ontario fish community has been irrevocably altered due to a variety of ecological changes that have occurred since the pre-colonial era. Today Lake Ontario fisheries are managed to balance the needs of native species and introduced sport fish. The presence of important native fish and introduced sport fish below a dam coupled with potential spawning habitat above a dam was the single largest factor in determining which dams should be considered a high priority for a more in depth evaluation.

American eel (*Anguilla rostrata*) are an important native species from both a biodiversity and human use perspective. American eel are a catadromous fish species, spending most of their life (up to 20 years) in freshwater or estuarine environments, returning to the ocean to reproduce. Adult eel migrate to spawning grounds located in the Sargasso Sea, a large portion of the western Atlantic Ocean east of the Bahamas and south of Bermuda. In all its life stages, eel serve as an important prey species for many fish, aquatic mammals, and fish eating birds. Eel are currently threatened with extirpation in Lake Ontario due to severe declines in their populations for reasons that are not fully understood.

Atlantic Salmon (*Salmo Salar*) in New York were once very abundant in Lake Ontario and its tributaries but by 1898 salmon were no longer found in the Lake Ontario or its tributaries due to damming of tributaries, over fishing and other environmental changes. Early records and journals indicate that the largest producers of salmon included the Salmon River, the Oswego River system, and the Genesee River. Smaller tributaries in New York also supported salmon runs, including Little Sandy Creek, Deer Creek, Grindstone Creek, Little Salmon River, and Oak Orchard Creek. Research is ongoing to determine if Atlantic salmon could be reintroduced to Lake Ontario. The presence of suitable tributary spawning habitat will be essential for the success of these efforts.

In addition to native species there are some important sport fish such as steelhead (*Oncorhynchus mykiss*), brown trout (*Salmo trutta*) and walleye (*Sander vitreus*) that could benefit from dam removal projects.

Any potential dam removal project must carefully consider if removal would increase the range of invasive species particularly sea lamprey. Dam removals may inadvertently create more spawning habitat for lamprey that would have negative impacts on trout and salmon populations. Other invasive species that need to be considered include zebra mussels and the round goby.

Evaluation Approach

The scope of this evaluation included first, and selected second barrier, dams of NYS Great Lake's basin. This evaluation did not include dams regulated under the Federal Energy Regulation Commission (FERC) except in those instances where removal of an identified high priority dam, downstream of a FERC dam, would change the range of fish passage issues that would need to be considered by the FERC relicensing process. Fish passage issues associated with FERC regulated dams are addressed in detail as part of periodic relicensing negotiations. APPENDIX 4 provides more details on the FERC relicensing process.

The evaluation process consisted of five stages:

- Identifying dams to be reviewed based on a list developed by Cornell University Hydroecology and Conservation Mapping Model.
- Visiting the dams in the field to qualitatively assess dam structural conditions and ecological settings.
- Completing the New York State Strategic Plan for Barrier Mitigation work sheet.

- Consulting with NYSDEC fishery managers on which dammed tributaries have the greatest potential for increased spawning habitat for native fish species and sport fish.
- Development of list of high priority dams and final recommendations

This project began with the list of first and second barriers generated by the Cornell University Hydroecology and Conservation Mapping model. The goal is to develop and demonstrate a modeling and geographic information system that can be applied to the Great Lakes Region to indicate the locations of areas with the greatest need for hydroecological restoration and the most substantial community capacity for implementing conservation programs. Hydrologic and habitat mapping is being conducted to identify land areas and stream segments associated with highly altered streamflows, degraded habitats, and fragmented stream courses. These locations would then be identified on a large scale (coastal watersheds of New York's Great Lakes) geographic information system (GIS) for targeting restoration actions. A list of dams was generated and provided for NYRU to assess. For more information please visit the following website. <http://hydroeco.cfe.cornell.edu/> (Cornell, 2003)

Each of the dams were then visited to conduct a visual evaluation of the dams to determine their usefulness, potential structural deficiencies, the amount of land erosion along and around the barrier, the amount of debris collecting on the dam, the amount of stagnant water impounded and any safety issues, such as, exposed intake structures. A qualitative ranking of "Low," "Medium," or "High" was given to Each dam to describe its structural condition and on-site safety issue with "high" being those in the worst condition and/or abandoned (Table 1).

This information was used to complete the criteria worksheet developed by New York's Strategic Plan for Barrier Mitigation. The structural condition of a dam is one factor to consider when identifying removal candidates since there is likely to be less resistance to removing an abandoned, deteriorating dam as opposed to one in good condition providing a needed service to a community. Rankings of potential structural and on-site safety issues are provided in APPENDIX 2.

The New York State Strategic Plan for Barrier Mitigation work sheet used in this project was developed by a group of Federal, State and non-governmental partners has developed a "Criteria" screening tool to evaluate potential barrier mitigation sites as part of a Strategic Plan for Barrier Mitigation for New York State. Completed worksheets for identified high priority dams are available electronically upon request.

The identification of dams that could be considered as a high priority for removal or mitigation projects relied heavily on NYSDEC's Great Lakes Regional Fisheries Managers' expert knowledge of the type of migratory fish present in these tributaries and the availability of spawning habitat above these barriers. NYRU staff met with NYSDEC

fishery managers to discuss key fishery issues related to each dam within their area of responsibility.

U.S. EPA Region 2 and NYSDEC staff familiar with Great Lakes fish and sediment contaminant issues were also consulted to determine if any contaminated sediment issues were associated with identified high priority dams.

The final list of dams identified as a high priority for future evaluations meet the following criteria:

- located on tributaries that support important native species and/or sport fish;
- no longer serve a useful purpose;
- show signs of structural deterioration and on-site safety issues;
- no contaminated sediment issues above the dam;
- further review supported by NYSDEC fishery managers

NYRU staff developed estimates of the costs to remove these dams based on their experience with dam removal projects and site-specific conditions. APPENDIX 5 and APPENDIX 6 provides an overview of the permits that may be required before a dam removal plan can be implemented.

Table 1. Qualitative Dam Structural & Safety Ranking Criteria

RANK	
High	Numerous potential structural & safety concerns High amount of land erosion along and around dam Potential unsafe areas (e.g. debris clot exposed intakes) High amount of debris collecting on dam Stagnant water impounded
Medium	Some potential structural & safety concerns Medium amount of land erosion along and around dam Potential unsafe areas (e.g. exposed intakes) Medium amount of debris collecting on dam Minimal amount stagnant water impounded
Low	No apparent structural & safety concerns Minimal amount of land erosion along and around dam No apparent safety concerns Low amount of debris collecting on dam Little or no stagnant water impounded

Results

Table 2 summarizes the information on those dams that should be considered a high priority for further evaluation based on this study's ranking criteria. Details on each of these dams are provided below.

APPENDIX 2 shows the ranking of the need for further evaluation for all of the dams considered. The "Medium" ranking was given to dams that are not in serious state of disrepair but were not located on tributaries that are considered to support important fish species. Dams with "Low" rankings are often located on intermittent and extremely shallow streams that have little potential to support fish.

APPENDIX 2 notes that a few of the dams listed on the Cornell University Hydroecology and Conservation Mapping database no longer exist or are located on streams that no longer exist. Two examples of these kinds of barriers are Irvin Warning Farm Pond Dam, which was spring fed, and May Rod and Gun Club Dam, a former impoundment for raising fish.

Table 2. Highest Ranking Priorities Dams for Fish Passage

Dam/Stream	Location Town/County	Potential Upstream Habitat (miles)	Key Species	Estimated Removal Cost
Monitor Mills Dam/South Sandy Creek	Ellisburg/Jefferson County	21	AE,SH,PS	\$50K-\$250K
Webster Dam/Sandy Creek	Adams/Jefferson County	1	AE,SH	\$60K-\$100K
Youngs Mill Dam/Black Creek	Mexico/Oswego	11	AE,SH,PS	\$50K-\$100K
Ames Mill Dam/Little Salmon River	Mexico/Oswego	1.5	AE,AS,PS,BKT	\$40K-\$100K
Little Salmon Dam/Little Salmon River	Mexico/Oswego	11.5	AE,AS,PS,BKT	\$40K-\$100K
Fernwood Dam/Grindstone Creek	Fernwood/Oswego	17	AE,AS,PS,BKT	\$300K-\$800K

Key:

- AE - American eel
- AS - Atlantic salmon
- BKT - Brook trout
- PS - Pacific salmon
- SH - Steelhead trout

Eastern Lake Ontario Basin (NYSDEC Region 6)

Region 6 has a total of 11 dams that were evaluated. Of these 11 dams, 6 of the dams are ranked as high priority dams and only 3 have potentials for fish passage based on removal of these barriers.

Monitor Mills Dam, (Barrier ID 080-0043)

South Sandy Creek, Ellisburg, Jefferson County

This privately owned gravity type dam was constructed in 1905 out of cement blocks, stone and masonry. It is approximately 8' tall and 230' long. It is currently abandoned and no longer serving its original purpose. This dam can be accessed through the adjoining landowner's field via a dirt road.

Steelhead trout, Pacific salmon and American eel are among the migratory fish in this creek downstream of this dam. Special consideration would need to be given to Sea lamprey present in this creek to ensure that dam removal would not produce increased sea lamprey spawning habitat. Removal of this barrier would provide 21 miles of spawning grounds and habitat for these migratory fish in the main stem of the river. There are no known contaminated sediment issues associated with this dam. An estimated cost for the removal of this dam is around \$50,000 to \$250,000.



Figure 1. Monitor Mills Dam, South Sandy Creek, Ellisburg.

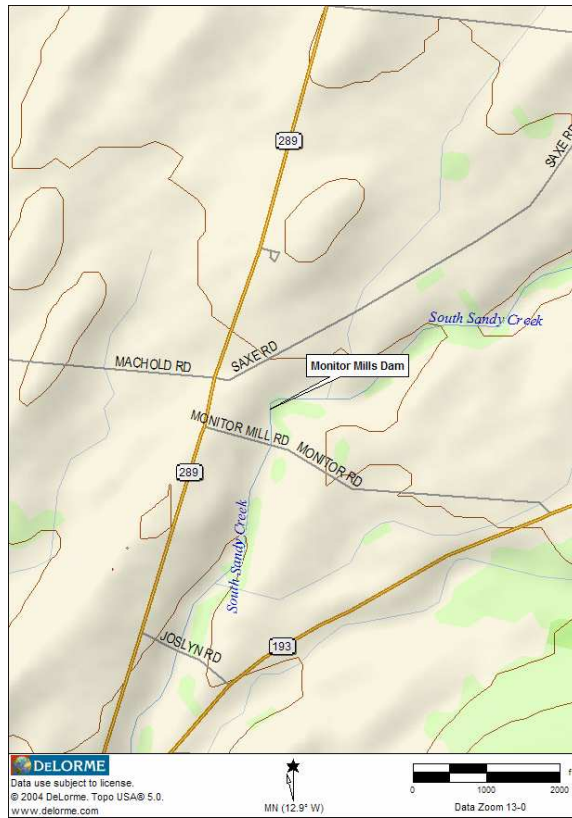


Figure 2. Monitor Mills Dam Location

Webster Dam, (Barrier ID 079-0109)
Sandy Creek, Adams, Jefferson County

This is a privately owned gravity type dam constructed in 1825 out of blocks, stones and masonry. It is currently abandoned and no longer serving its original purpose. It is approximately 8' tall and 400' long. There are no known contaminated sediment issues associated with this dam. Access to this dam is through the town roads on either side of the dam.

Steelhead trout and American eel are among the migratory fish in this creek downstream of this dam. Historically Atlantic salmon had been present in this creek. Removal of this dam would add approximately 1 mile of additional spawning habitat to the next barrier (Taft Hydroelectric dam [FERC]). APPENDIX 4 provides information on the FERC process. An estimated cost for the removal of this dam is around \$60,000 to \$100,000.



Figure 3. Webster Dam, Sandy Creek, Adams

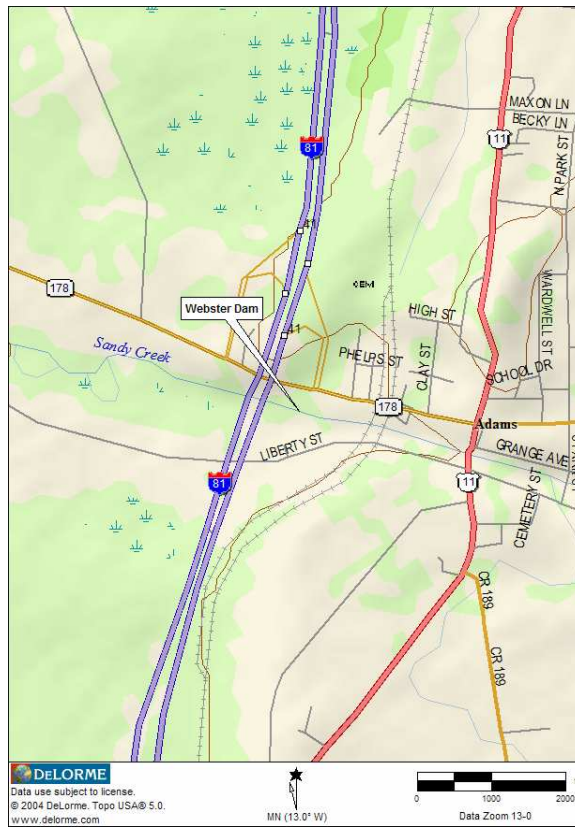


Figure 4. Webster Dam Location

East Central Lake Ontario Basin (NYSDEC Region 7)

Region 7 has a total of 20 dams that were evaluated. Of these 20 dams, 8 of these dams are ranked as high priority dams and only 5 dams have potentials for fish passage based on removal of these barriers.

Youngs Mill Dam, (Barrier ID 081-0190)

Black Creek, Mexico, Oswego County

This is a privately owned gravity type dam constructed in 1860 out of stone and masonry. Its original purpose was for recreation. It is currently abandoned and no longer serving its original purpose. It is approximately 15' tall and 75' long. There are no known contaminated sediment issues associated with this dam. County route 104/3 crosses over dam structure and access is through the neighboring school on one side of the dam.

Steelhead trout, Pacific salmon and American eel are among the migratory fish located in this creek downstream of this dam. NYSDEC Fishery managers feel that the removal of this dam would increase migratory fish habitat and might serve as a suitable location for Atlantic salmon reintroduction efforts. Special consideration would need to be given to Sea lamprey present in this creek to ensure that dam removal would not produce increased sea lamprey spawning habitat. The removal of this dam would open up 11 miles of spawning habitat. An estimated cost for the removal of this dam is around \$50,000 to \$100,000. Reconstruction of a bridge above the dam will increase the project cost.



Figure 5. Youngs Mill Dam, Black Creek, Mexico

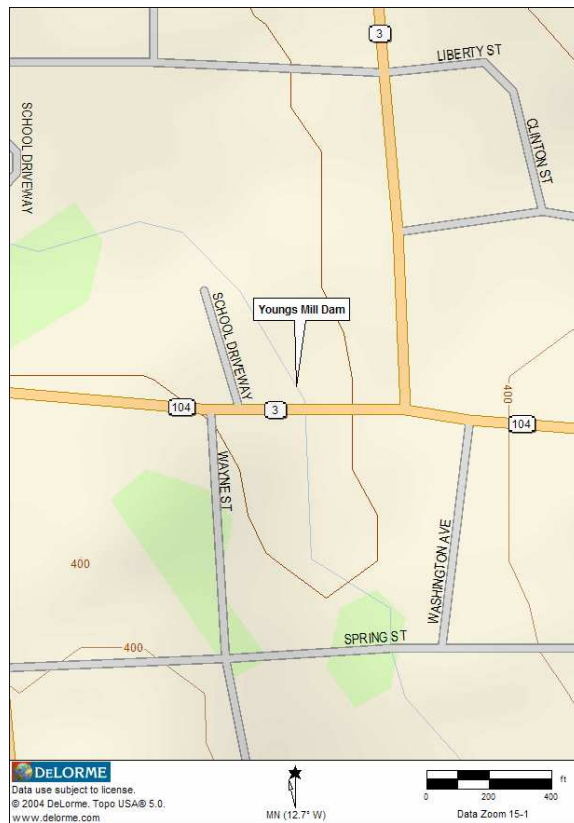


Figure 6. Youngs Mill Dam Location

Ames Mill Dam, (Barrier ID 081-0185)
Little Salmon River, Mexico, Oswego County

This is a privately owned laid-up type dam constructed in 1913 out of stone and masonry. This dam is currently abandoned and no longer serving its original purpose. It is approximately 10' tall and 107' long. There are no known contaminated sediment issues associated with this dam. Access to this dam is through a private Canadian Rod and Gun club.

