VOLUME 1 OF 2: PUBLIC

FINAL LICENSE APPLICATION

FRENCH LANDING HYDROELECTRIC PROJECT
FERC PROJECT NO. 9951

Submitted by:

STS Hydropower, LLC
and
the Van Buren Charter Township, Michigan

Prepared by:

GOMEZ AND SULLIVAN ENGINEERS

April 2025

FRENCH LANDING HYDROELECTRIC PROJECT
(FERC NO. 9951)

NEW LICENSE FOR A MAJOR WATER PROJECT
LESS THAN 10 MW – EXISTING DAM (18 C.F.R. § 4.61)

VOLUME 1
PUBLIC

CONTENTS

This Final Application for New License for the French Landing Hydroelectric Project (FERC No. 9951) consists of the following:

BEFORE THE

UNITED STATES OF AMERICA

FEDERAL ENERGY REGULATORY COMMISSION

STS Hydropower, LLC and the Van Buren Charter Township, Michigan	**)**	**FERC Project No. 9951**
	)	**French Landing Hydroelectric Project**
	)	

APPLICATION FOR NEW LICENSE

FOR A MAJOR WATER POWER PROJECT LESS THAN 10 MW – EXISTING DAM

INITIAL STATEMENT

1. STS Hydropower, LLC and the Van Buren Charter Township (hereinafter collectively referred to as the "Applicants" or "Licensees") apply to the Federal Energy Regulatory Commission (FERC or the Commission) for a New License for the French Landing Hydroelectric Project (Project), an existing licensed major project, as described in the attached exhibits. The Project is licensed as Project No. 9951. The current license for the Project was issued by order dated May 5, 1987. The effective date of the license was May 1, 1987 for a period of 40 years. The current license expires on April 30, 2027. The Applicants are the only entities that have or intend to obtain and will maintain any proprietary right or interest to construct, operate, or maintain the Project.

2. The location of the Project is:

State:	Michigan
Counties:	Wayne Counties
Township or nearby towns:	Van Buren Charter Township and City of Belleville
Stream or other body of water:	Huron River

3. The exact name, address, and telephone numbers of the applicants are:

Jody Smet
Senior Vice President Regulatory Affairs
STS Hydropower, LLC
7315 Wisconsin Avenue, Suite 1100W
Bethesda, Maryland 20814

Ron Akers

Director of Municipal Services
Van Buren Charter Township
46425 Tyler Road
Van Buren Township, MI 48111
rakers@vanburen-mi-org

4. The exact name and business address of each person authorized to act as agent for the applicant is:

Melissa Rondou
Director, Licensing and Compliance
STS Hydropower, LLC
116 N. State Street, P.O. Box 167
Neshkoro, WI 54960
Telephone: (920) 293-4628 ext. 347
melissa.rondou@eaglecreekre.com

Copies of all correspondence should also be sent to:

Tim Sullivan
Project Manager
Gomez and Sullivan Engineers, D.P.C.
PO Box 2179
Henniker, NH 03242
Telephone: (603) 428-4960
timsullivan@gomezandsullivan.com

5. The Applicant is:

STS Hydropower, LLC and the Van Buren Charter Township – Licensees for the water power project designated as Project No. 9951 in the records of the Federal Energy Regulatory Commission. The Licensee is not claiming preference under section 7(a) of the Federal Power Act, 16 U.S.C. § 796.

6. (i) The statutory or regulatory requirements of the State of Michigan, in which the Project is located, which would, assuming jurisdiction and applicability, affect the Project as proposed with respect to bed and banks and the appropriation, diversion, and use of water for power purposes, and with respect to the right to engage in the business of developing, transmitting, and distributing power and in any other business necessary to accomplish the purposes of the license under the Federal Power Act are:

(1) Michigan Natural Resources and Environmental Protection Act (NREPA), Act 451 of 1994 et seq (as amended).

(2) The Licensee is subject to Water Quality Certification from the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Section 401(a)(1) of the Clean Water Act (CWA).

(ii) The steps which the Applicant has taken or plans to take, to comply with each of the laws cited above are:

(1) State regulation of dams in Michigan are done pursuant to Part 307 and 315 of Act 451 of 1994 (NREPA). MCL324.31506(2)(a) of the act exempts federally licensed dams such as the Project dam if federal dam safety inspection provisions apply during the license period and the inspection reports are provided to the department (EGLE Dam Safety Unit).

