

AU SABLE RIVER

FOOTE HYDROELECTRIC PROJECT (P-2436)
ALCONA HYDROELECTRIC PROJECT (P-2447)
MIO HYDROELECTRIC PROJECT (P-2448)
LOUD A HYDROELECTRIC PROJECT (P-2449)
COOKE HYDROELECTRIC PROJECT (P-2450)
FIVE CHANNELS HYDROELECTRIC PROJECT (P-2453)

These six projects on the Au Sable River are part of the Settlement Agreement filed on December 7, 1992 that includes a total of 11 projects (3 on the Muskegon, 6 on the Au Sable and 2 on the Manistee River).

A. SUMMARY

1. License Issued: July 15, 1994
2. Expiration: June 30, 2034
3. Waterway: Au Sable River
4. Capacity: Total for six projects: 41 MW
Foote – 9 MW Alcona – 8 MW Mio – 5 MW
Loud – 4 MW Cooke – 9 MW Five Channels – 6 MW
5. Licensee: Consumers Power Company (Now Consumers Energy)
6. Counties: Iosco County and Alcona County, MI
7. Federal Lands: Huron National Forest administered by US Forest Service
8. Brief Project Descriptions:
 - a. Foote (P-2436)
 - A dam containing two existing earth fill embankment sections, a concrete core wall, and a steel sheet pile cutoff wall
 - A 93-foot-long reinforced concrete spillway
 - An impoundment with an area of 1,702 acre-feet
 - A concrete powerhouse with three generating units
 - Transmission facilities, including a powerhouse step-up substation and a 600-foot-long, 46-kilovolt transmission line and appurtenant facilities.
 - Average annual energy production of 30,906 megawatt hours (MWh), based on a ten-year period of record from 1980 through 1989.
 - b. Alcona (P-2447)
 - Dam containing two existing earth fill embankment sections, a concrete core wall, and a steel sheet pile cutoff wall
 - A 250-foot-long emergency spillway
 - An existing impoundment with an area of 1,470 acre-feet
 - A 135-foot-long tailrace

- A concrete and masonry powerhouse containing two generating units
 - Transmission facilities, including a powerhouse step-up substation and a 400-foot-long, 138-kilovolt transmission line, and appurtenant facilities
 - The project has an average annual energy production of 26,038 MWh, based on a ten-year period of record from 1980 through 1989.
- c. Mio (P-2448)
- A dam containing two existing fill embankment sections, a concrete core wall, and a steel sheet pile cutoff wall
 - A 530-foot-long emergency spillway
 - A 30-foot-wide concrete slab and buttress service spillway
 - An existing impoundment with a storage area of 369 acre-feet
 - A 185-foot-long tailrace
 - A concrete and masonry powerhouse containing two generating units
 - Transmission facilities, including a powerhouse step-up substation with a transmission voltage of 138 kilovolts (kV), and appurtenant facilities
 - The project has an average annual energy production of 15,396 MWh, based on a ten-year period of record from 1980 through 1989.
- d. Loud (P-2449)
- Two existing earth embankment dam sections
 - A concrete slab and buttress spillway section
 - An existing impoundment with a storage area of 1,056 acre-feet
 - A powerhouse containing 2 generating units
 - Transmission facilities, and appurtenant facilities
- e. Cooke (P-2450)
- Two existing earth embankment dam sections
 - A concrete slab and buttress spillway section
 - An existing impoundment with a storage area of 1,743 acre-feet
 - A powerhouse containing three generating units
 - Transmission facilities, and appurtenant facilities
- f. Five Channels (P-2453)
- Two existing earth embankment dam sections, a concrete slab and buttress spillway section,
 - An existing impoundment with a storage area of 124 acre-feet
 - A powerhouse containing two generating units
 - Transmission facilities and appurtenant facilities.

9. Settlement Agreement (SA): Filed with FERC Dec 1992; SA includes a total of 11 projects (3 on the Muskegon, 6 on the Au Sable and 2 on the Manistee River).

10. Parties to SA:

- a. Consumers Power
- b. U.S. Forest Service (FS)
- c. U.S. Fish and Wildlife Service (FWS)
- d. National Park Service (NPS)
- e. Michigan Department of Natural Resources (MI DNR)
- f. State Historic Preservation Officer (Preservation Officer)

B. IMPORTANT FUNDING PROVISIONS IN LICENSE/SA

The provisions in the SA are applicable to all projects that are incorporated under this SA.