Steelhead trout, Pacific salmon, suckers, American eel, native Brook trout and Atlantic salmon are among the migratory fish located in this creek downstream of this dam. The removal of Ames Mill Dam would provide 1.5 miles of spawning habitat for migratory fish up to Little Salmon Dam, the second upstream barrier. NYSDEC Fishery managers feel that the removal of the Ames Mill Dam would increase Steelhead trout, Pacific salmon and American eel spawning habitat and could serve as a potential location for Atlantic salmon reintroduction efforts. Special consideration would need to be given to Sea lamprey present in this river to ensure that dam removal would not produce increased sea lamprey spawning habitat. Atlantic salmon, native Brook trout and American eel were historically present in this river. An estimated cost for the removal of this dam is around \$40,000 to \$100,000.



Figure 7. Ames Mill Dam, Little Salmon River, Mexico

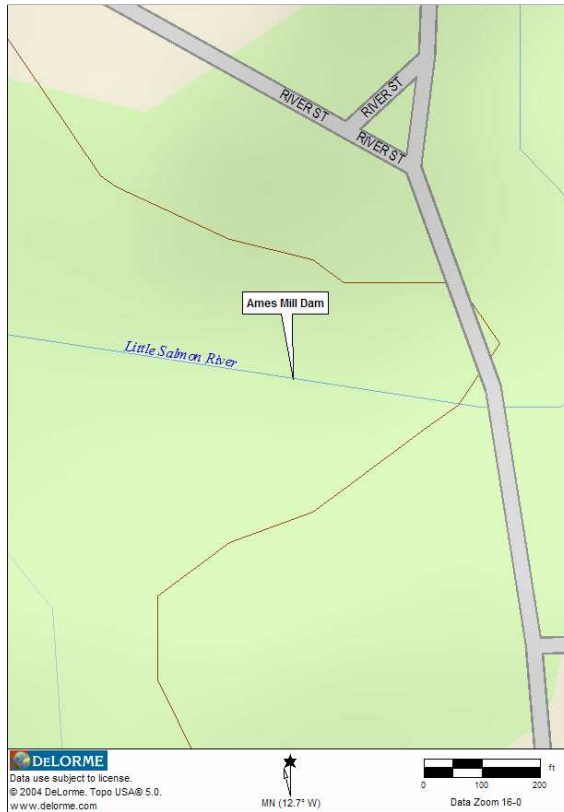


Figure 8. Ames Mill Dam Location

Little Salmon Dam, (Barrier ID 081-0191)

Little Salmon River, Mexico, Oswego County

This is a privately owned laid-up type dam constructed in 1895 out of stone and masonry. This dam is currently abandoned and no longer serving its original purpose. It is approximately 11' tall and 65' long. There are no known contaminated sediment issues associated with this dam. Access to this dam is through a municipal parking lot adjacent to the dam.

Migratory fish currently cannot reach this dam due to the Ames Mill Dam approximately 1.5 mile downstream. However the removal of Ames Mill Dam discussed above would provide migratory fish to this dam. Migratory fish such as Steelhead trout, Pacific salmon, suckers, American eel, native Brook trout and Atlantic salmon were once common along this reach. NYSDEC Fishery managers feel that the removal of this dam would provide an additional 11.5 miles of migratory fish-spawning habitat with the potential for raising Atlantic salmon. Special consideration would need to be given to Sea lamprey present in this river to ensure that dam removal would not produce increased sea lamprey spawning habitat. Atlantic salmon, native Brook trout and American eel were historically present in this river. An estimated cost for the removal of this dam is around \$40,000 to \$100,000.



Figure 9. Little Salmon Dam, Little Salmon River, Mexico

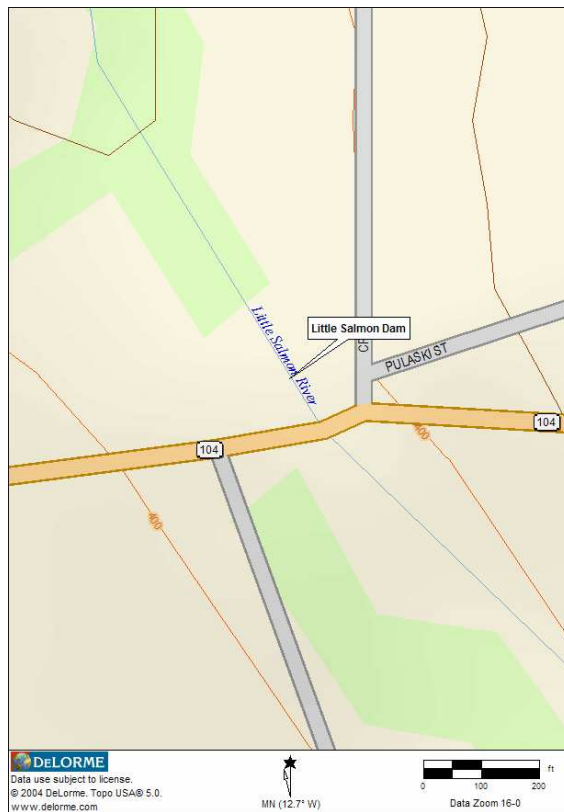


Figure 10. Little Salmon Dam Location

Fernwood Dam, (Barrier ID 081-0166)
Grindstone Creek, Fernwood, Oswego County

This is a privately owned gravity type dam constructed in 1826 out of stone and masonry that is currently in operation and producing power. It is approximately 15' tall and 116' long. There are no known contaminated sediment issues associated with this dam. Access to this dam is through private land owners adjacent to the dam.

Migratory fish such as Atlantic salmon, American eels, Steelhead trout, native Brook trout, Small mouth bass, and Walleye pike are common below this barrier. NYSDEC Fishery managers feel that the placement of a fish ladder on this dam would increase American eels, Steelhead trout, and native Brook trout spawning habitat and would have potential for raising Atlantic salmon. Atlantic salmon, native Brook trout and American eel were historically present and the installation of a fish ladder would be beneficial for these three species as well as the other migratory fish. This fish ladder would open up 17 miles of spawning habitat to Happy Valley Wildlife Management area. An estimated cost for the installation of a fish ladder is between \$300,000 and \$800,000 depending on the engineering cost and the complexity of the project.



Figure 11. Fernwood Dam, Grindstone Creek, Fernwood

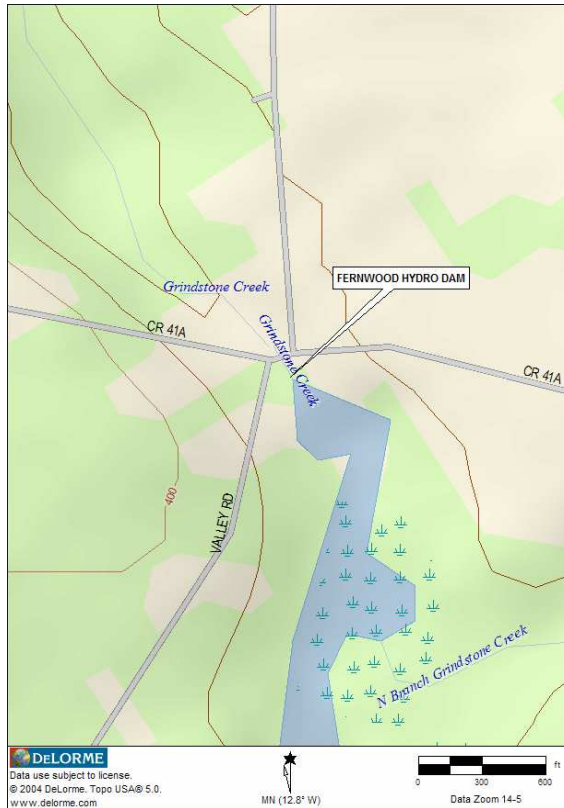


Figure 12. Fernwood Dam Location

West-Central Lake Ontario Basin (NYSDEC Region 8)

None of the 8 dams evaluated in Region 8 were selected as a high priority due to the fact all are associated with tributaries with little potential to support migratory fish. Fishery managers have determined that low flows and high water temperatures in these tributaries severely limit the ability of these tributaries to support fish. Several of the dams are located on intermittent streams that are often shallow and too warm to support migratory fish of any kind, often dry in the summer months and will not support any spawning habitat during the winter months.

Western Lake Ontario/Eastern Lake Erie Basin (NYSDEC Region 9)

Region 9 has a total of 31 dams that have been evaluated. Of these 31 dams, only 1 dam was within the Lake Ontario basin. Eighteenmile Creek is the major tributary in this region and supports an important steelhead and brown trout fishery. The removal of Eighteenmile Creek’s Newfane dam to increase fish spawning habitat is not an option due to the presence of highly contaminated sediments (PCBs and heavy metals) in the sediments trapped behind the dam. The area below the barrier has been an undergoing project for the restoration and stabilization of the stream to assure high quality habitat for steelhead trout and brown trout.

Recommendations

The Lake Ontario Lakewide Management Plan and its partners should:

- coordinate a more in depth assessment of these 6 high priority dams working closely with federal, state and community governments and non-governmental organizations.
- adopt a goal of restoring 63 miles of upstream fish passage by 2015.
- explore ways to streamline New York State's dam removal permitting process for relatively small low head dams.
- assist in the identification of potential funding sources for dam removal and mitigation projects.

Dam Removal Permit Process

The determination of what types of permits for dam removal needed vary according to several factors, such as, the structure height, location, and the affect the barrier removal will have on water quality. Most small, non-power dam are low head dams (under 6 feet tall) and will not require certain types of permits. The most common permits needed for barrier mitigation may be applied for by using the Joint Application for Permit provided by New York State Army Corps of Engineers, see APPENDIX 5. Other permits, such as, barrier construction, reconstruction or repair permits may be obtained through New York State Department of Conservation, see APPENDIX 6.

1. ACE- Section 404
2. Rivers and Harbors (section 10), (wetlands)
3. New York State Dam Safety- Dam Safety Permit
4. NYS DEC: NY Code of Rules and Regulations 608 Permit (bed and banks)
5. 401 Water Quality Certification
6. NY State Environmental Quality Review Act (SEQR)

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http://www.glsc.usgs.gov/main.php?content=research_lamprey&title=Invasive%20Fish0&menu=research_invasive_fish

US Fish and Wildlife, March 2006, Conserving America's Fisheries, Fish Passage Decision Support System, <http://fpdss.fws.gov/index.jsp>
Types of permits that may be required for dam removal.

Cornell University Hydroecology and Conservation Mapping model, November, 2003
<http://www.dnr.cornell.edu/hydro2/grtlks.htm>

APPENDIX

APPENDIX 1. Dams Location By Regions

DEC Region 6

County	Dam Name	River	Latitude			Longitude		
			Deg.	Min.	Sec.	Deg.	Min.	Sec.
Jefferson	Kellers Dam	Skinner Creek	43	42	35	76	3	42
Jefferson	Bear Creek Dam	Bear Creek	43	44	24	76	2	25
Jefferson	Monitors Mills Dam	South Sandy Creek	43	44	47	76	7	33
Jefferson	Northern NY Trust Co. Dam	TR-Totman Gulf	43	46	0	76	0	26
Jefferson	Webster Dam	Sandy Creek	43	48	39	76	1	59
Jefferson	Taft Hydroelectric Dam	Sandy Creek	43	48	24	76	1	9
Jefferson	Brookside Cemetery Dams A,B,C,D Dams	Mill Brook	43	56	13	75	55	0
Jefferson	Perch River Wildlife Refuge Dam	Perch River	44	4	24	76	0	18
Jefferson	Stone Mills Dam	Perch River	44	5	39	75	57	30
Jefferson	La Fargeville Dam	Chaumont River	44	11	36	75	57	54
Jefferson	May Rod & Gun Club Pond Dam	Mud Creek	44	7	46	76	14	4
St. Lawrence	Mill Dam	Grass River	44	44	48	75	7	54

DEC Region 7

County	Dam Name	River	Latitude			Longitude		
			Deg.	Min.	Sec.	Deg.	Min.	Sec.
Oswego	Mosher Dam	N Branch Grindstone Creek	43	28	6	76	0	30
Oswego	Frederick Britton Wildlife Marsh Dam	TR- N Branch Little Salmon	43	27	56	75	58	6
Oswego	Clayton Fellows Dam	TR- Little Salmon River	43	23	40	76	7	32
Oswego	Fernwood Dam	Grindstone Creek	43	29	42	76	9	3
Oswego	Harold Wagner Pond Dam	TR- Little Salmon River	43	23	0	76	8	50
Oswego	Young Mill Dam	Black Creek	42	51	26	77	6	33
Oswego	Little Salmon Dam	Little Salmon River	43	27	36	76	13	39
Oswego	Grays Mill Dam	Spring Creek	43	24	10	76	10	6
Oswego	Joseph Goldman Dam	TR- Grindstone Creek	43	29	12	76	1	39
Oswego	Harry Nicholson Pond Dam	TR- Lake Ontario	43	29	25	76	11	30
Oswego	Ames Mill Dam	Little Salmon River	43	28	1	76	14	20
Oswego	J Bulger Pond Dam	TR- Little Deer Creek	43	35	55	76	7	57
Oswego	Marshal Minot Pond Dam	TR- Spring Brook	43	34	0	76	4	32
Oswego	Oswego Co Hospital Ice Pond Dam	Front Brook	43	34	43	76	1	27
Oswego	080-0097		43	37	58	76	3	20
Oswego	Oswego Barge Canal Lock 8	Oswego River	43	27	25	76	30	34
Oswego	Robert Scott Dam	TR- Sterling Creek	43	18	50	76	35	58
Oswego	Rhoades Dam	Sterling Valley Creek	43	17	7	76	35	41
Oswego	Pulaski Dam	Spring Brook	43	33	57	76	6	48
Cayuga	Marion Teachout Wildlife Marsh Dam	TR- Sterling Valley Creek	43	18	42	76	37	42

DEC Region 8

County	Dam Name	River	Latitude			Longitude		
			Deg.	Min.	Sec.	Deg.	Min.	Sec.
Ontario	Cobblestone Creek Dam	White Brook	43	1	10	77	24	40
Monroe	Rochester Gas & Electric Corp Dam	Genesee River	43	10	48	77	37	40
Orleans	Holley Power Plant Dam	Station Creek	43	13	17	78	1	22
Genesee	Long Marsh Dam	TR- Oak Orchard Swamp	43	6	30	78	20	18
Genesee	Iroquois National Refuge Dam	TR- Oak Orchard Swamp	43	6	48	78	20	0
Orleans	Spring Marsh Dam	Mud Creek	43	8	18	78	27	6
Genesee	Kubik Wildlife Dam	TR- Durkee Creek	42	53	6	78	27	5
Monroe	Shone and Cook Pond Dam		42	57	3	77	30	54
Wayne	Compiling information							