(2) The Licensees will submit a request to EGLE for Water Quality Certification, no later than 60 days after FERC issues notice that the Final License Application is ready for environmental analysis. Since this is an application for a subsequent license for an existing waterpower project, the Licensees expect to continue to operate the facility pursuant to approvals, licenses, permits, and exemptions already in effect.

7. The Project generally consists of: (1) a dam consisting of: (i) a 35-foot-high, 270-foot-long left earth embankment with a crest elevation of 658.5 feet (NGVD29[1]); (ii) a 33-foot-2-inch-wide sector gated left spillway bay with a sill elevation of 640.0 feet; (iii) a 14-foot-3-inch wide left concrete pier; (iv) a 50.5-foot-wide by 68-foot-long masonry powerhouse of concrete substructure and brick substructure; (v) a 14-foot-3-inch-wide right concrete pier; (vi) a 33-foot-2-inch-wide sector gated right spillway bay with a sill elevation of 640.0 feet; (vii) a 12-foot-wide and 83-foot-long abandoned fish ladder; (viii) a 181-foot-1.5-inch-long ungated six barrel-arch spillway with a crest elevation of 652.0 feet; and (ix) and a 515-foot-long right earth embankment with a crest elevation of 657.5 feet; (2) a powerhouse containing one generating unit rated at 1,800 kW; (3) a reservoir with a surface area of 1,270 acres and a storage capacity of 17,780 acre-feet at maximum pool elevation of 651.5 feet[2]; (4) an outlet channel approximately 108 feet long with a variable width, with a minimum distance of 88 feet and a maximum distance of 100 feet 5 inches; (5) transmission facilities including (i) the 4.16-kV generator leads; (ii) a 525-foot-long buried 4.16 kV transmission line; (iii) a 2,500 kVA 4.16/41.6-kV, 2-HVA step-up transformer; (iv) the 50-foot-long, 4.16-kV transmission line to the point of interconnection and; (6) appurtenant facilities.

8. No lands of the United States are affected by the Project.

9. This is an existing Project, and no new construction is planned in association with this relicensing.

[1] All elevations herein are referenced to the National Geodetic Vertical Datum of 1929 (NGVD29), U.S. feet.
[2] The Project is licensed to operate up to elevation 651.5 ft, however, it is typically operated at elevation 650.5 ft

ADDITIONAL INFORMATION REQUIRED BY 18 C.F.R. § 4.32(a)

1. STS Hydropower, LLC and the Van Buren Charter Township own and, as co-Licensees for the Project, will maintain any proprietary right necessary to construct, operate, and maintain the Project.

2. The names and mailing addresses of:

   (i) Every county in which any part of the project, and in which any federal facility that is used or to be used by the project, is located:

   Charter County of Wayne
   3600 Commerce Ct
   Wayne, MI 48184

   There are no federal facilities used by the Project.

   (ii) *Every city, town, or similar local political subdivision*

   *(*A*) in which the project is located and in which any federal facility that is used by the project is located, or:*

   City of Belleville
   6 Main Street
   Belleville, MI 48111

   Van Buren Charter Township
   46425 Tyler Road
   Van Buren Township, MI 48111

   *(*B*) that is within 15 miles of the project dam and has a population of 5,000 or more people is*

   City of Allen Park
   15915 Southfield Road
   Allen Park, MI 48101

   City of Ann Arbor
   Larcom City Hall, 3rd floor
   301 E. Huron Street
   Ann Arbor, MI 48104

   City of Dearborn
   Dearborn Administrative Center
   16901 Michigan Avenue
   Dearborn, MI 48126

   City of Dearborn Heights
   6045 Fenton Street
   Dearborn Heights, MI 48127

City of Detroit
2 Woodward Avenue #200
Detroit, MI 48226

City of Ecorse
Albert B. Buday Civic Center
3869 West Jefferson Avenue
Ecorse, MI 48229