AuSable River	Cooke	P-2450
	Five Channels	P-2453
	Foote	P-2436
	Alcona	P-2447
	Loud	P-2449
	Mio	P-2448
Muskegon River	Rogers	P-2451
	Hardy	P-2452
	Croton	P-2468
Manistee River	Hodenpyl	P-2599
	Tippy	P-2580

1. Decommissioning [Reference: License Article 204]

The SA required Consumers Energy to study decommissioning of all of its dams, including reviewing what steps were necessary, what options for retirement exist for each facility, the likelihood of early retirement, and costs associated with retiring the entire project. By 2004, Consumers Energy began consultations with state and federal agencies. In a report published in 2007, Consumers stated that the cost of removal would be \$99 million. They have no plans to retire any of the dams before the licenses expire in 2034.

2. Water Quality [Reference: License Article 405]

Funding

Under the SA, Consumers Energy shall provide 1.75 million (in 1992 dollars) for study, planning, design and construction of water quality enhancements, including dissolved oxygen (DO) enhancement measures and water temperature enhancement

measures for its hydroelectric projects on the Muskegon, Au Sable, and Manistee Rivers.

Flows

Consumers Energy is required to install flow gauge upstream and downstream of Rogers, Hardy and Croton dams to monitor flows.

Following minimum water temperature are required downstream of the projects:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rogers	38	38	41	56	70	80	83	81	74	64	49	39
Hardy	38	38	41	56	70	80	83	81	74	64	49	39
Croton	38	38	43	54	65	68	68	68	63	56	48	40

Operation mode

Rogers – Run-of-river

Hardy – Peaking

Croton – Re-regulation

Dissolved Oxygen

Rogers/Hardy/Croton Project – No less than 5 mg/L in the project tail-waters.

3. *Funding for Gauge and Water Quality(WQ) monitoring* [Reference: License Article 407]

The license requires Consumers Energy to fund \$500,000 (in 1992 dollars) to construct new or upgrade existing stream flow gauging and WQ monitoring facilities for all 11 projects on 3 rivers.

4. *Funding for Fish Protection* [Reference: License Article 408]

The license requires Consumers Energy to fund \$5 million (in 1992 dollars) to study, plan, design and construct fish protection devices for all 11 projects.

5. *Michigan Habitat Improvement Account* [Reference: License Article 409]

Consumers Energy will provide Michigan with funding for habitat restoration and other purposes before October 1 of each year - \$9,000 (in 1992 dollars)

6. *Land Management Plan* [Reference: License Article 411]

The Consumers Energy will prepare a Land Management Plan that will include the following:

- a. Bald Eagle Management Plan
- b. Wildlife Management Plan
- c. Buffer Zone management Plan
- d. Recreation development Plan

e. Land lease Program

During the duration of license, \$2.5 million (in 1992 dollars) will be allocated for these programs.

7. *Soil Erosion Control Plan* [Reference: License Article 412]

This Plan will require studies for information collection and should explain control alternatives. \$1 million (in 1992 dollars) will be separated for erosion control activities for all 11 projects.

8. *Cultural Resources Management Plan* [Reference: License Article 413]

\$1 million allocated for historical and archaeological resource evaluation, and mitigation and enhancement for all 11 projects.

9. *Other Activities* [Reference: License Article 415]

Consumers Energy will not require prior Commission approval for activities like

- a. Landscape plantings
- b. Non-commercial piers, landings, docks or similar structures that accommodate no more than 10 watercrafts at a time
- c. Embankments, retaining walls or similar structure for erosion control

C. STATUS AS OF 2009

The settlement required Consumers Energy to conduct water quality evaluation at its eleven hydro projects. The Water Quality Evaluation Reports were completed in 2002 and reviewed jointly by the resource agencies and the MHRC.

Department of Environmental Quality (DEQ) determined that the diffuse system did not meet the minor project criteria and as such a 20-day public review period must be allowed. This has delayed installation as the permit was not issued until August 5 and the contractor (Mobley Engineering) was not available to do the installation in August. It is hoped that Mobley will have a break in their schedule and be able to install the upwelling system in September so that it can still be tested this year.

Also in 2007, Consumers Energy gathered the weather and stream data needed for modeling at the Au Sable River Mio Plant. The development of the computer model was completed in the fall of 2008 and initial test runs for Mio water quality model a upwelling system will provide benefit at Mio. The Michigan Hydro Relicensing Coalition (MHRC) requested installment and testing during the summer of 2009.