DEC Region 9

County	Dam Name	River	Latitude			Longitude		
			Deg.	Min.	Sec.	Deg.	Min.	Sec.
Cattaraugus	Clarence Hess Pond Dam	TR-Cattaraugus Creek	42	22	54	78	50	45
Cattaraugus	Elizabeth Dabolt W L Pond Dam	TR-Cattaraugus Creek	42	30	20	79	1	35
Cattaraugus	H Tigler Wildlife Dam	S Branch Cattaraugus Creek	42	23	40	78	48	49
Cattaraugus	John Charles Eberhardt Dam	TR- King Brook	42	30	0	78	31	57
Cattaraugus	Stuart Klahn Dam	TR- East Otto creek	42	22	24	78	43	36
Cattaraugus	Willis Allen Jr Dam	S Branch Cattaraugus Creek	42	24	1	78	54	29
Chautauqua	Haberer and Black Dam		42	20	47	79	34	3
Erie	Arlington Lancaster Pond Dam	TR- East Cazenovia Creek	42	34	56	78	29	42
Erie	Clarence Roller Mill Dam	Ransom Creek	42	58	44	78	35	5
Erie	Erie Board of Supervisors Farm Dam	TR- Eighteenmile Creek	42	33	48	78	39	29
Erie	Greis Dam	Buffalo Creek	42	51	32	78	42	29
Erie	Higgins Pond Dam	TR- Eighteenmile Creek	42	41	24	78	43	19
Erie	Irvin Warning Farm Pond Dam	TR- Cazenovia Creek	42	47	26	78	43	57
Erie	Lancaster County Club Dam	Cayuga Creek	42	53	26	78	37	35
Erie	O'Dell Marsh Dam	TR- Hosmer Brook	42	33	24	78	29	54
Erie	Palmers Dam	TR_ Cayuga Creek	42	54	17	78	39	58
Erie	Pfarmers Pond Dam	East Branch Cazenovia Creek	42	35	5	78	29	0
Erie	Raymond May Pond Dam	TR- Ellicott Creek	42	53	25	78	28	58
Erie	Robert Perrin Pond Dam	TR- East Branch Cazenovia Creek	42	44	19	78	34	19
Erie	Raymond Benz Pond Dam	TR- Eighteenmile Creek	42	42	47	78	47	43
Erie	Robert Kenworthy Pond Dam	TR- East Branch Cazenovia Creek	42	43	1	78	33	52
Erie	Rowley Dam	Buffalo Creek	42	51	24	78	38	0
Erie	Spring Reservoir Dam	Spring Brook	42	31	39	78	39	46
Erie	Tillman Road Dam	Ransom Creek	42	57	58	78	36	23

Erie	Walla Marsh Dam	TR- Cazenovia Creek	42	34	46	78	39	8
Erie	Walter Siwiec Pond Dam	TR- West Cazenovia Creek	42	44	17	78	40	46
Erie	West Fall Mill Dam	West Branch Cazenovia Creek	42	42	9	78	40	46
Niagara	Newfane Dam	Eighteenmile Creek	43	16	43	78	42	28
Wyoming	Big Tree Development Center Dam	TR- Cayuga Creek	42	46	2	78	22	35
Wyoming	Stevens Reservoir Dam	Tonawanda Creek	42	50	13	78	15	18
Wyoming	Village of Attica Dam	Tonawanda Creek	42	52	0	78	17	0

APPENDIX 2. Dams Ranked By Priorities In Their Region

Region 6		
Rank	Dam Name	Location
High	Bear Creek Dam	Bear Creek
High	Brookside Cemetery Dams A,B,C,D Dams	Mill Brook
High	Kellers Dam	Skinner Creek
High	LaFargeville Dam	Chaumont River
High	Monitor Mills Dam	South Sandy Creek
High	Webster Dam	Sandy Creek
Medium	Stone Mills Dam	Perch River
Medium	Taft Hydro	Sandy Creek
Medium	Perch River Wildlife Refuge	Perch River
Low	May Rod & Gun Club Pond Dam	Mud Creek
CNL	Northern NY Trust Co. Dam	TR-Totman Gulf

Region 7		
Rank	Dam Name	Location
High	Clayton Fellows Dam	TR- Little Salmon River
High	Fernwood Dam	Grindstone Creek
High	J Bulger Pond Dam	TR- Little Deer Creek
High	Little Salmon Dam	Little Salmon River
High	Mosher Dam	N Branch Grindstone Creek
High	Pulaski Dam	Spring Brook
High	Young Mills Dam	Black Creek
High	Marion Teachout Dam	TR- Sterling Valley Creek
Medium	Ames Mill Dam	Little Salmon River
Medium	Frederick Britton Wildlife Marsh Dam	TR- N Branch Little Salmon
Medium	Harold Wagner Pond Dam	TR- Little Salmon River
Low	080-0097	
Low	Marshal Minot Pond Dam	TR- Spring Brook
Low	Oswego Co Hospital Ice Pond Dam	Front Brook
Low	Rhoades Dam	Sterling Valley Creek
Low	Robert Scott Pond Dam	TR- Sterling Creek
Low	Harry Nicholson Pond Dam	TR- Lake Ontario
Low	Oswego Barge Canal Lock 8 Dam	Oswego River
CNL	Grays Mill Dam	Spring Creek
CNL	Joseph Goldman Dam	TR- Grindstone Creek

Region 8		
Rank	Dam Name	Location
Medium	Kubik Wildlife Dam	TR- Durkee Creek
Low	Shone and Cook Pond Dam	TR- Durkee Creek
Low	Holley Power Plant Dam	Station Creek
Low	Long Marsh Dam	TR- Oak Orchard Swamp
Low	Iroquois National Refuge Dam	TR- Oak Orchard Swamp
Low	Rochester Gas & Electric Corp Dam	Genesee River

Low	Spring Marsh Dam	Mud Creek
CNL	Cobblestone Creek Dam	White Brook

Region 9

Rank	Dam Name	Location
High	Big Tree Development Center Dam	TR- Cayuga Creek
High	Clarence Roller Mill Dam	Ransom Creek
High	Greis Dam	Buffalo Creek
High	Lancaster Country Club Dam	Cayuga Creek
High	Rowley Dam	Buffalo Creek
High	Stevens Reservoir Dam	Tonawanda Creek
High	West Fall Mill Dam	West Branch Cazenovia Creek
Medium	Village of Attica Dam	Tonawanda Creek
Low	Clarence Hess Pond Dam	TR-Cattaraugus Creek
Low	Elizabeth Dabolt W L Pond Dam	TR-Cattaraugus Creek
Low	H Tigler Wildlife Dam	S Branch Cattaraugus Creek
Low	John Charles Eberhardt Dam	TR- King Brook
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Low	Erie Board of Supervisors Farm Dam	TR- Eighteenmile Creek
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Low	Newfane Dam	Eighteenmile Creek
Low	Pfarners Pond Dam	East Branch Cazenovia Creek
Low	Robert Perrin Pond Dam	TR- East Branch Cazenovia Creek
Low	Robert Kenworthy Pond Dam	TR- East Branch Cazenovia Creek
Low	Spring Reservoir Dam	Spring Brook
Low	Higgins Pond Dam	TR- Eighteenmile Creek
Low	Raymond Benz Pond Dam	TR- Eighteenmile Creek
Low	Tillman Road Dam	Ransom Creek
CLN	Willis Allen Jr Dam	S Branch Cattaraugus Creek
CLN	Haberer and Black Dam	
CLN	O'Dell Marsh Dam	TR- Hosmer Brook
CLN	Palmer's Dam	TR- Cayuga Creek
CLN	Walla Marsh Dam	TR- Cazenovia Creek
CLN	Walter Siwiec Pond Dam	TR- West Cazenovia Creek
CLN	Raymond May Pond Dam	TR- Ellicott Creek

APPENDIX 3. Why Dams Damage Rivers

Few Human actions have more significant impacts on a river system than the presence of a dam. As a result, dams occupy a central role in the debate about protecting and restoring our river resources. Although dams can provide societal benefits, such as flood control, irrigation, and recreation opportunities, dams also cause negative impacts to rivers, wildlife, and sometimes local communities. Many dams no longer provide benefits, are old and/or unsafe, are abandoned, and cost too much to maintain. Listed below are some reasons why dams damage our rivers.

- **Dams reduce river levels**
 - By diverting water for power, dams remove water needed for healthy in-stream ecosystems. Stretches below dams are often completely de-watered.
- **Dams block rivers**
 - Dams prevent the flow of plants and nutrients, impede the migration of fish and other wildlife, and block recreational use. Fish passage structures can enable a percentage of fish to pass around a dam, but multiple dams along a river make safe travel unlikely
- **Dams slow rivers**
 - Many fish species, such as salmon, depend on steady flows to flush them downriver early in their life and guide them upstream years later to spawn. Stagnant reservoir pools disorient migrating fish and significantly increase the duration of their migration.
- **Dams alter water temperature**
 - By slowing water flow, most dams increase water temperatures. Other dams decrease temperatures by releasing cooled water from the reservoir bottom. Fish and other species are sensitive to these temperature irregularities, which often destroy native populations.
- **Dams alter timing of flows**
 - By withholding and then releasing water to generate power for peak demand periods, dams cause downstream stretches to alternate between no water and powerful surges that erode soil and vegetation, and flood or strand wildlife. These irregular releases destroy natural seasonal flow variations that trigger natural growth and reproduction cycles in many species.
- **Dams decrease oxygen levels in reservoir waters**
 - When oxygen-deprived water is released from behind the dam, it kills fish downstream.
- **Dams hold back silt, debris, and nutrients**
 - By slowing flows, dams allow silt to collect on river bottoms and bury fish spawning habitat. Silt trapped above dams accumulates heavy metals and other pollutants. Gravel, logs and other debris are also trapped by dams, eliminating their use downstream as food and habitat. (American Rivers, 2000)

Dams do not have any positive impacts to river and environmental habitat. They simply encumber the natural flow regime in which it disrupts aquatic and riparian ecosystems from enduring their natural state. By removing dams that are old, no longer in use, unsafe, and harmful to the environment; native fish and wildlife will come back and establish themselves once more.

APPENDIX 4. Dams Associated With Federal Energy Regulatory Commission

Evaluation of First Barriers – Lake Ontario Basin in New York State Dams Associated With Federal Energy Regulatory Commission

Submitted by Bruce Carpenter
Executive Director
New York Rivers United

Many of the first barrier structures that are currently located on Lake Ontario tributaries are hydro dams regulated by the Federal Energy Regulatory Commission (FERC). These dams will not be studied as part of our current evaluation and EPA grant. I will explain and give some context as to why not.

FERC Licenses

Congress created FERC to license and manages oil and gas pipelines and hydroelectric generation and distribution. FERC was given authority to license hydro generation projects. These licenses extend for 30 to 50 years. There are no exemptions for 1st barrier dams along Lake Ontario.

The licensing process maintains a necessary balance of authority among federal and state agencies. While FERC directs and controls the licensing process, state and federal resource agencies provide specific and important natural resources expertise that FERC is not equipped to supply. As a result, state and federal agencies are empowered by the law to recommend, and in some cases require, certain operating conditions in order for a dam to receive a license.

The general timeline for the standard licensing process is as follows:

- Five years before its license expires, a utility notifies FERC that it intends to seek a new license. It then develops an application which provides important data on the environmental and recreational impacts of its dam(s) and identifies areas for further study. Extensive research then begins.
- Two years before its license expires, a utility submits a formal application to FERC detailing how the utility proposes to operate its dam(s). Other government agencies and citizens groups can comment on this application and recommend, and in some cases require, conditions for dam operations. The Commission then conducts an environmental impact statement.
- FERC approves the license if it is deemed “in the public interest.” The license must protect fish and wildlife, meet water quality standards, provide fish passage if necessary, protect surrounding lands, and improve recreation opportunities. The final license decision can be appealed to FERC, or beyond, to federal courts.

The main issue with regard to this report is FERC’s responsibility to protect natural resource

values. In licensing facilities, FERC is required by law to ensure that hydro plants comply with all existing plans and environmental laws. This “balancing” of resource values with those of hydro generation has often been criticized but it remains the law.

Federal Power Act Section 10(a) Conditions for Protection, Mitigation, and Enhancement of Environmental Quality

Under FPA section 10(a)(1), a project must serve the public interest in a river basin, not just the licensee's interest in power generation. A license must ensure that the project adopted "shall be such as in the judgment of the Commission will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate or foreign commerce, for the improvement and utilization of water-power development, for the adequate protection, mitigation, and enhancement of fish and wildlife (including related spawning grounds and habitat), and for other beneficial public uses, including irrigation, flood control, water supply, and recreational and other purposes."

The second aspect of hydro licenses that comes into play is the role of resource agencies. In both new licenses and relicensing of existing facilities resource protection is a major concern of the agencies, both federal and state.

Federal Power Act Section 10(j) Conditions for Protection, Mitigation, and Enhancement of Fish and Wildlife Resources

Unlike FPA section 10(a), which balances energy generation and all other beneficial uses of the affected river, FPA section 10(j) requires that a license "adequately and equitably protect, mitigate damages to, and enhance, fish and wildlife (including related spawning grounds and habitat) affected by the development, operation, and management of the project." NMFS, FWS, or a state fish and wildlife department may recommend such conditions. If submitted in a timely manner, all such conditions must be included in the license, unless FERC makes written findings that: (1) a given condition is inconsistent with the purposes of the FPA Part I; and (2) the alternative condition adopted by FERC provides the protection, mitigation, and enhancement required by FPA section 10(j)(1).

But for the purposes of this report the single most important part of the Federal Power Act is Section 18 authority.

Federal Power Act Section 18 Fishway Prescription

Under FPA section 18, FWS or NMFS may prescribe a facility for fish passage (such as a fish ladder or a trapping site), operation and maintenance of the facility, and any other conditions necessary to ensure effective passage. A Section 18 prescription applies to upstream or downstream passage, and diadromous or riverine fish and aquatic species such as eels and mussels. The agency may also reserve its authority to adopt or amend a prescription after

license issuance. This authority may not directly address the impact of fish entrainment unrelated to passage facility, since that impact is instead within the scope of FPA section 10(j) or (a). A Section 18 prescription may address entrainment indirectly, by trying to maximize the efficiency and safety of a downstream fishway. Further, the agency may not use this authority to veto the license in the event that passage is infeasible.

State Involvement -- Clean Water Act Section 401

Under Clean Water Act (CWA) Section 401, FERC may license a hydropower project only if the State certifies that the project will comply with water quality standards. Depending on water quality standards in individual states, the water quality certification can establish a variety of conditions. FERC must include in the license any conditions that the State requires in its water quality certification.

New York State has used its “401” power to regulate flow and to provide for fish protection.

Conclusion

While many of the first barriers are currently operating hydro, we do not review them here based on the Federal Power Act. FERC in its regulatory role must and will look at these issues in licensing, relicensing or in amendments that may be brought to FERC by the resource agencies. If fish passage is needed at any of the facilities, it has or will be brought before FERC.