City of Flat Rock
25500 Gibraltar Road
Flat Rock, MI 48134

City of Garden City
6000 Middlebelt Road
Garden City, MI 48135

City of Inkster
26215 Trowbridge Street
Inkster, MI 48141

City of Lincoln Park
1355 Southfield Road
Lincoln Park, MI 48146

City of Livonia
33000 Civic Center Drive
Livonia, MI 48154

City of Melvindale
3100 Oakwood Boulevard
Melvindale, MI 48122

City of Milan
147 Wabash Street
Milan, MI 48160

City of Northville
215 W. Main Street
Northville, MI 48167

City of Plymouth
201 S. Main Street
Plymouth, MI 48170

City of Riverview
14100 Civic Park Drive
Riverview, MI 48193

City of Romulus
11111 Wayne Road
Romulus, MI 48174

City of Southgate
14400 Dix-Toledo Road
Southgate, MI 48195

City of Taylor
23555 Goddard Road
Taylor, MI 48180

City of Trenton
2800 3rd Street
Trenton, MI 48183

City of Wayne
3355 S. Wayne Road
Wayne, MI 48184

City of Westland
36300 Warren Road
Westland, MI 48185

City of Woodhaven
21869 West Road
Woodhaven, MI 48183

City of Wyandotte
3200 Biddle Avenue
Wyandotte, MI 48192

City of Ypsilanti
1 S. Huron Street
Ypsilanti, MI 48197

(iii) *Every irrigation district, drainage district or similar special purpose political subdivision in which any part of the project is located and in which any federal facility that is used by the project is located or that owns, operates, and maintains or uses any project facility:*

There is no irrigation district, drainage district, or similar special purpose political subdivision in which any part of the Project is located or that owns, operates, maintains, or uses any Project facility. The Project uses no Federal facilities and occupies no Federal lands.

(iv) *Every other political subdivision in the general area of the project that there is some reason to believe would likely to be interested in, or affected by, the notification:*

There are no other political districts or subdivisions that are likely to be interested in or affected by the notification.

(v) *All Indian tribes that may be affected by the project:*

The Licensees are not aware that the Project affects any Native American tribe. The following is a listing of Native American tribes that may have some level of interest in the area surrounding the Project:

Bay Mills Indian Community
Executive Council
12140 W. Lakeshore Drive Rt. 1,
Box 303
Brimley, MI 49715

Grand Traverse Band of Ottawa and
Chippewa Indians
2605 N.W. Bayshore Drive
Suttons Bay, MI 49682

Hannahville Indian Community
N-14911 Hannahville
B-1 Road
Wilson, MI 49896-9728

Keweenaw Bay Indian Community
16429 Beartown Road
Baraga, MI 49908

Lac Vieux Desert Band of Lake Superior
Chippewa Indians
23968 East Pow Wow Trail
P.O. Box 249
Watersmeet, MI 49969

Little River Band of Ottawa Indians
2608 Government Center Drive
Manistee, MI 49660

Little Traverse Bay Bands of Odawa Indians
P.O. Box 246
7500 Odawa Circle
Harbor Springs, MI 49660

Match-e-be-nash-she-wish Band of Potawatomi Indians of Michigan
(Gun Lake)
2872 Mission Dr.
Shelbyville, MI 49344

Nottawaseppi Huron Band of the Potawatomi Indians
1485 Mno-Bmadzewen Way
Fulton, MI 49052

Pokagon Band of Potawatomi Indians
58620 Sink Road P.O. Box 180
Dowagiac, MI 49047

Saginaw Chippewa Indian Tribe
7070 E. Broadway
Mt. Pleasant, MI 48858

Sault Ste. Marie Tribe of Chippewa Indians
523 Ashmun Street
Sault Ste. Marie, MI 49783

Forest County Potawatomi Community of Wisconsin
5416 Everybody's Road, P.O. Box 340
Crandon, WI 54520

Lac du Flambeau Band of Lake Superior Chippewa Indians
P.O. Box 67
Lac du Flambeau, WI 54538

Menominee Indian Tribe of Wisconsin
W2908 Tribal Office Loop Road
P.O. Box 910
Keshena, WI 54135

Miami Tribe of Oklahoma
P.O. Box 1326
Miami, OK 74355

Seneca-Cayuga Nation
P.O. Box 453220
Grove, OK 74345

3. *The Applicant has in accordance with 18 CFR Section 4.32(a)(3) made a good faith effort to notify, by certified mail, the following entities of the filing of this application:*

   (a) Every property owner of record of any interest in the property within the bounds of the Project;

   (b) The entities identified in paragraph (2) above;

   (c) Other governmental agencies that would likely be interested in or affected by the application.