MDNR Fish Contribution Projects

Consumers Energy will make the annual fish contributions for FY 2009 and amortized payment for 2001/2002 in accordance with the 10/31/2005 FERC Order. The MMAC Team will consult on HIA project proposals and forward recommendations to MI DNR.

Projects completed in 2008 were the large woody structure enhancement on the Au Sable River System in the amount of \$80,000 and the Van Etten Dam Fish Passage Engineering on the Au Sable River System in the amount of \$50,000.

Projects approved for FY 2008 Cedar Creek Habitat Improvements with \$25,000 from the HIA Account, Mio to McKinley Creel Survey with \$92,522 from the HIA Account, and Foote Dam Automation project with \$60,000 from the HIA Account.

Project Retirement Study

Consumers has completed consultations with the Resource Agencies, MHRC and general public on a plan for studying the costs that would be associated with potential retirement of the 11 projects. The study plan was filed with FERC on January 13, 2005 and approved by FERC on April 7, 2005. A final report was filed with FERC by Consumers in May, 2007 which covered the planning, conducting, and studies on the cost of retiring each of the eleven Consumers project. Instead of submitting a plan for establishing a trust fund for funding the retirement costs through its retail and wholesale general rate filings, Consumers proposed to recover its projected retirement costs through its depreciation rates.

Although the license articles state that upon receiving the study report, and after public notice and opportunity for hearing, FERC may issue such orders with respect to project retirement and financing as it deems appropriate, FERC issued a final order approving the retirement study report. The MI DNR and MHRC have filed for Rehearing of the Order raising the following issues:

1. The Commission has failed to public notice the Retirement Study Report and provide the opportunity for hearing before issuing an Order with respect to project retirement and financing.
2. There are technical concerns regarding the Retirement Study Reports and the conclusions derived in them.
3. Is Consumers Energy's plan for funding retirement costs a viable approach?
4. The proposed funding plan submitted by Consumers does not meet the requirements and intent of the terms of the Settlement Agreement.

The resource agencies and MHRC began negotiations with Consumers to resolve the issues. In March, 2008 the resource agencies and MHRC entered into a Settlement Agreement with Consumers resolving the various issues regarding the Retirement Study Reports. Consumers, the resource agencies and the MHRC agree to consult in 2001

regarding possible updating of all or part of the retirement study reports. Consumers is also willing to discuss at that same time whether it would be appropriate to revise the Article 404/405 water quality enhancement spending provision. This will allow time to evaluate the effectiveness of the current or proposed projects in progress against the remaining dollars in the Article 404/405 account at that time to determine if adjustment to the commitment may be appropriate. In the meantime, Consumers and the resource agencies and MHRC will continue to cooperatively work toward the water quality objectives contained in Articles 404 and 405.

Au Sable River Projects (6 developments)

D. Update

Post-license Activities:

The Au Sable River Project is owned by Consumers Energy. The Manistee-Muskegon-Au Sable (MMAU) Coordination Team coordinates implementation of the 40-year FERC License conditions and the Settlement Agreement provisions. The team is comprised of parties to their 1992 Settlement Agreement from Consumers Energy, US Forest Service, US Fish and Wildlife Service, Michigan DNR, and the Michigan Hydro Relicensing Coalition. Each year Consumers Energy publishes the "Hydro Reporter" (last published in 2019) which reports general information on their hydropower projects activities in the areas of fish habitat improvement, reforestation on project lands, protection of historic places, and implementation of environmental goals.

<https://www.consumersenergy.com/-/media/CE/Documents/electric-generation/hydro-reporter.ashx?la=en&hash=E2A183EFFC1A2723936D92BE51876576>

The Michigan Hydro Relicensing Coalition publishes the "Institutional Knowledge Capture" report (2020). It's a "living" document in the sense that it gets updated periodically. It covers the re-licensing history, status, lessons learned, etc. of Consumers Energy's 11 projects on the Au Sable, Manistee, and Muskegon. It also documents the license surrender, de-commissioning, and subsequent dam removal of three hydro projects on the Boardman River.

https://docs.google.com/document/d/1PcPkunnqmsOtT5CHrDVfwEcTp_2vHRvgwnnOUDO2ZD8/edit?ts=5e2b7fd1

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