Partial list of New York Great Lakes Basin Rivers with of First Barrier Hydro Dams:

Orchard Creek	Oswego River
Salmon River	Black River
Oswegatchie River	Raquette River
St. Regis River	St. Lawrence River

**** Parts of text taken from Hydropower Reform Coalition –Tool Kit**

APPENDIX 5. Barrier Mitigation Permit

JOINT APPLICATION FOR PERMIT				New York State United States Army Corps of Engineers																																																																																															
95-19-3 (8/00) pfp																																																																																																			
Applicable to agencies and permit categories listed in Item 1. Please read all instructions on back. Attach additional information as needed. Please print legibly or type.																																																																																																			
1. Check permits applied for: NYS Dept. of Environmental Conservation <input type="checkbox"/> Stream Disturbance (Bed and Banks) <input type="checkbox"/> Navigable Waters (Excavation and Fill) <input type="checkbox"/> Docks, Moorings or Platforms (Construct or Place) <input type="checkbox"/> Dams and Impoundment Structures (Construct, Reconstruct or Repair) <input type="checkbox"/> Freshwater Wetlands <input type="checkbox"/> Tidal Wetlands <input type="checkbox"/> Coastal Erosion Control <input type="checkbox"/> Wild, Scenic and Recreational Rivers <input type="checkbox"/> 401 Water Quality Certification <input type="checkbox"/> Potable Water Supply <input type="checkbox"/> Long Island Wells <input type="checkbox"/> Aquatic Vegetation Control <input type="checkbox"/> Aquatic Insect Control <input type="checkbox"/> Fish Control NYS Office of General Services (State Owned Lands Under Water) <input type="checkbox"/> Lease, License, Easement or other Real Property Interest Utility Easement (pipelines, conduits, cables, etc.) <input type="checkbox"/> Docks, Moorings or Platforms (Construct or Place) Adirondack Park Agency <input type="checkbox"/> Freshwater Wetlands Permit <input type="checkbox"/> Wild, Scenic and Recreational Rivers Lake George Park Commission <input type="checkbox"/> Docks (Construct or Place) <input type="checkbox"/> Moorings (Establish) US Army Corps of Engineers <input type="checkbox"/> Section 404 (Waters of the United States) <input type="checkbox"/> Section 10 (Rivers and Harbors Act) <input type="checkbox"/> Nationwide Permit (s) Identify Number(s)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="padding: 2px;">2. 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Further, the applicant accepts full responsibility for all damage, direct or indirect, of whatever nature, and by whomever suffered, arising out of the project described herein and agrees to indemnify and save harmless the State from suits, actions, damages and costs of every name and description resulting from said project. In addition, Federal Law, 18 U.S.C., Section 1001 provides for a fine of not more than \$10,000 or imprisonment for not more than 5 years, or both where an applicant knowingly and willingly falsifies, conceals, or covers up a material fact; or knowingly makes or uses a false, fictitious or fraudulent statement. </td> </tr> <tr> <td colspan="2" style="padding: 2px;">Date _____</td> <td colspan="2" style="padding: 2px;">Signature of Applicant _____</td> <td colspan="2" style="padding: 2px;">Title _____</td> </tr> <tr> <td colspan="2" style="padding: 2px;">Date _____</td> <td colspan="2" style="padding: 2px;">Signature of Owner _____</td> <td colspan="2" style="padding: 2px;">Title _____</td> </tr> </table>	2. Name of Applicant (Use full name)		Telephone Number (daytime)		Mailing Address				Post Office		State	Zip Code	3. Taxpayer ID (If applicant is not an individual)				4. 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14. Has Work Begun on Project? (If yes, attach explanation of why work was started without permit.) <input type="checkbox"/> Yes <input type="checkbox"/> No		15. List Previous Permit / Application Numbers and Dates: (If Any)																																																																																																	
16. Will this Project Require Additional Federal, State, or Local Permits? <input type="checkbox"/> Yes <input type="checkbox"/> No		If Yes, Please List:																																																																																																	
17. If applicant is not the owner, both must sign the application I hereby affirm that information provided on this form and all attachments submitted herewith is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law. Further, the applicant accepts full responsibility for all damage, direct or indirect, of whatever nature, and by whomever suffered, arising out of the project described herein and agrees to indemnify and save harmless the State from suits, actions, damages and costs of every name and description resulting from said project. In addition, Federal Law, 18 U.S.C., Section 1001 provides for a fine of not more than \$10,000 or imprisonment for not more than 5 years, or both where an applicant knowingly and willingly falsifies, conceals, or covers up a material fact; or knowingly makes or uses a false, fictitious or fraudulent statement.																																																																																																			
Date _____		Signature of Applicant _____		Title _____																																																																																															
Date _____		Signature of Owner _____		Title _____																																																																																															

APPENDIX 6. Barrier Construction, Reconstruction or Repair Permit

Supplement D-1

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ALBANY, NEW YORK 12233

APPLICATION FOR PERMIT
FOR THE CONSTRUCTION, RECONSTRUCTION OR REPAIR OF A DAM OR OTHER IMPOUNDMENT STRUCTURE
Read instructions on reverse side of last sheet before completing this application. PLEASE TYPE OR PRINT CLEARLY IN INK

FOR DEPARTMENT USE ONLY			
APPLICATION NO.			
DAM NO.			
WATERSHED			
PROJECT DESCRIPTION			
1. LOCATION ON U.S. GEOLOGICAL SURVEY MAP Name of Map _____ Latitude _____ Longitude _____		2. PROPOSED USE FOR IMPOUNDED WATER _____	
3. STATE THE HEIGHT ABOVE SPILLCREST OF THE LOWEST PART OF THE IMMEDIATE UPSTREAM ADJOINING PROPERTY OR PROPERTIES _____ Feet			
4. IS THIS PROPOSED POND OR LAKE PART OF A PUBLIC WATER SUPPLY? If not, where is nearest downstream public water supply intake? <input type="checkbox"/> Yes <input type="checkbox"/> No		5. SIZE OF AREA DRAINING INTO POND OR LAKE (Acres or Square Miles) _____	HEIGHT OF DAM ABOVE STREAM BED? _____ Feet
6. THE DRAINAGE AREA IS COMPOSED OF: (Total = 100%) _____ % Forest _____ % Cropland _____ % Pasture _____ % Other _____ % Swamp _____ % Suburban Lands _____ % Urban Lands			
7. TYPE OF SPILLWAY <input type="checkbox"/> Service Spillway - Auxiliary Spillway Combination <input type="checkbox"/> Single Spillway <input type="checkbox"/> Pip Riser ONLY <input type="checkbox"/> Other _____		8. DESIGNER'S ESTIMATE OF CLASS OF HAZARD (As described in 6NYCRR Part 673) <input type="checkbox"/> Class "A" <input type="checkbox"/> Class "B" <input type="checkbox"/> Class "C" NOTE: Provide descriptive information on character of downstream area.	
9a. SPILLWAY INFLOW DESIGN FLOOD Frequency _____ Flood Peak _____ cfs Runoff Volume _____ in.		9b. SERVICE SPILLWAY INFLOW DESIGN FLOOD Frequency _____ Flood Peak _____ cfs Runoff Volume _____ in.	
10. THE SINGLE SPILLWAY OR AUXILIARY SPILLWAY IS COMPOSED OF: <input type="checkbox"/> Vegetated Earth <input type="checkbox"/> Concrete <input type="checkbox"/> Timber <input type="checkbox"/> Rock-filled Crib <input type="checkbox"/> Masonry <input type="checkbox"/> Other _____			
11. MAXIMUM VELOCITY WITHIN THE SINGLE OR AUXILIARY SPILLWAY _____ fps	12. SINGLE OR AUXILIARY SPILLWAY DISCHARGE AT DESIGN HIGH WATER _____ cfs	13. TYPE OF ENERGY DISSIPATER PROVIDED ON SINGLE SPILLWAY <input type="checkbox"/> Hydraulic Jump Basin <input type="checkbox"/> Drop Structure <input type="checkbox"/> Other _____	
14. POND OR LAKE WILL BE DRAINED BY MEANS OF _____		WATER WILL BE SUPPLIED TO RIPARIAN OWNERS DOWNSTREAM BY MEANS OF _____	
15. AREA CAPACITY DATA Answer 1, 2 and 3, OR 1, 2, 4, 5		ELEVATION, Referred to Assumed Benchmark	
1. Top of Dam _____ Feet		SURFACE AREA _____ Acres	
2. Design High Water _____ Feet		VOLUME STORED _____ Acre-Feet	
3. Single Spillway Crest _____ Feet		_____ Acres _____ Acre-Feet	
4. Auxiliary Spillway Crest _____ Feet		_____ Acres _____ Acre-Feet	
5. Service Spillway Crest _____ Feet		_____ Acres _____ Acre-Feet	
16. TYPE OF ENERGY DISSIPATER AT OUTLET OF CONDUIT: <input type="checkbox"/> Impact Basin <input type="checkbox"/> Hydraulic Jump Basin <input type="checkbox"/> Plunge Pool <input type="checkbox"/> Other _____			
IS RISER PROVIDED WITH AN ANTI-VORTEX DEVICE? <input type="checkbox"/> Yes <input type="checkbox"/> No			
17. DRAWDOWN TIMES: Answer 1 and 2, OR 1, 3, and 4			
1. Has provision been made to evacuate 90% of the storage below the lowest spillway crest within fourteen days? <input type="checkbox"/> Yes <input type="checkbox"/> No		3. Can the Service Spillway evacuate 75% of the storage between the auxiliary spillway and the Service Spillway crest within seven days? <input type="checkbox"/> Yes <input type="checkbox"/> No	
2. Can the single spillway evacuate 75% of the storage between the maximum design high water and the spillway crest within 48 hours? <input type="checkbox"/> Yes <input type="checkbox"/> No		4. Can the Service Spillway and the Auxiliary Spillway in combination evacuate the storage between the design high water and the auxiliary spillway crest within 12 hours? <input type="checkbox"/> Yes <input type="checkbox"/> No	
18. SOIL DATA - State the character of the bed and banks in respect to natural types of soil materials, hardness, perviousness, water bearing, effect of exposure to air and water, uniformity, etc. If an earth dam, describe the material to be used in the embankment. What is the source of embankment fill material?			
Are there porous seams or fissures beneath the foundation of the proposed dam? <input type="checkbox"/> Yes <input type="checkbox"/> No		Method used to obtain the above soil data <input type="checkbox"/> Soil Bearing <input type="checkbox"/> Test Pits	
19. DESIGN ENGINEER Name of agency or individual _____		20. CONSTRUCTION ENGINEER Name of agency or individual _____	
P.E. License No. of Individual _____		P.E. License No. of Individual _____	
Address _____		Address _____	
Title _____		Title _____	
Telephone No. _____		Telephone No. _____	

93-19-2 (2/77)

APPENDIX 7. Non-direct Measurement Data for 7 Dams

Dam Name & Identification Number: Monitor Mills Dam 080-0043

Dam Owner Name: Richard Rawlings

Dam Owner Address: _____

County: Jefferson

Water Body: South Sandy Creek

Major Watershed: Eastern Lake Ontario

Drainage area: 0.01 (if less than 1 square mile, then no further analysis is necessary at this time)

1) Dam Owner Inclination

- a. Dam owner is in favor of dam removal OR dam is considered ownerless.
- b. Dam owner is not in favor of dam removal
- c. Undetermined

Additional Notes: _____

2) Hazard Mitigation and Public Safety

a. Dam Hazard Enforcement

Enforcement Order: Yes / No

Dam Hazard Classifications – List the Hazardous Code: A

[The Hazardous Classification has to do with the expected damage in the event of failure; it has nothing to do with the current stability of the dam.]

Date of last inspection: 7/29/1975

Update Date: 5/7/1991

List the Deficiency Code: _____

b. Infrastructure Issues

Are there known structural deficiencies? Yes / No

If yes, explain: Severe erosion to the face of the dam.

Would dam removal create new hazards? Yes / No

If yes, explain: There is possible sediment contamination. A survey must be done to determine if there is contaminants and if this would be a potential hazard downstream. If so, removal of the sediments behind the dam should be looked into.

Are there Riverine Ice Regime Issues? Yes / No

If yes, explain: Ice does build up behind the dam and due to structural deficiencies this presents a problem.

3) Ecological Value Criteria

Are migratory fish (anadromous, catadromous) present? Yes / No / Unknown

If yes, list the species: Steelhead trout, Salmon, American eel

Were migratory fish historically present? Yes / No / Unknown

If yes, list the species: Steelhead trout, Salmon, American eel

Existing Fish Passage: Yes / No / Unknown

Is there an identified need for fish to passage on this water body? Yes / No

Explain: Removal of the dam would provide more spawning habitat for species listed above.

Are there species of concern (based on Federal and State lists) present or potentially affected? Yes / No

If yes, list the species: American eel

Are invasive species known to be present? [All stocked non-native game fish are not considered to be invasive.] Yes / No

If yes, list the species: Sea lamprey, mussels and purple loosestrife would have to be controlled.

Would wetlands be affected if barrier is removed? Yes / No

If yes, list the type of wetlands (NWI designation) potentially affected and approximate size of wetlands(s): Unknown. Downstream wetland may benefit from the removal of the dam.

Describe the current state of the riparian corridor (land use, vegetative type, etc.) above and below the dam:

Mostly Forested and Agricultural lands

Would water quality or aquatic habitats be adversely affected if barrier is removed? Yes /
No

If yes, list the type of wetlands (NWI designation) potentially affected and approximate size of wetland(s).

Downstream wetlands may have a positive gain on additional flows.

Is reservoir sedimentation a known issue? Yes / No

Explain: _____

4) Cultural and Economic Value Criteria

a. Purpose

Dam Safety Purpose Code: _____

Does it still function as coded? Yes / No

b. Historic Preservation

Has the property's historic status been evaluated by the State Historic Preservation Office (SHPO)?

Yes / No

If so, is it listed in, or eligible for listing in, the State or National Register of Historic Places?

Yes / No

How old is the dam? 101

Construction date? 1905

Last modified/renovated _____

What was the original function of the dam? unknown

Are there related associated buildings, structures or sites nearby? Yes / No

If yes, what? _____

Are there any recorded/inventoried historic archaeological resources (buildings, foundations, or the like) in the immediate vicinity of the projects? Yes / No

If yes, what? _____

Historic Value (architectural and/or archaeological) Yes / No / Unknown

Will a Phase I or II Survey be required if the dam removal alternative is considered? Yes / No

Adjacent Landowner Issues – describe: private landowner

Federal or State Designated Rivers (Federal Heritage River, Federal Designated Wild and Scenic River, State Wild, Scenic and Recreational River, and/or Nationwide Rivers Inventory) – Yes / No / Unknown

Consistency with existing plans - Yes / No / Unknown

If yes, list the plan: _____

Potential Infrastructure Issues:

Would bridges, wells, utility crossings, etc. be affected by removal of the dam? Yes / No

Explain: _____

5) Recreational Value Criteria

Free-flowing portions of river valued for existing and/or potential recreational use for boating –

Yes / No / Unknown

Does the impoundment created by the dam provide significant recreational resource for boating, swimming, skating, fishing, etc.? Yes / No / Unknown

If yes, explain: _____

Is there a regionally unique recreational value? Yes / No

Explain: Angling opportunities would increase.

6) Regulatory Applicability

Is the project located within New York State's defined Coastal Zone boundary or along a designated inland waterway? Yes / No

Is the project located in or will it affect a State designated Significant Coastal Fish and Wildlife Habitat program site? Yes / No

Is there a State approved Local Waterfront Revitalization Program or Brownfield Area of Opportunity located along the waterway? Yes / No

If the answer to any of these questions is yes – then a potential project would be subjected to a Department of State Coastal Consistency Review.

Is the proposed project in a Federally mapped Special Flood Hazard Area? Yes / No

7) Potential Project Feasibility Criteria

Explain any issues associated with gaining access to the dam: private landowners

Dam Name & Identification Number: Webster Dam 079-0109

Dam Owner Name: F E Wright

Dam Owner Address: _____

County: Jefferson

Water Body: Sandy Creek

Major Watershed: Eastern Lake Ontario

Drainage area: 0.01 (if less than 1 square mile, then no further analysis is necessary at this time)

1) Dam Owner Inclination

- a. Dam owner is in favor of dam removal OR dam is considered ownerless.
- b. Dam owner is not in favor of dam removal
- c. Undetermined

Additional Notes: _____

2) Hazard Mitigation and Public Safety

a. Dam Hazard Enforcement

Enforcement Order: Yes / No

Dam Hazard Classifications – List the Hazardous Code: A

[The Hazardous Classification has to do with the expected damage in the event of failure; it has nothing to do with the current stability of the dam.]

Date of last inspection: 7/13/1975

Update Date: 5/7/1991

List the Deficiency Code: _____

b. Infrastructure Issues

Are there known structural deficiencies? Yes / No

If yes, explain: Heavily eroded

Would dam removal create new hazards? Yes / No

If yes, explain: _____

Are there Riverine Ice Regime Issues? Yes / No

If yes, explain: _____

3) Ecological Value Criteria

Are migratory fish (anadromous, catadromous) present? Yes / No / Unknown

If yes, list the species: Steelhead trout, and salmon

Were migratory fish historically present? Yes / No / Unknown

If yes, list the species: Atlantic salmon

Existing Fish Passage: Yes / No / Unknown

Is there an identified need for fish to passage on this water body? Yes / No

Explain: The removal of this dam would open up approximately a half mile to Taft Hydrodam located upstream. With the removal of this dam, Taft Hydrodam has good potentials to provide fish passage when it is up for relicensing.

Are there species of concern (based on Federal and State lists) present or potentially affected? Yes / No

If yes, list the species: _____

Are invasive species known to be present? [All stocked non-native game fish are not considered to be invasive.] Yes / No

If yes, list the species: _____

Would wetlands be affected if barrier is removed? Yes / No

If yes, list the type of wetlands (NWI designation) potentially affected and approximate size of wetlands(s): _____

Describe the current state of the riparian corridor (land use, vegetative type, etc.) above and below the dam:

Residential and Agricultural upstream.