   Since this is an application for a new license for an existing project under Section 15 of the Federal Power Act, the requirement to provide notification by certified mail of the filing of the application does not apply.

4. *In accordance with 18 C.F.R §4.61 and 16.10 of the Commission's regulations, the following Exhibits are attached to and made a part of this application:*

Exhibit A – Project Description and Proposed Operations
Exhibit E – Environmental Report
Exhibit F – General Design Drawings and Supporting Design Report
(CEII filed under separate cover)
Exhibit G – Project Map
Exhibit H – Description of Project Management and Need for Power Project

SUBSCRIPTION

This Application for New License for the French Landing Hydroelectric Project, FERC No. 9951, is executed in the Commonwealth of Virginia, County of Chesterfield, by Ms. Jody Smet, Senior Vice President Regulatory Affairs of STS Hydropower, LLC, 7315 Wisconsin Avenue, Suite 1100W, Bethesda, MD 20814, who, being duly sworn, deposes and says that the contents of this application are true to the best of their knowledge or belief and that they are authorized to execute this application on behalf of STS Hydropower, LLC and the Van Buren Charter Township. The undersigned has signed this application this 15th day of April, 2025.

STS HYDROPOWER, LLC

By Jody Smet

Jody Smet
Senior Vice President Regulatory Affairs
STS Hydropower, LLC

VERIFICATION

Subscribed and sworn to before me, a Notary Public of the Commonwealth of Virginia, this 25 day of April, 2025.

Samantha Frey
(Notary Public)

(My Commission Expires 01/31/2029)/seal

SAMANTHA FREY
NOTARY PUBLIC
REG. # 00348142
COMMONWEALTH OF VIRGINIA
MY COMM. EXPIRES JAN. 31, 2029

EXHIBIT A
PROJECT DESCRIPTION AND PROPOSED MODE OF OPERATION

April 2025

FRENCH LANDING HYDROELECTRIC PROJECT

(FERC NO. 9951)

APPLICATION FOR NEW LICENSE FOR MAJOR PROJECT LESS THAN 10 MW – EXISTING DAM

EXHIBIT A PROJECT DESCRIPTION AND PROPOSED MODE OF OPERATION

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LIST OF ABBREVIATIONS AND DEFINITIONS

cfs	Cubic feet per second
Commission	Federal Energy Regulatory Commission
El.	Elevation
FERC	Federal Energy Regulatory Commission
ft	Feet
hp	Horsepower
HVA	High voltage amplifier
kV	kilovolt
kVA	kilovolt-ampere
kW	kilowatt
Licensees	STS Hydropower, LLC. (STS) and Van Buren Charter Township, Michigan (MI)
MDNR	Michigan Department of Natural Resources
MI	Michigan
mi^2	Square miles
MW	Megawatt
MWh	Megawatt per hour
rpm	Revolutions per minute
STS	STS Hydropower, LLC
USGS	United States Geological Survey

FRENCH LANDING HYDROELECTRIC PROJECT

(FERC NO. 9951)

APPLICATION FOR NEW LICENSE
FOR MAJOR PROJECT LESS THAN 10 MW – EXISTING DAM

EXHIBIT A
PROJECT DESCRIPTION AND PROPOSED MODE OF OPERATION

1 INTRODUCTION

STS Hydropower, LLC (STS) and the Van Buren Charter Township, Michigan (collectively, the Licensees) are the licensees for the 1.8-megawatt (MW) French Landing Hydroelectric Project (Project), which is licensed with the Federal Energy Regulatory Commission (FERC or Commission) as FERC Project No. 9951. The French Landing Dam and hydropower discharge are located in Van Buren Charter Township, Michigan (MI). A Project location map is shown in Figure 1-1. The original FERC license was issued on May 5, 1987 (effective May 1, 1987) and expires on April 30, 2027.

The Project is located on the Huron River in eastern Michigan, approximately 26 miles upstream of the confluence with Lake Erie. The Huron River Basin has a total drainage area of about 900 square miles (mi^2) and is generally bounded on the south by the Ottawa-Stony and Raisin basins, on the west by the Upper Grand basin, and on the north by the Shiawassee, Clinton, and Detroit basins. The Huron River's drainage area includes seven Michigan counties (Oakland, Livingston, Ingham, Jackson, Washtenaw, Wayne, and Monroe). From its headwaters at Big Lake near Pontiac, Michigan, the Huron River flows south and east approximately 125 miles to its mouth at Lake Erie. The drainage area at the Huron River Dam is approximately 841 mi^2.