Would water quality or aquatic habitats be adversely affected if barrier is removed? Yes / No

If yes, list the type of wetlands (NWI designation) potentially affected and approximate size of wetland(s).

Is reservoir sedimentation a known issue? Yes / No

Explain: _____

4) Cultural and Economic Value Criteria

a. Purpose

Dam Safety Purpose Code: _____

Does it still function as coded? Yes / No

b. Historic Preservation

Has the property's historic status been evaluated by the State Historic Preservation Office (SHPO)?

Yes / No

If so, is it listed in, or eligible for listing in, the State or National Register of Historic Places?

Yes / No

How old is the dam? 181

Construction date? 1825

Last modified/renovated _____

What was the original function of the dam? unknown

Are there related associated buildings, structures or sites nearby? Yes / No

If yes, what? _____

Are there any recorded/inventoried historic archaeological resources (buildings, foundations, or the like) in the immediate vicinity of the projects? Yes / No

If yes, what? _____

Historic Value (architectural and/or archaeological) Yes / No / Unknown

Will a Phase I or II Survey be required if the dam removal alternative is considered? Yes / No

Adjacent Landowner Issues – describe: none

Federal or State Designated Rivers (Federal Heritage River, Federal Designated Wild and Scenic River, State Wild, Scenic and Recreational River, and/or Nationwide Rivers Inventory) – Yes / No / Unknown

Consistency with existing plans - Yes / No / Unknown

If yes, list the plan: _____

Potential Infrastructure Issues:

Would bridges, wells, utility crossings, etc. be affected by removal of the dam? Yes / No

Explain: Village of Adam sewage may be affected.

5) Recreational Value Criteria

Free-flowing portions of river valued for existing and/or potential recreational use for boating –

Yes / No / Unknown

Does the impoundment created by the dam provide significant recreational resource for boating, swimming, skating, fishing, etc.? Yes / No / Unknown

If yes, explain: _____

Is there a regionally unique recreational value? Yes / No

Explain: Steelhead trout and Pacific salmon could bring in angling opportunities.

6) Regulatory Applicability

Is the project located within New York State's defined Coastal Zone boundary or along a designated inland waterway? Yes / No

I the project located in or will it affect a State designated Significant Coastal Fish and Wildlife Habitat program site? Yes / No

Is there a State approved Local Waterfront Revitalization Program or Brownfield Area of Opportunity located along the waterway? Yes / No

If the answer to any of these questions is yes – then a potential project would be subjected to a Department of State Coastal Consistency Review.

Is the proposed project in a Federally mapped Special Flood Hazard Area? Yes / No

7) Potential Project Feasibility Criteria

Explain any issues associated with gaining access to the dam: none.

Dam Name & Identification Number: Youngs Mill Dam 080-0190

Dam Owner Name: T.H.Young Company

Dam Owner Address: _____

County: Oswego

Water Body: Black Creek

Major Watershed: Eastern lake Ontario

Drainage area: 0.01 (if less than 1 square mile, then no further analysis is necessary at this time)

1) Dam Owner Inclination

- a. Dam owner is in favor of dam removal OR dam is considered ownerless.
- b. Dam owner is not in favor of dam removal
- c. Undetermined

Additional Notes: _____

2) Hazard Mitigation and Public Safety

a. Dam Hazard Enforcement

Enforcement Order: Yes / No

Dam Hazard Classifications – List the Hazardous Code: A

[The Hazardous Classification has to do with the expected damage in the event of failure; it has nothing to do with the current stability of the dam.]

Date of last inspection: 7/9/1975

Update Date: 8/26/1982

List the Deficiency Code: _____

b. Infrastructure Issues

Are there known structural deficiencies? Yes / No

If yes, explain: Heavily eroded

Would dam removal create new hazards? Yes / No

If yes, explain: _____

Are there Riverine Ice Regime Issues? Yes / No

If yes, explain: _____

3) Ecological Value Criteria

Are migratory fish (anadromous, catadromous) present? Yes / No / Unknown

If yes, list the species: Steelhead trout, Pacific salmon, Atlantic salmon

Were migratory fish historically present? Yes / No / Unknown

If yes, list the species: Atlantic salmon

Existing Fish Passage: Yes / No / Unknown

Is there an identified need for fish to passage on this water body? Yes / No

Explain: Steelhead trout, Pacific salmon, Atlantic salmon could utilize the habitat above the dam.

Are there species of concern (based on Federal and State lists) present or potentially affected? Yes / No

If yes, list the species: _____

Are invasive species known to be present? [All stocked non-native game fish are not considered to be invasive.] Yes / No

If yes, list the species: Sea lamprey

Would wetlands be affected if barrier is removed? Yes / No

If yes, list the type of wetlands (NWI designation) potentially affected and approximate size of wetlands(s): _____

Describe the current state of the riparian corridor (land use, vegetative type, etc.) above and below the dam:

Residential, agricultural and forested

Would water quality or aquatic habitats be adversely affected if barrier is removed? Yes / No

Explain: _____

Is reservoir sedimentation a known issue? Yes / No

Explain: Possibly contaminants

4) Cultural and Economic Value Criteria

a. Purpose

Dam Safety Purpose Code: _____

Does it still function as coded? Yes / No

b. Historic Preservation

Has the property's historic status been evaluated by the State Historic Preservation Office (SHPO)?

Yes / No

If so, is it listed in, or eligible for listing in, the State or National Register of Historic Places?

Yes / No

How old is the dam? 146

Construction date? 1860

Last modified/renovated _____

What was the original function of the dam? recreation

Are there related associated buildings, structures or sites nearby? Yes / No

If yes, what? _____

Are there any recorded/inventoried historic archaeological resources (buildings, foundations, or the like) in the immediate vicinity of the projects? Yes / No

If yes, what? _____

Historic Value (architectural and/or archaeological) Yes / No / Unknown

Will a Phase I or II Survey be required if the dam removal alternative is considered? Yes / No

Adjacent Landowner Issues – describe: town and residential

Federal or State Designated Rivers (Federal Heritage River, Federal Designated Wild and Scenic River, State Wild, Scenic and Recreational River, and/or Nationwide Rivers Inventory) – Yes / No / Unknown

Consistency with existing plans - Yes / No / Unknown

If yes, list the plan: _____

Potential Infrastructure Issues:

Would bridges, wells, utility crossings, etc. be affected by removal of the dam? Yes / No

Explain: Located beneath a main bridge and could reduce erosion to the bridge if removed.

5) Recreational Value Criteria

Free-flowing portions of river valued for existing and/or potential recreational use for boating –

Yes / No / Unknown

Does the impoundment created by the dam provide significant recreational resource for boating, swimming, skating, fishing, etc.? Yes / No / Unknown

If yes, explain: _____

Is there a regionally unique recreational value? Yes / No

Explain: _____

6) Regulatory Applicability

Is the project located within New York State's defined Coastal Zone boundary or along a designated inland waterway? Yes / No

I the project located in or will it affect a State designated Significant Coastal Fish and Wildlife Habitat program site? Yes / No

Is there a State approved Local Waterfront Revitalization Program or Brownfield Area of Opportunity located along the waterway? Yes / No

If the answer to any of these questions is yes – then a potential project would be subjected to a Department of State Coastal Consistency Review.

Is the proposed project in a Federally mapped Special Flood Hazard Area? Yes / No

7) Potential Project Feasibility Criteria

Explain any issues associated with gaining access to the dam: town and residential

Dam Name & Identification Number: Ames Mill Dam 081-0185

Dam Owner Name: Sportsman Club Association

Dam Owner Address: _____

County: Oswego

Water Body: Little Salmon River

Major Watershed: Eastern Lake Ontario

Drainage area: 0.01 (if less than 1 square mile, then no further analysis is necessary at this time)

1) Dam Owner Inclination

- a. Dam owner is in favor of dam removal OR dam is considered ownerless.
- b. Dam owner is not in favor of dam removal
- c. Undetermined

Additional Notes: _____

2) Hazard Mitigation and Public Safety

a. Dam Hazard Enforcement

Enforcement Order: Yes / No

Dam Hazard Classifications – List the Hazardous Code: A

[The Hazardous Classification has to do with the expected damage in the event of failure; it has nothing to do with the current stability of the dam.]

Date of last inspection: 5/19/1998

Update Date: 10/19/1998

List the Deficiency Code: _____

b. Infrastructure Issues

Are there known structural deficiencies? Yes / No

If yes, explain: some erosion

Would dam removal create new hazards? Yes / No

If yes, explain: _____

Are there Riverine Ice Regime Issues? Yes / No

If yes, explain: _____

3) Ecological Value Criteria

Are migratory fish (anadromous, catadromous) present? Yes / No / Unknown

If yes, list the species: Steelhead, Pacific salmon, suckers, American eel and Atlantic Salmon

Were migratory fish historically present? Yes / No / Unknown

If yes, list the species: American eel and Atlantic Salmon

Existing Fish Passage: Yes / No / Unknown

Is there an identified need for fish to passage on this water body? Yes / No

Explain: American eel and Atlantic Salmon are in need of additional spawning grounds.

Are there species of concern (based on Federal and State lists) present or potentially affected? Yes / No

If yes, list the species: American eels

Are invasive species known to be present? [All stocked non-native game fish are not considered to be invasive.] Yes / No

If yes, list the species: Sea Lampreys

Would wetlands be affected if barrier is removed? Yes / No

If yes, list the type of wetlands (NWI designation) potentially affected and approximate size of wetlands(s): _____

Describe the current state of the riparian corridor (land use, vegetative type, etc.) above and below the dam:

Residential and Forested land

Would water quality or aquatic habitats be adversely affected if barrier is removed? Yes / No

Explain: _____

Is reservoir sedimentation a known issue? Yes / No

Explain: Possible contamination

4) Cultural and Economic Value Criteria

a. Purpose

Dam Safety Purpose Code: _____

Does it still function as coded? Yes / No

b. Historic Preservation

Has the property's historic status been evaluated by the State Historic Preservation Office (SHPO)?

Yes / No

If so, is it listed in, or eligible for listing in, the State or National Register of Historic Places?

Yes / No

How old is the dam? 93

Construction date? 1913

Last modified/renovated _____

What was the original function of the dam? unknown

Are there related associated buildings, structures or sites nearby? Yes / No

If yes, what? _____

Are there any recorded/inventoried historic archaeological resources (buildings, foundations, or the like) in the immediate vicinity of the projects? Yes / No

If yes, what? _____

Historic Value (architectural and/or archaeological) Yes / No / Unknown

Will a Phase I or II Survey be required if the dam removal alternative is considered? Yes / No

Adjacent Landowner Issues – describe: Private landowners

Federal or State Designated Rivers (Federal Heritage River, Federal Designated Wild and Scenic River, State Wild, Scenic and Recreational River, and/or Nationwide Rivers Inventory) – Yes / No / Unknown

Consistency with existing plans - Yes / No / Unknown

If yes, list the plan: _____

Potential Infrastructure Issues:

Would bridges, wells, utility crossings, etc. be affected by removal of the dam? Yes / No

Explain: _____

5) Recreational Value Criteria

Free-flowing portions of river valued for existing and/or potential recreational use for boating –

Yes / No / Unknown

Does the impoundment created by the dam provide significant recreational resource for boating, swimming, skating, fishing, etc.? Yes / No / Unknown

If yes, explain: _____

Is there a regionally unique recreational value? Yes / No

Explain: _____

6) Regulatory Applicability

Is the project located within New York State's defined Coastal Zone boundary or along a designated inland waterway? Yes / No

I the project located in or will it affect a State designated Significant Coastal Fish and Wildlife Habitat program site? Yes / No

Is there a State approved Local Waterfront Revitalization Program or Brownfield Area of Opportunity located along the waterway? Yes / No

If the answer to any of these questions is yes – then a potential project would be subjected to a Department of State Coastal Consistency Review.

Is the proposed project in a Federally mapped Special Flood Hazard Area? Yes / No

7) Potential Project Feasibility Criteria

Explain any issues associated with gaining access to the dam: Private landowners

Dam Name & Identification Number: Little Salmon Dam 081-0191

Dam Owner Name: T.G. Ludington

Dam Owner Address: _____

County: Oswego

Water Body: Little Salmon River

Major Watershed: Eastern Lake Ontario

Drainage area: 0.01 (if less than 1 square mile, then no further analysis is necessary at this time)

1) Dam Owner Inclination

- a. Dam owner is in favor of dam removal OR dam is considered ownerless.
- b. Dam owner is not in favor of dam removal
- c. Undetermined

Additional Notes: _____

2) Hazard Mitigation and Public Safety

a. Dam Hazard Enforcement

Enforcement Order: Yes / No

Dam Hazard Classifications – List the Hazardous Code: A

[The Hazardous Classification has to do with the expected damage in the event of failure; it has nothing to do with the current stability of the dam.]

Date of last inspection: 7/9/1975

Update Date: 5/9/1991

List the Deficiency Code: _____

b. Infrastructure Issues

Are there known structural deficiencies? Yes / No

If yes, explain: Has been reinforced

Would dam removal create new hazards? Yes / No

If yes, explain: _____

Are there Riverine Ice Regime Issues? Yes / No

If yes, explain: _____

3) Ecological Value Criteria

Are migratory fish (anadromous, catadromous) present? Yes / No / Unknown

If yes, list the species: _____

Were migratory fish historically present? Yes / No / Unknown

If yes, list the species: Atlantic Salmon and Brook trout

Existing Fish Passage: Yes / No / Unknown

Is there an identified need for fish to passage on this water body? Yes / No

Explain: Atlantic Salmon and Brook trout may utilize the habitat above the dam.

Are there species of concern (based on Federal and State lists) present or potentially affected? Yes / No

If yes, list the species: unknown

Are invasive species known to be present? [All stocked non-native game fish are not considered to be invasive.] Yes / No

If yes, list the species: Sea lamprey

Would wetlands be affected if barrier is removed? Yes / No

If yes, list the type of wetlands (NWI designation) potentially affected and approximate size of wetlands(s): _____

Describe the current state of the riparian corridor (land use, vegetative type, etc.) above and below the dam:

Residential and forested

Would water quality or aquatic habitats be adversely affected if barrier is removed? Yes / No

Explain: _____

Is reservoir sedimentation a known issue? Yes / No

Explain: Possible contamination

4) Cultural and Economic Value Criteria

a. Purpose

Dam Safety Purpose Code: _____

Does it still function as coded? Yes / No

b. Historic Preservation

Has the property's historic status been evaluated by the State Historic Preservation Office (SHPO)?

Yes / No

If so, is it listed in, or eligible for listing in, the State or National Register of Historic Places?

Yes / No

How old is the dam? 111

Construction date? 1895

Last modified/renovated _____

What was the original function of the dam? unknown

Are there related associated buildings, structures or sites nearby? Yes / No

If yes, what? _____

Are there any recorded/inventoried historic archaeological resources (buildings, foundations, or the like) in the immediate vicinity of the projects? Yes / No

If yes, what? _____

Historic Value (architectural and/or archaeological) Yes / No / Unknown

Will a Phase I or II Survey be required if the dam removal alternative is considered? Yes / No

Adjacent Landowner Issues – describe: Municipal and private landowners may not want pond to be lost.

Federal or State Designated Rivers (Federal Heritage River, Federal Designated Wild and Scenic River, State Wild, Scenic and Recreational River, and/or Nationwide Rivers Inventory) –
Yes / No / Unknown

Consistency with existing plans - Yes / No / Unknown

If yes, list the plan: _____

Potential Infrastructure Issues:

Would bridges, wells, utility crossings, etc. be affected by removal of the dam? Yes / No

Explain: Bridge is above the dam

5) Recreational Value Criteria

Free-flowing portions of river valued for existing and/or potential recreational use for boating –

Yes / No / Unknown

Does the impoundment created by the dam provide significant recreational resource for boating, swimming, skating, fishing, etc.? Yes / No / Unknown

If yes, explain: _____

Is there a regionally unique recreational value? Yes / No

Explain: _____

6) Regulatory Applicability

Is the project located within New York State's defined Coastal Zone boundary or along a designated inland waterway? Yes / No

Is the project located in or will it affect a State designated Significant Coastal Fish and Wildlife Habitat program site? Yes / No

Is there a State approved Local Waterfront Revitalization Program or Brownfield Area of Opportunity located along the waterway? Yes / No

If the answer to any of these questions is yes – then a potential project would be subjected to a Department of State Coastal Consistency Review.

Is the proposed project in a Federally mapped Special Flood Hazard Area? Yes / No

7) Potential Project Feasibility Criteria

Explain any issues associated with gaining access to the dam: Municipal and private landowners

Dam Name & Identification Number: Fernwood Hydroelectric Dam 081-0166

Dam Owner Name: Fred L. Spicer

Dam Owner Address: _____

County: Oswego

Water Body: Grindstone Creek

Major Watershed: Eastern Lake Ontario

Drainage area: _____ (if less than 1 square mile, then no further analysis is necessary at this time)

1) Dam Owner Inclination

- a. Dam owner is in favor of dam removal OR dam is considered ownerless.
- b. Dam owner is not in favor of dam removal
- c. Undetermined

Additional Notes: _____

2) Hazard Mitigation and Public Safety

a. Dam Hazard Enforcement

Enforcement Order: Yes / No

Dam Hazard Classifications – List the Hazardous Code: A

[The Hazardous Classification has to do with the expected damage in the event of failure; it has nothing to do with the current stability of the dam.]

Date of last inspection: 6/22/2000

Update Date: 12/16/1991

List the Deficiency Code: _____

b. Infrastructure Issues

Are there known structural deficiencies? Yes / No

If yes, explain: Some minor cracks

Would dam removal create new hazards? Yes / No

If yes, explain: _____

Are there Riverine Ice Regime Issues? Yes / No

If yes, explain: _____

3) Ecological Value Criteria

Are migratory fish (anadromous, catadromous) present? Yes / No / Unknown

If yes, list the species: Atlantic salmon, Steelhead trout, Brook trout, American eels, Small mouth bass, and walleyes

Were migratory fish historically present? Yes / No / Unknown

If yes, list the species: American eels, and Atlantic salmon

Existing Fish Passage: Yes / No / Unknown

Is there an identified need for fish to passage on this water body? Yes / No

Explain: Atlantic salmon, Steelhead trout, Brook trout, American eels, Small mouth bass, and walleyes can utilize the habitat above the dam.

Are there species of concern (based on Federal and State lists) present or potentially affected? Yes / No

If yes, list the species: American eels

Are invasive species known to be present? [All stocked non-native game fish are not considered to be invasive.] Yes / No

If yes, list the species: Sea lamprey

Would wetlands be affected if barrier is removed? Yes / No

If yes, list the type of wetlands (NWI designation) potentially affected and approximate size of wetlands(s): unknown- it will affect wetlands above the barrier.

Describe the current state of the riparian corridor (land use, vegetative type, etc.) above and below the dam:

Forested and residential

Would water quality or aquatic habitats be adversely affected if barrier is removed? Yes / No

Explain: Sea lamprey

Is reservoir sedimentation a known issue? Yes / No

Explain: 3 yrs ago the reservoir was drained and sediment covered the bottom about 1 foot deep. It has naturally restored itself.

4) Cultural and Economic Value Criteria

a. Purpose

Dam Safety Purpose Code: _____

Does it still function as coded? Yes / No

b. Historic Preservation

Has the property's historic status been evaluated by the State Historic Preservation Office (SHPO)?

Yes / No

If so, is it listed in, or eligible for listing in, the State or National Register of Historic Places?

Yes / No

How old is the dam? 180

Construction date? 1826

Last modified/renovated _____

What was the original function of the dam? Flour Mill dam

Are there related associated buildings, structures or sites nearby? Yes / No

If yes, what? Flour Mill building still stands today.

Are there any recorded/inventoried historic archaeological resources (buildings, foundations, or the like) in the immediate vicinity of the projects? Yes / No

If yes, what? _____

Historic Value (architectural and/or archaeological) Yes / No / Unknown

Will a Phase I or II Survey be required if the dam removal alternative is considered? Yes / No

Adjacent Landowner Issues – describe: private landowner

Federal or State Designated Rivers (Federal Heritage River, Federal Designated Wild and Scenic River, State Wild, Scenic and Recreational River, and/or Nationwide Rivers Inventory) –
Yes / No / Unknown

Consistency with existing plans - Yes / No / Unknown

If yes, list the plan: _____

Potential Infrastructure Issues:

Would bridges, wells, utility crossings, etc. be affected by removal of the dam? Yes / No

Explain: Bridge below the dam.

5) Recreational Value Criteria

Free-flowing portions of river valued for existing and/or potential recreational use for boating –

Yes / No / Unknown

Does the impoundment created by the dam provide significant recreational resource for boating, swimming, skating, fishing, etc.? Yes / No / Unknown

If yes, explain: _____

Is there a regionally unique recreational value? Yes / No

Explain: _____

6) Regulatory Applicability

Is the project located within New York State's defined Coastal Zone boundary or along a designated inland waterway? Yes / No

Is the project located in or will it affect a State designated Significant Coastal Fish and Wildlife Habitat program site? Yes / No

Is there a State approved Local Waterfront Revitalization Program or Brownfield Area of Opportunity located along the waterway? Yes / No

If the answer to any of these questions is yes – then a potential project would be subjected to a Department of State Coastal Consistency Review.

Is the proposed project in a Federally mapped Special Flood Hazard Area? Yes / No

7) Potential Project Feasibility Criteria

Explain any issues associated with gaining access to the dam: private landowners

APPENDIX 8. Summary Chart

NYSDEC REGION 6

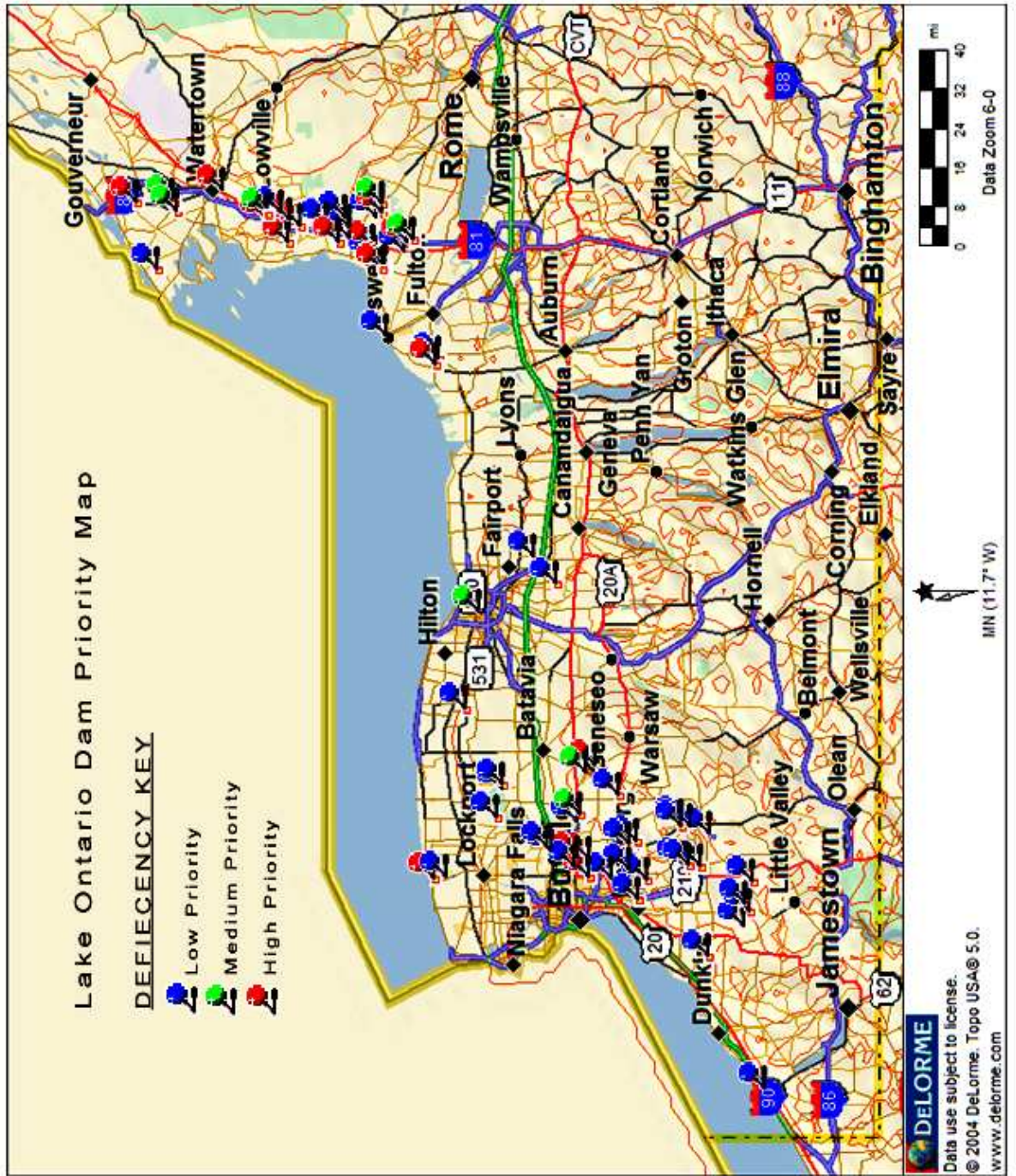
DAM	Monitor Mills Dam
TRIBUTARY	South Sandy Creek
COUNTY	Jefferson
TOWNSHIP/CITY	Ellisburg
POTENTIAL RESTORED MILES OF UPSTREAM FISH PASSAGE	19 miles
MIGRATORY SPECIES PRESENT	Steelhead trout, Pacific salmon and American eel
PROPOSED MITIGATION TYPE (REMOVAL/FISH LADDER)	Removal
QUALITATIVE IMPLEMENTATION COST	Between \$50,000 to \$250,000
COMMENTS	
DAM	Webster Dam
TRIBUTARY	Sandy Creek
COUNTY	Jefferson
TOWNSHIP/CITY	Adams

POTENTIAL RESTORED MILES OF UPSTREAM FISH PASSAGE	1/2 mile
MIGRATORY SPECIES PRESENT	Steelhead trout and American eel
PROPOSED MITIGATION TYPE (REMOVAL/FISH LADDER)	Removal
QUALITATIVE IMPLEMENTATION COST	Between \$60,000 to \$100,000
COMMENTS	Removal of this dam will place emphasizes for fish passage at the Taft Hydro Dam located 1/2 mile upstream.
NYSDEC REGION 7	
DAM	Youngs Mill Dam
TRIBUTARY	Black Creek
COUNTY	Oswego
TOWNSHIP/CITY	Mexico
POTENTIAL RESTORED MILES OF UPSTREAM FISH PASSAGE	6 miles
MIGRATORY SPECIES PRESENT	Steelhead trout, Pacific salmon, suckers, American eel, native Brook trout and Atlantic salmon
PROPOSED MITIGATION TYPE (REMOVAL/FISH LADDER)	Removal
QUALITATIVE IMPLEMENTATION COST	Between \$50,000 to \$100,000

COMMENTS	
DAM	Ames Mill Dam
TRIBUTARY	Little Salmon River
COUNTY	Oswego
TOWNSHIP/CITY	Mexico
POTENTIAL RESTORED MILES OF UPSTREAM FISH PASSAGE	1.5 miles
MIGRATORY SPECIES PRESENT	Steelhead trout, Pacific salmon, suckers, American eel, native Brook trout and Atlantic salmon
PROPOSED MITIGATION TYPE (REMOVAL/FISH LADDER)	Removal
QUALITATIVE IMPLEMENTATION COST	Between \$40,000 to \$100,000
COMMENTS	Removal of this dam will have an impact on the Little Salmon Dam located 1.5 miles upstream.
DAM	Little Salmon Dam
TRIBUTARY	Little Salmon River
COUNTY	Oswego
TOWNSHIP/CITY	Mexico
POTENTIAL RESTORED MILES OF UPSTREAM FISH	12 miles

PASSAGE	
MIGRATORY SPECIES PRESENT	Steelhead trout, Pacific salmon, suckers, American eel, native Brook trout and Atlantic salmon
PROPOSED MITIGATION TYPE (REMOVAL/FISH LADDER)	Removal
QUALITATIVE IMPLEMENTATION COST	Between \$40,000 to \$100,000
COMMENTS	Ames Mill Dam must be removed first.
<hr/>	
DAM	Fernwood Hydroelectric Dam
TRIBUTARY	Grindstone Creek
COUNTY	
TOWNSHIP/CITY	Fernwood
POTENTIAL RESTORED MILES OF UPSTREAM FISH PASSAGE	11 miles
MIGRATORY SPECIES PRESENT	Atlantic salmon, American eels, Steelhead trout, native Brook trout, Small mouth bass, and Walleye pike
PROPOSED MITIGATION TYPE (REMOVAL/FISH LADDER)	Fish Ladder
QUALITATIVE IMPLEMENTATION COST	Between \$300,000 and \$800,000 for a Fish Ladder
COMMENTS	This is a private Hydro Dam that is still functioning. Owner will probably not be in favor of its removal.

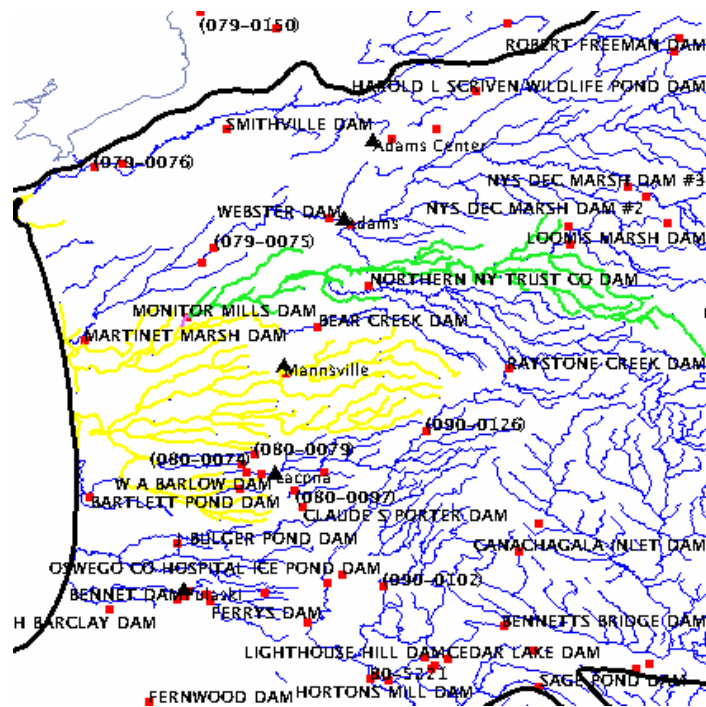
APPENDIX 9. Dam Priority Map

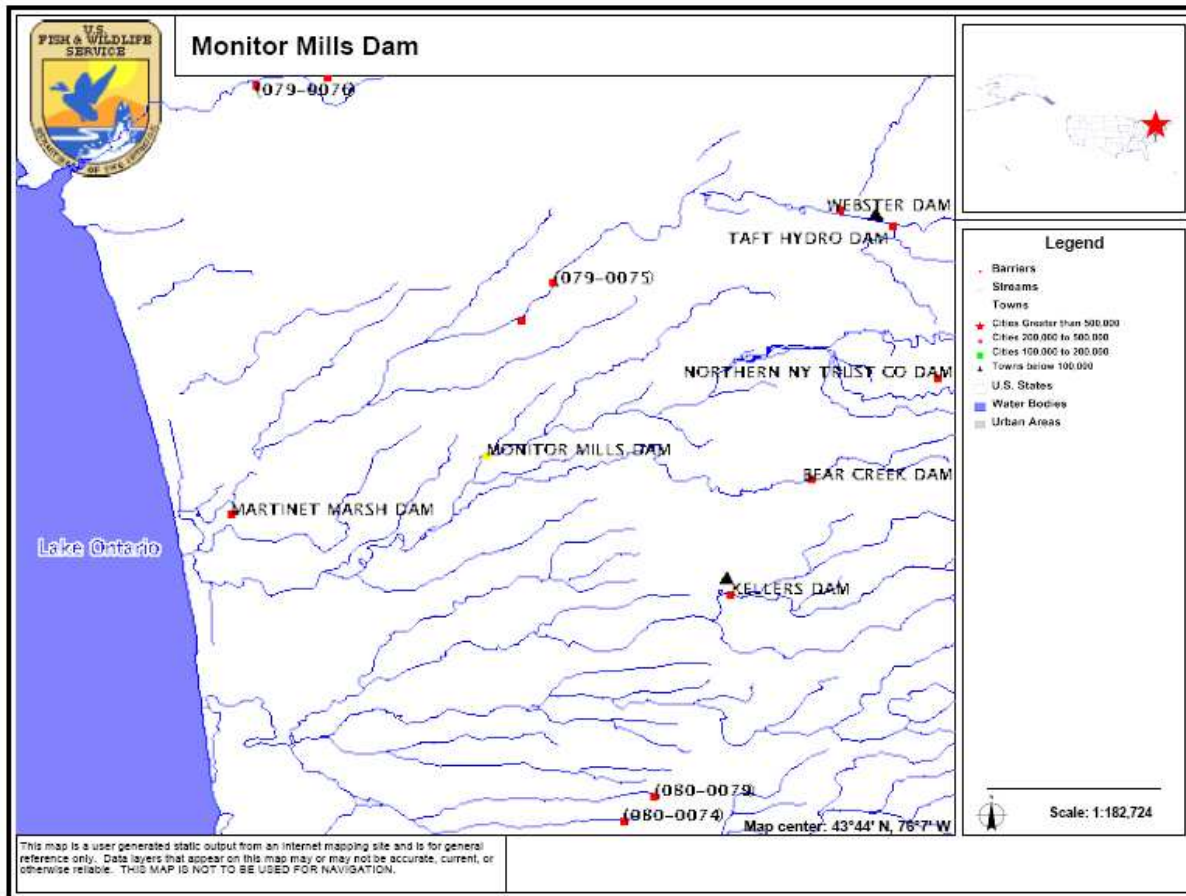


APPENDIX 10. Fish Passage Decision Support System for 7 Dams

Barrier ID	Barrier Name	Height (ft)	Waterbody	Type	H.U.C.
080-0043	MONITOR MILLS DAM	8	SANDY CREEK	Gravity	SALMON - SANDY