Table 1-1 provides a summary of pertinent Project information that is discussed further in this exhibit.

Table 1-1: General Project Information

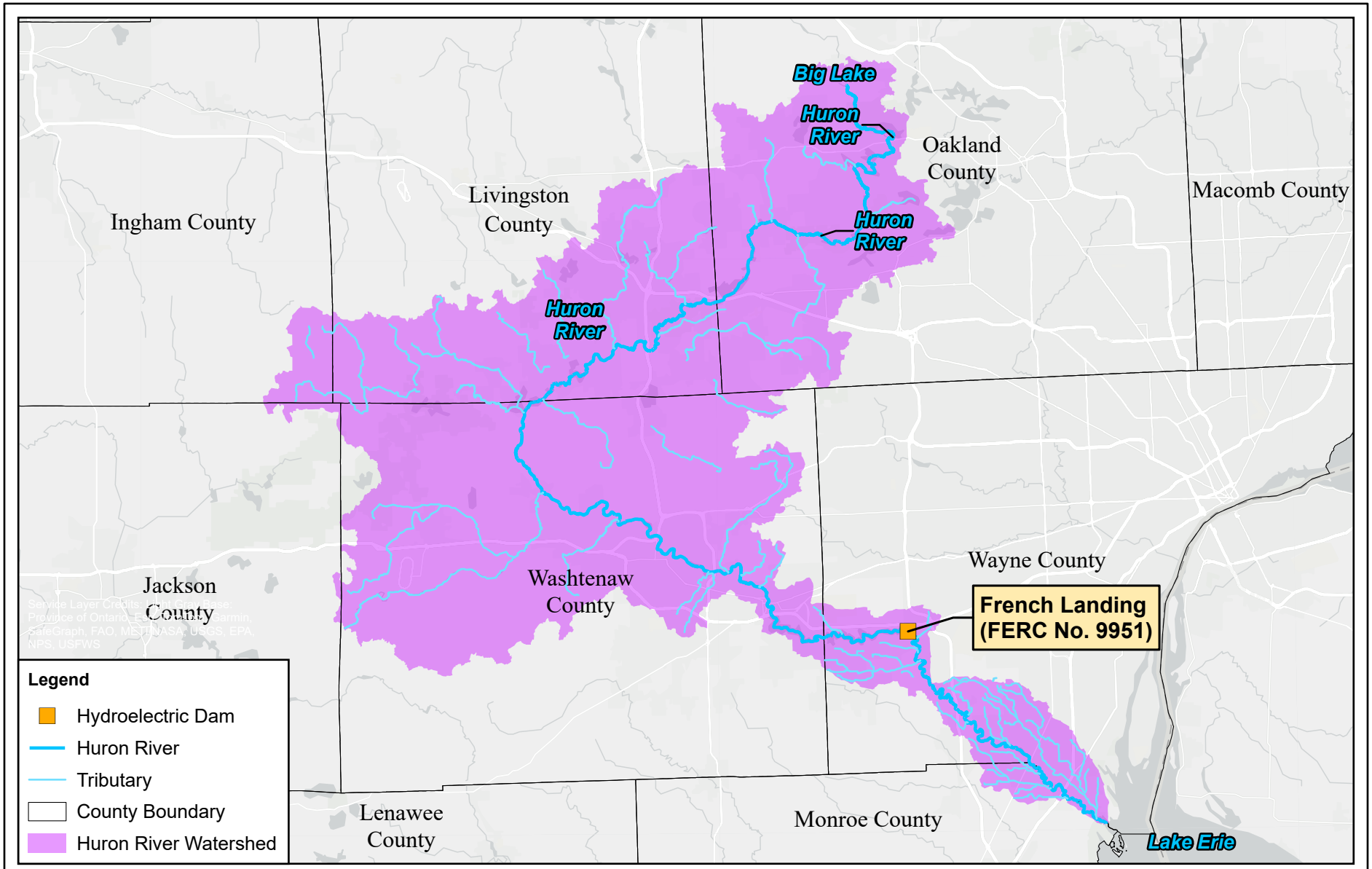
General Information	
Owner	STS Hydropower, LLC and Van Buren Charter Township
FERC Project Number	9951
Current License Term	May 1, 1987-April 30, 2027
Counties	Wayne, MI
General	
Nearby Town(s)	Van Buren Charter Township, City of Belleville, City of Ypsilanti
River	Huron
Latitude/Longitude	42° 12′ 50.85″ -83° 26′ 27.31″
Drainage Area at French Landing Dam	841 mi^2
Drainage Area of Huron River Basin	900 mi^2
Impoundment	
Project Impoundment	Belleville Lake
Maximum Full Pond Elevation	El. 651.5 ft.[1,2]
Normal Tailwater Elevation	615.7 ft.
Impoundment Length	Approximately 7 miles
Length of impoundment shoreline (including islands)	24 miles
Gross Storage	17,780 acre-ft.
Useable Storage at normal full pond	Negligible, run-of-river operation
Surface Area at normal full pond	1,270 acres
Average Annual outflow from the Project	632 cfs
Average Annual inflow at Project	632 cfs
Structures	
Dam	**French Landing**
Construction	Earth embankment with concrete barrel arch emergency spillway
Total Length	1,123.5 ft.
Earthen embankment section Length	Left section 270 ft., Right section 515 ft.
Ungated Spillway Section Length	181 ft 1.5 inch