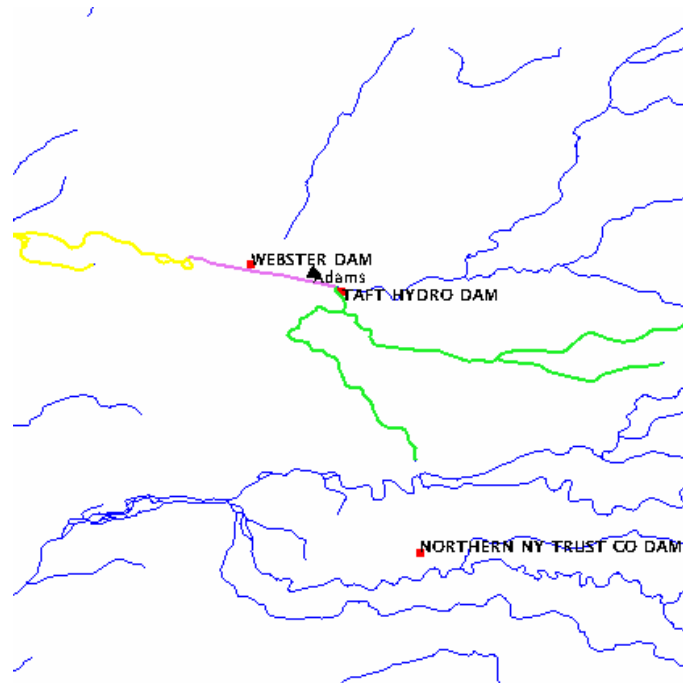
MONITOR MILLS DAM	
Source:	New York
Type:	Gravity
Purpose:	Unknown
Year Completed:	1905
Owner Name:	MANFORD LEE
Owner Type:	Private Landowner
Comments:	
Physical	
Height:	8.0
Width:	
Length:	230.0
Location	
Longitude:	-76.125833
Latitude:	43.746389
River/Stream:	SANDY CREEK
County:	Jefferson
HUC:	SALMON - SANDY (4140102)

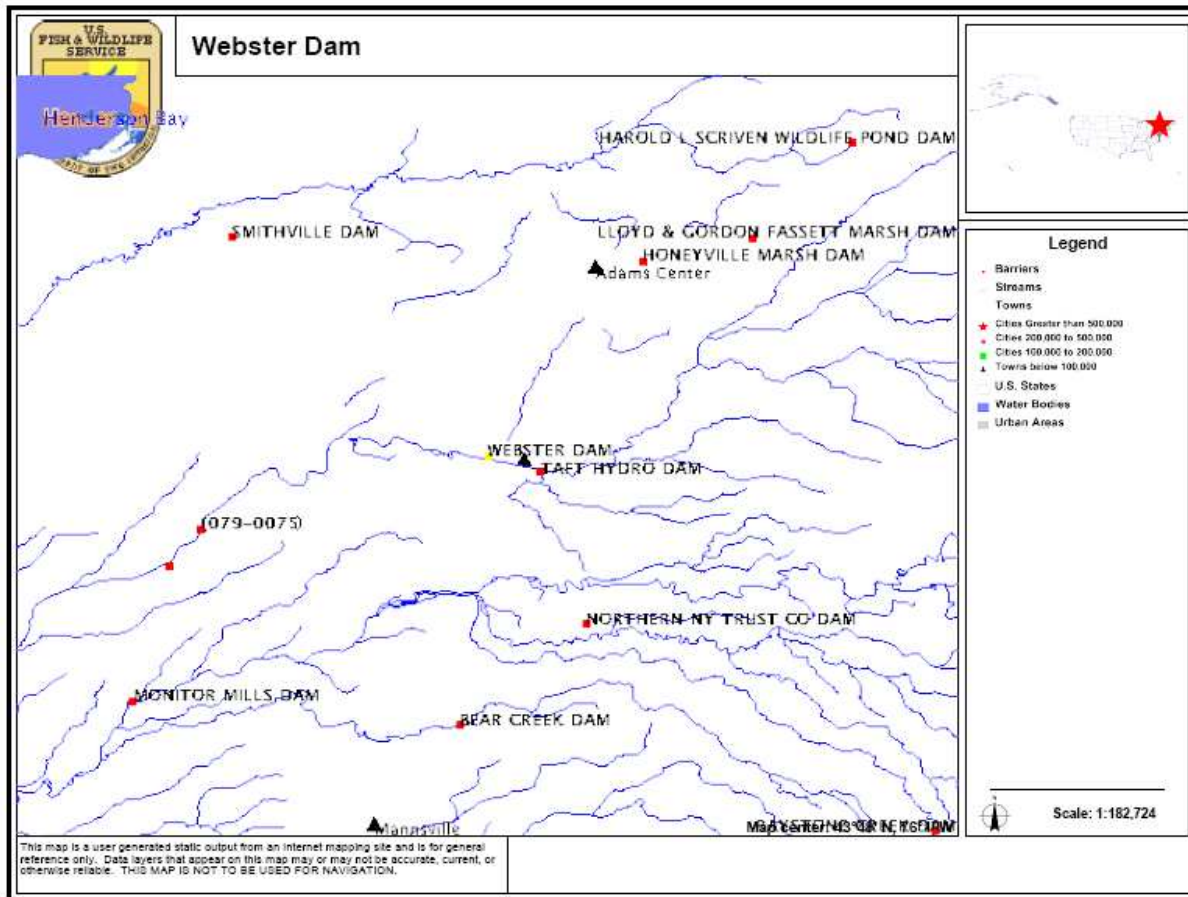




Barrier ID	Barrier Name	Height (ft)	Waterbody	Type	H.U.C.
079-0109	WEBSTER DAM	8	SANDY CREEK	Gravity	SALMON - SANDY

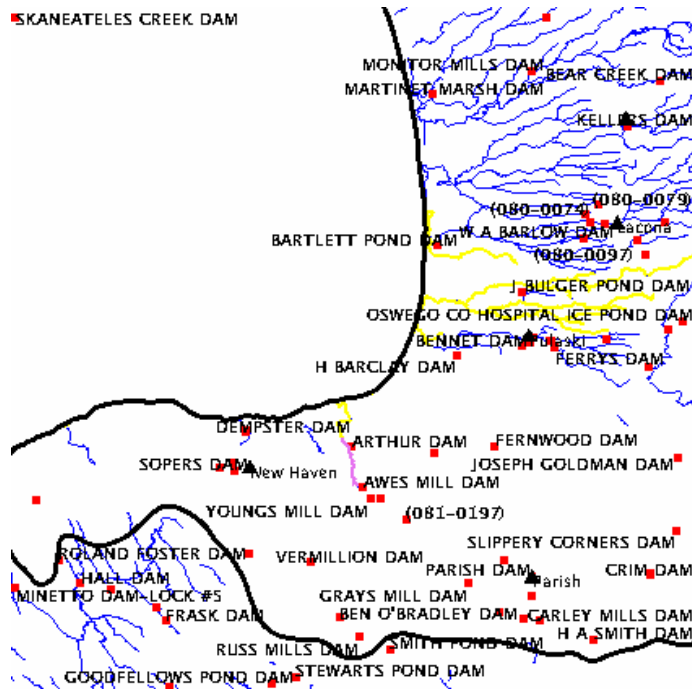
WEBSTER DAM	
Source:	New York
Type:	Gravity
Purpose:	Unknown
Year Completed:	1825
Owner Name:	F E WRIGHT
Owner Type:	Private Landowner
Comments:	
Physical	
Height:	8.0
Width:	
Length:	
Location	
Longitude:	-76.033056
Latitude:	43.810833
River/Stream:	SANDY CREEK
County:	Jefferson
HUC:	SALMON - SANDY (4140102)

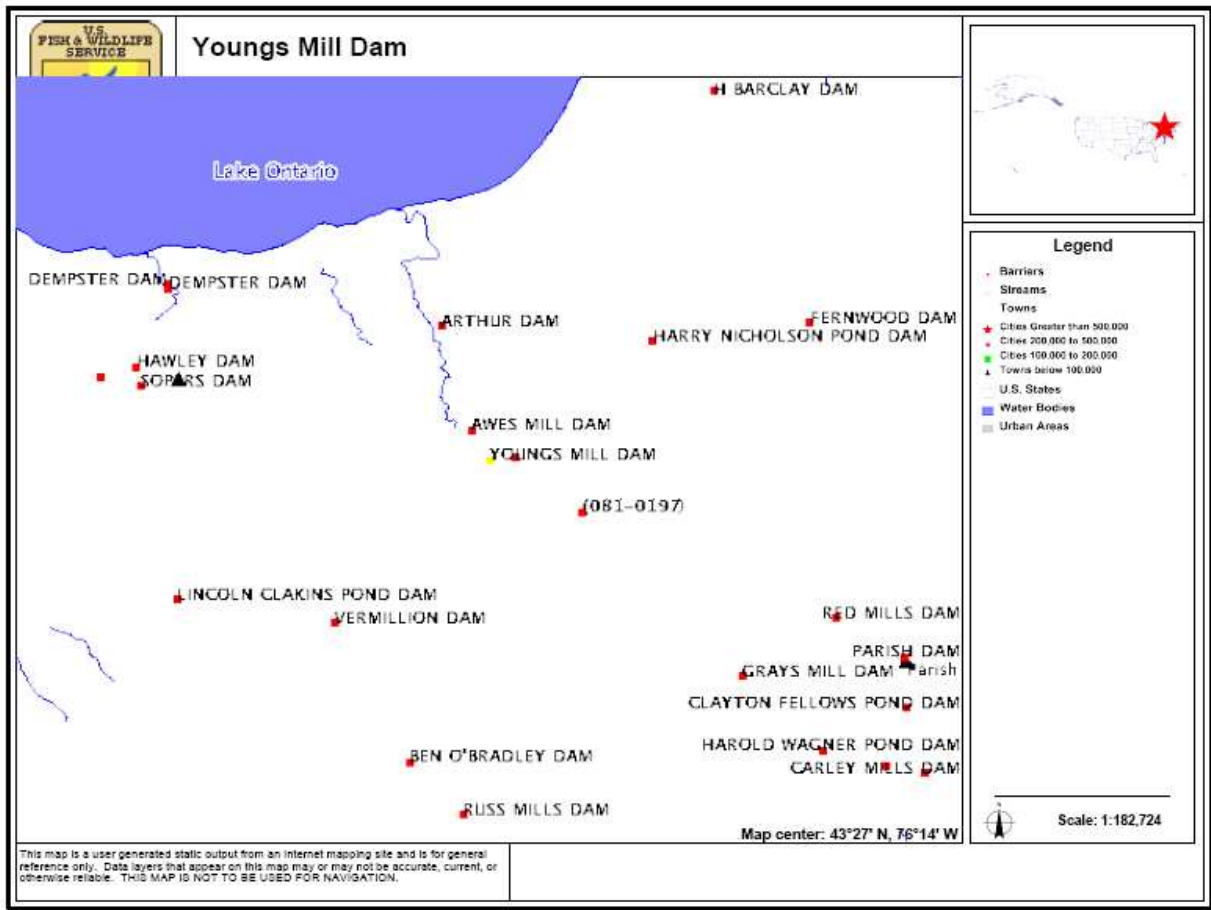




Barrier ID	Barrier Name	Height (ft)	Waterbody	Type	H.U.C.
081-0190	YOUNGS MILL DAM	15	BLACK CREEK	Gravity	SALMON - SANDY

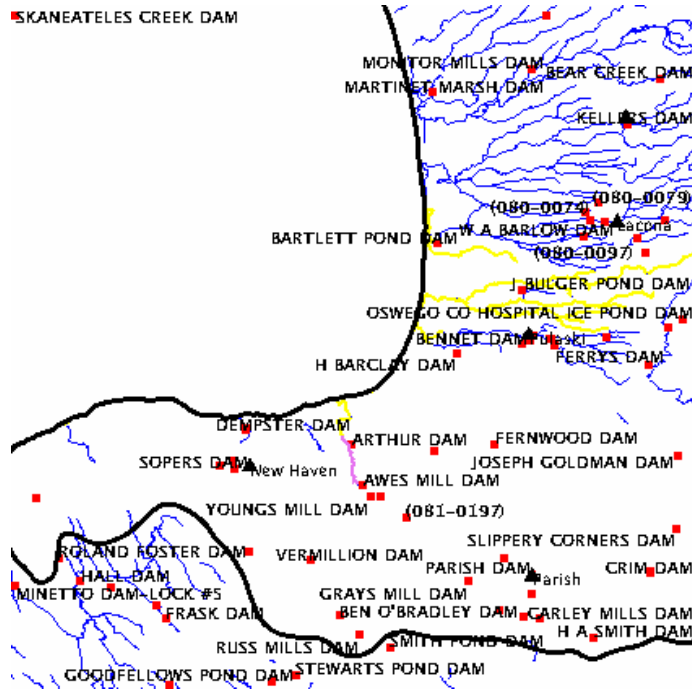
Youngs Mill Dam	
Source:	New York
Type:	Gravity
Purpose:	Recreation
Year Completed:	1860
Owner Name:	FRED L. SPICER
Owner Type:	Private Landowner
Comments:	
Physical	
Height:	15.0
Width:	
Length:	
Location	
Longitude:	
Latitude:	
River/Stream:	BLACK CREEK
County:	Oswego
HUC:	SALMON - SANDY (4140102)