[1] Unless otherwise noted, all elevations referenced herein refer to the National Geodetic Vertical Datum of 1929 (NGVD29), U.S. Feet.
[2] The Project is licensed to operate up to elevation 651.5 ft, however, the Project is typically operated at elevation 650.5 ft.

General Information	
Gated Section Length	66 ft. 4 inch (two 33-foot-2-inch-long bays)
Powerhouse Width	50.5 ft.
Concrete Piers	28.5 ft (two 14.25-foot-wide)
Fish Ladder Width (Abandoned)	12 ft.
Abutments	Variable, maximum width 34.5 ft.
Powerhouse	
No. of Turbines / Generator Units	1 unit
Turbine Type	Vertical Francis
Runner Diameter	8.1 ft.
Turbine Capacity	1,800 kW (>5,000 hp)
Turbine Speed	124 rpm
Generator Capacity	1,650 kW
Generator Speed	124 rpm
FERC Total Authorized Installed Capacity	1,800 kW[3]
Average Annual Generation (2011-2024)	6,919 MWh
Hydraulic Operating Range	255 to 880 cfs, typical operating range is 255 to 680 cfs[4]
Elevation of Turbine Centerline	El. 637.5 ft.

[3] The current authorized capacity of the Project from which annual payments are determined is 1.8 MW. The Project is "generator limited" based on a generator nameplate capacity of 1.65 MW, however, the capacity of the Project in this license is reported as 1.8 MW based on the capacity of the turbine.

[4] Hydraulic capacity is 880 cfs, however, Project operation generates 80% of this discharge (680 cfs) due to cavitation issue. Hydraulic capacity herein is reported as 880 cfs.



License Application
French Landing Hydroelectric Project
FERC No. P-9951

Figure 1-1:
Project Location Map

Path: D:\EagleCreek\GIS\maps\french_landing\FL_DLA\FL_DLA.aprx

2 PROJECT DESCRIPTION AND PROPOSED MODE OF OPERATION

2.1 Generators and Turbines

The Project has one turbine and one generator as summarized in Table 2.1-1 and Table 2.1-2. The Licensees have no provisions for adding future units.

Table 2.1-1. French Landing Hydroelectric Project Turbine Data

Turbine	
Type	Vertical Francis
Gross Head	36.3 ft.
Hydraulic Capacity	880 cfs
Total Installed Capacity	1,800 kW
Horsepower	>5,000 hp
Rated Runner Speed	124 rpm
Runner Diameter	8.1 ft.

Table 2.1-2. French Landing Hydroelectric Project Generator Data

Generator	
Nameplate Capacity	1,650 kVA (1,650 kW at a 0.8 power factor)
Rated Speed	124 rpm
Operating Voltage	4,160 volts
Other	240 amps

2.2 Existing and Proposed Project Operation

2.2.1 Existing Project Operations

The Project is required by its current FERC license to operate as a run-of-river project where at all times it must act to minimize the fluctuations of the Belleville Lake (the reservoir) water surface elevation. The Project must maintain discharge from the Project so that the flow in the Huron River, as measured immediately downstream from the Project tailrace, approximates the inflow to the Project reservoir.

The reservoir level is maintained by discharging river flows through the vertical Francis turbine with a maximum capacity of 880 cfs. Should the headwater elevation fluctuate more than +/-0.25 feet from the target elevation of 650.5 feet, the wicket gates are adjusted manually by operators in 5% increment. Each 5% adjustment will correspond to a 40 cfs flow increment. Flows greater than 680 cfs are discharged through the 2nd bay discharge wafer, or inside spill, up to an additional 200 cfs. Flows greater than 880 cfs are passed by opening the spillway gates.

Spillway gates (flood control gates or sector gates) are raised and lowered by a buoyancy control system, which is supported on a volume of water in the buoyancy chamber. Water is allowed to enter and exit the chamber through a 16-inch knife gate valve inlet and 2.5-foot-diameter plunger valve. The elevation of the sector gate is adjusted by altering the volume of water in the chamber. Plunger valves are operated manually either by electrical push button controls or with a hand wheel. Gates will typically be opened when the headwater elevation exceeds 651.0 feet.

The powerhouse contains one vertical Francis turbine which drives one 1,650 kW generator. The generation equipment is operated and monitored via the automatic controller located in the powerhouse, or manually. The controller has an alarm system that allows for human intervention if problems should arise with the dam or generating equipment. Generation failure alarms, as well as water level alarms for maximum, minimum, and rate of change are included in the system. If an alarm is activated, the operator is notified through a pager or by phone. An audible siren is also installed at the powerhouse to alert recreationists of a sudden increase in discharge through either the starting of the hydroelectric unit or operation of a sector gate.

During winter operations when the spillway gates are closed during freezing conditions, agitators are placed in front of the spillway gates and inside the Gate #1 operations pier chambers. Generally, the Gate #2 plunger valve is left open just enough to create turbulence to prevent ice development within the Gate #2 operations chamber. Agitators are removed if spillway gate operations are required and when warmer weather returns.

The ungated multiple arch spillway (emergency spillway) is relied upon only during extreme flood events exceeding the combined hydraulic discharge capacity of the powerhouse and gated spillways. Energy dissipation for the multiple arch spillway is provided through two different mechanisms. First, tailwater is anticipated to rise to elevation 631.5 feet before flows begin passing over the ungated spillway crest, thereby creating a 12.5-foot-deep plunge pool above the

downstream toe during high flow events. Second, a sloping reinforced concrete "deflector" wall was constructed within each arch immediately below the arch crest that will redirect water into a vertical wall approximately 35 feet downstream from the multiple arch spillway structure to provide additional energy dissipation. No operational procedures are required for this structure as water will begin to flow over the structure as soon as the headwater rises above the crest.

The 12-foot-wide fish ladder is non-operational and is no longer used to pass flow.

2.2.2 Proposed Project Operations

The Licensees are not proposing any change to Project operations at this time.

2.2.3 Average Annual Generation

Dependable capacity is generally defined as the amount of load a hydroelectric plant can carry under adverse hydrologic conditions during a period of peak demand, for example during the hot, dry conditions typical of August in the Project area. The dependable capacity of the Project is 0.35 MW.

The average annual generation for the period 2011 to 2024 is 6,919 megawatt hours (MWh). Table 2.2.3-1 includes the monthly and annual generation of the Project for this period.

Table 2.2.3-1. Annual and Monthly Gross Generation (MWh) for the Project (2011 - 2024)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2011	397	546	1,173	1,131	1,102	878	290	907	728	871	960	1,128	10,111
2012	1,196	1,145	1,168	927	672	96	42	118	47	215	279	365	6,270
2013	642	878	159	825	747	831	665	309	176	221	617	588	6,658
2014	711	517	975	1,046	1,135	963	577	261	434	378	592	739	8,328
2015	549	269	892	817	616	1,087	686	201	107	108	476	577	6,385
2016	641	535	1,192	1,056	973	208	81	297	175	684	626	716	7,184
2017	1,112	1,093	1,073	1,099	1,143	391	297	94	79	604	442	0	7,427
2018	0	0	0	468	1,129	727	120	145	256	559	915	887	5,206
2019	835	807	1,131	1,146	1,156	1,123	796	263	493	860	1,123	363	10,096
2020	1,401	637	1,145	1,138	995	746	420	105	3	252	2,180	575	9,597
2021	448	394	900	733	278	378	972	724	417	1,158	963	857	8,222
2022[1]	0	0	0	0	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	211	510	532	579	483	786	3,101
2024	951	981	922	1,002	961	396	1,056	673	325	185	455	386	8,293
Mean	**635**	**557**	**766**	**813**	**779**	**559**	**444**	**329**	**269**	**477**	**722**	**569**	**6,919**

[1]The Project was offline from January 2022 through June 2023 for maintenance which included turbine runner and ball bearing shaft work.