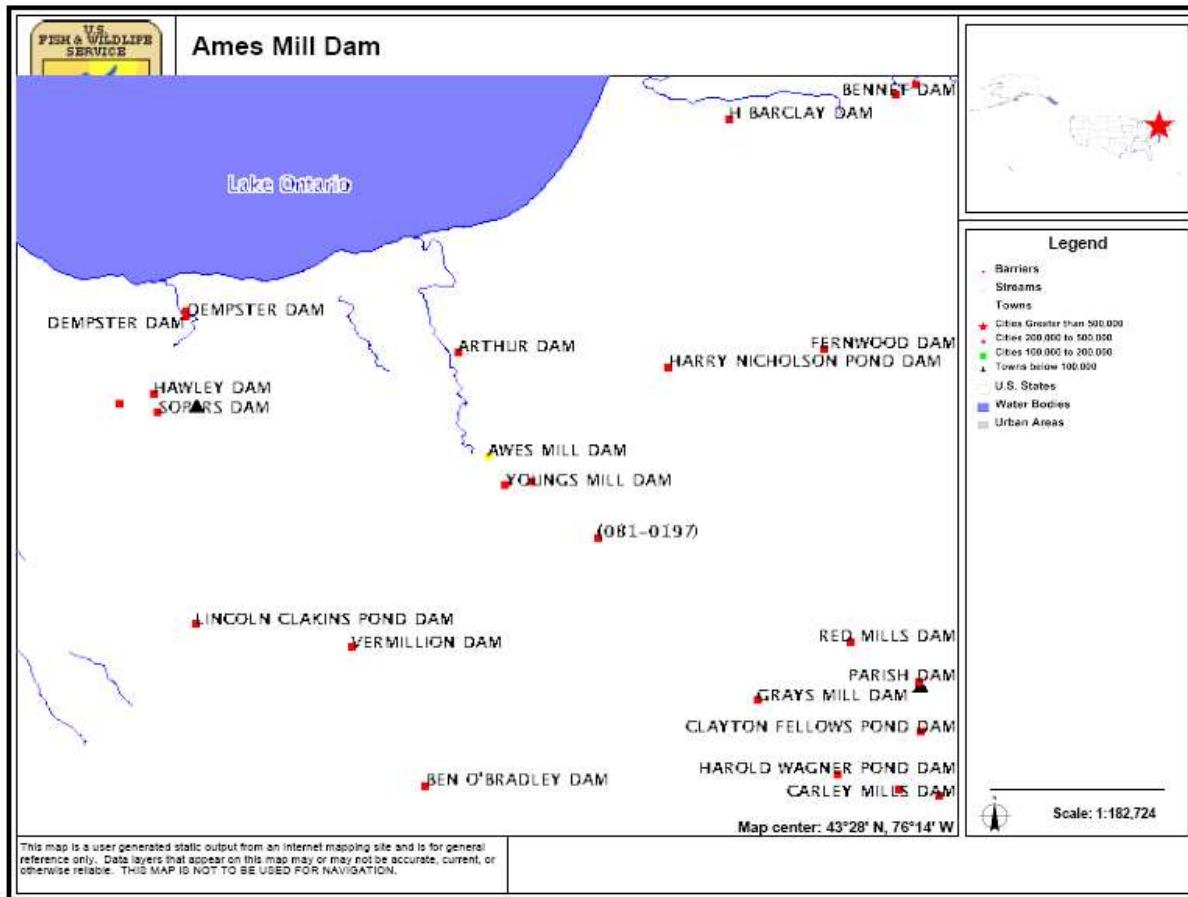




Barrier ID	Barrier Name	Height (ft)	Waterbody	Type	H.U.C.
081-0185	AMES MILL DAM	10	LITTLE SALMON RIVER	Laid-Up	SALMON - SANDY

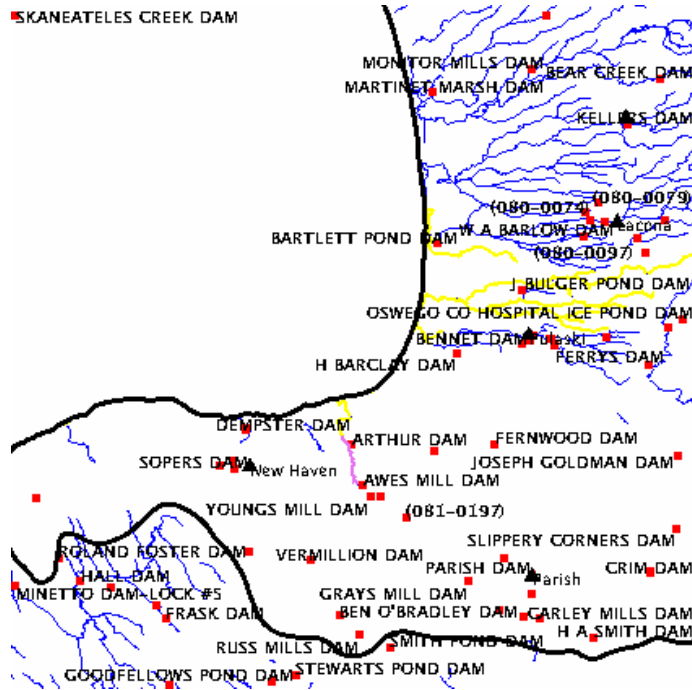
AMES MILL DAM	
Source:	New York
Type:	Laid-Up
Purpose:	Unknown
Year Completed:	1913
Owner Name:	SPORTSMAN CLUB ASSOCIATION
Owner Type:	Private Landowner
Comments:	
Physical	
Height:	10.0
Width:	
Length:	107.0
Location	
Longitude:	-76.238889
Latitude:	43.466944
River/Stream:	LITTLE SALMON RIVER
County:	Oswego
HUC:	SALMON - SANDY (4140102)

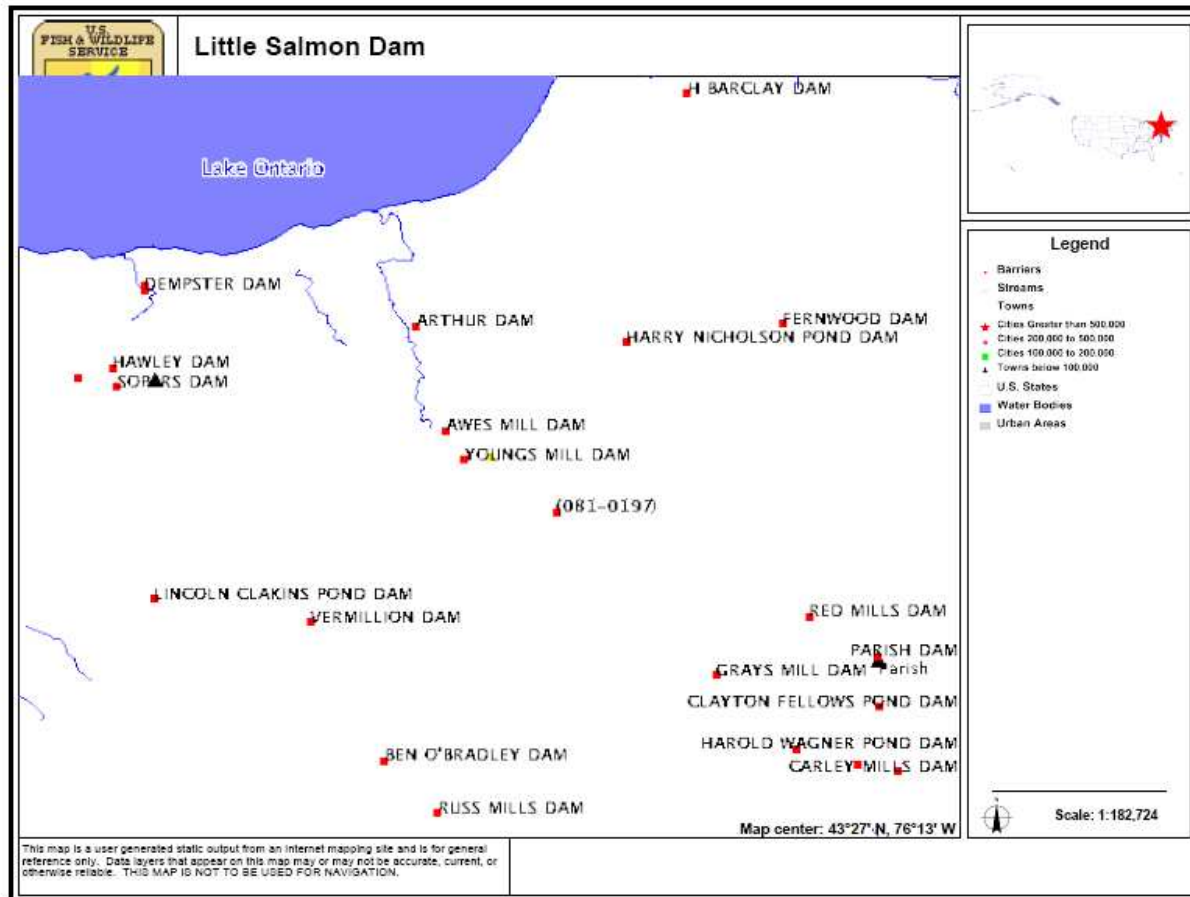




Barrier ID	Barrier Name	Height (ft)	Waterbody	Type	H.U.C.
081-0191	LITTLE SALMON DAM	11	LITTLE SALMON RIVER	Laid-Up	SALMON - SANDY

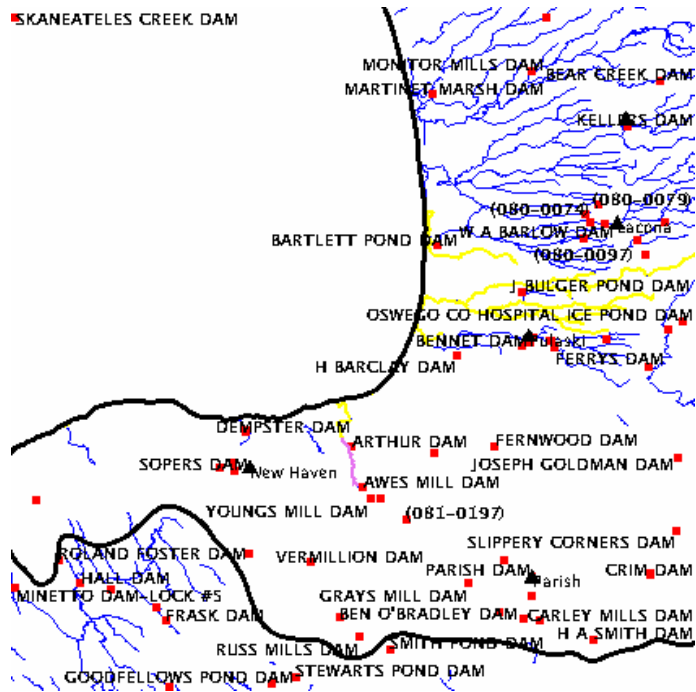
LITTLE SALMON DAM	
Source:	New York
Type:	Laid-Up
Purpose:	Unknown
Year Completed:	1895
Owner Name:	T G LUDINGTON
Owner Type:	Private Landowner
Comments:	
Physical	
Height:	11.0
Width:	
Length:	65.0
Location	
Longitude:	
Latitude:	
River/Stream:	LITTLE SALMON RIVER
County:	Jefferson
HUC:	SALMON – SANDY (4140102)

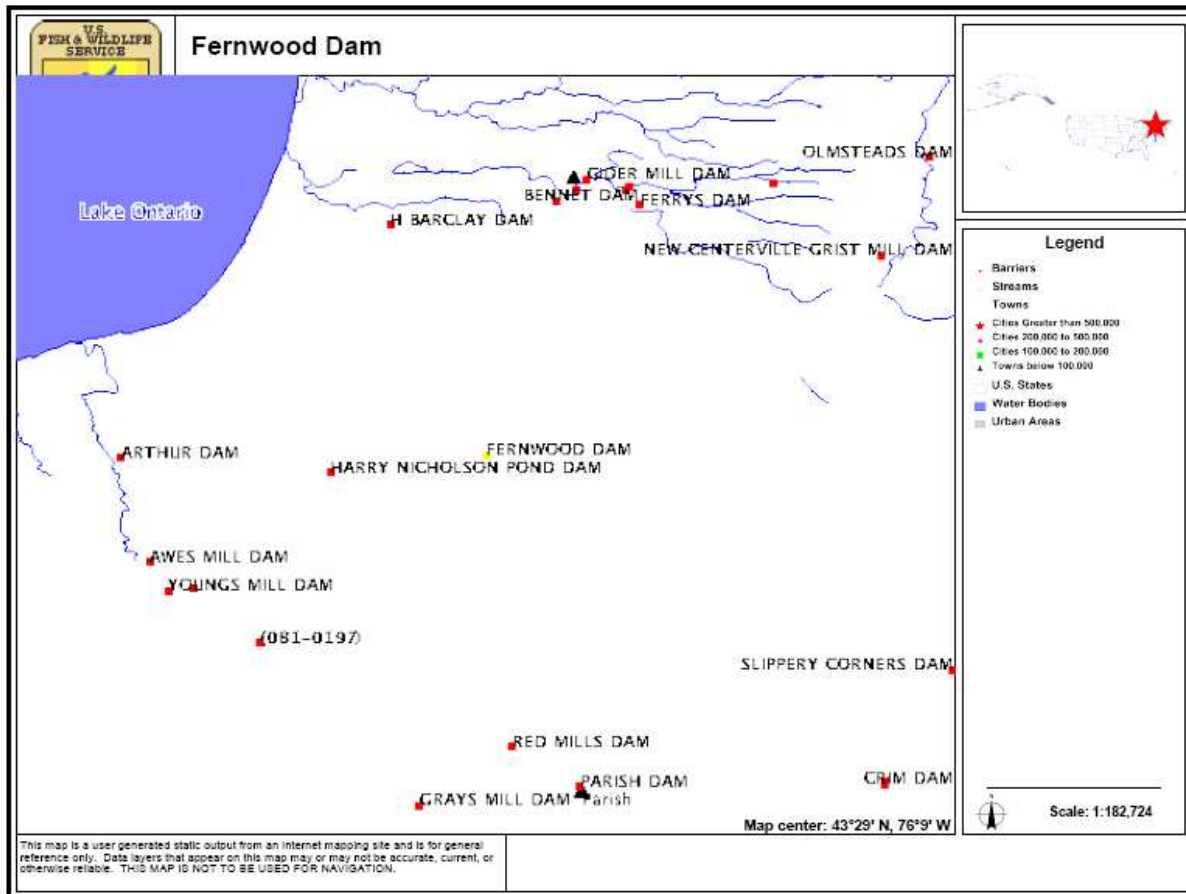




Barrier ID	Barrier Name	Height (ft)	Waterbody	Type	H.U.C.
081-0166	FERNWOOD DAM	15	GRINDSTONE CREEK	Gravity	SALMON - SANDY

Fernwood Dam	
Source:	New York
Type:	Gravity
Purpose:	Hydroelectric
Year Completed:	1826
Owner Name:	TH YOUNG COMPANY
Owner Type:	Private Landowner
Comments:	
Physical	
Height:	15.0
Width:	
Length:	116.0
Location	
Longitude:	
Latitude:	
River/Stream:	GRINDSTONE CREEK
County:	Oswego
HUC:	SALMON - SANDY (4140102)





APPENDIX 11. Dam Removal Funding Matrix

American Rivers/NOAA

A. Fund for Feasibility Studies, Removal and Ladders

Fish America

A. Fund for Removal and Ladders ONLY

Lake Ontario Coastal Initiative
(LOCI)

A. Fund for Feasibility Studies, Removal and Ladders

Environmental Protection
Agency

A. Fund for Feasibility Studies, Removal and Ladders
1. Great Lakes Watershed Restoration Grant

US Fish and Wildlife

A. Fund for Feasibility Studies, Removal and Ladders
1. Fish Enhancement, Mitigation and Research Fund
(FEMRF)
a. Open Call Grant

Army Corp of Engineers

A. Fund for Feasibility Studies, Removal and Ladders

***This report has generated several issues and concerns with removal of these barriers. The issues are listed below and their impact with the removal of each of these barriers will be studied accordingly by each case through thorough environmentally sound alternatives.**

Types of issues and concerns:

- 1. Sea Lamprey**
- 2. Pacific salmon**
- 3. Sedimentation**
- 4. Contaminants**

**This project is supported by a U.S. Environmental Protection Agency Region 2 grant
(# GL-97284705)**

Other major funds provided by:

- 1. Mott Foundation**
- 2. Orchard Foundation**
- 3. Patagonia Foundation**