2.2.4 Estimated Net and Gross Head

The gross and net head on the single turbine is approximately 36.3 ft and 34.5 ft, respectively.

2.2.5 Impoundment

Belleville Lake is the impoundment created by the French Landing Dam. The impoundment at elevation 651.5 feet is approximately 1,270 acres and extends approximately 7 miles. The gross storage of the impoundment is 17,780 acre/feet. As a run-of-river project, the useable storage is negligible.

2.2.6 Flow Data

The drainage area at the Project is 841 mi^2. Table 2.2.6-1 lists the minimum, maximum, median, and mean annual and monthly flows at the Project based on prorated data from the United States Geological Survey (USGS) Gage No. 04174500 Huron River at Ann Arbor, MI for the period 1988-2024. The flow at the USGS gage was prorated by a factor of 1.154, as described further in Exhibit E of this license application. Annual and monthly flow duration curves are provided in Exhibit E.

The Project's maximum hydraulic capacity is 880 cfs, which was equaled or exceeded approximately 21% of the time on an annual basis for the period analyzed. The estimated average annual flow at the Project is 632 cfs.

Table 2.2.6-1. Daily Average Streamflow (cfs) at the French Landing Project (1988-2024)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Minimum Flow	156	111	90	113	158	37	21	55	60	88	142	73	21
Maximum Flow	2,780	2,965	3,230	3,172	3,772	2,988	2,215	1,880	1,604	2,319	2,734	2,596	3,772
Median Flow	601	630	939	843	744	472	302	261	254	350	554	557	528
Mean Flow	734	749	1,028	939	864	601	370	335	328	418	607	619	632

2.3 Project Structures and Features

The Project generally consists of the dam, powerhouse, reservoir (Belleville Lake), outlet channel, and appurtenant facilities. The FERC authorized capacity of the Project is 1,800 kW (approximately 1.8 MW). More detailed descriptions for each Project component are provided below and shown in Figure 2.3-1. A summary of pertinent Project information was provided in Table 1-1.

2.3.1 Dam

The French Landing Dam was constructed in 1925 and was operated as a hydropower dam until it was decommissioned in 1962. In 1981, the dam was donated to the Van Buren Charter Township, MI. The dam underwent significant rehabilitation in the 1980's, including repairs to the right sector gate, arch spillway, left retaining wall, and several other sections. Additional maintenance was conducted for the right spillway gate valve and concrete access deck overlay (1997), right embankment raise and spillway maintenance (2009-10), spillway gate maintenance (2014), spillway dewatering system rehabilitation, and miscellaneous repairs (2021).

The current configuration of the dam consists of the following (looking downstream from left to right):

- a 270-foot-long left earth embankment section (Figure 2.3.1-1) with a maximum height of 35 feet and a crest elevation of 658.5 feet, including a concrete abutment with a width of 5 feet at the face of the dam, a maximum width of 15 feet, a length of 136 feet, and height of 41.5 feet;

- a 33-foot-2-inch-wide, 12-foot high, 27-foot-deep gated left spillway bay with a sill elevation of 640.0 feet, housing a 22-foot-2-inch long sector (spillway) gate;

- a 14-foot-3-inch-wide left concrete pier with variable height and top elevation ranging from 654.0 ft to 658.0 ft;

- a 50.5-foot-wide powerhouse (Figure 2.3.1-2);

- a 14-foot-3-inch-wide right concrete pier with variable height and top elevation ranging from 654.0 ft to 658.0 ft;

- a 33-foot-2-inch-wide, 12-foot high, 27-foot-deep gated right spillway bay (including a 2.5-foot diameter steel plunger) with a sill elevation of 640.0 feet, housing a 22-foot-2-inch sector (spillway) gate;

- a 12-foot-wide non-operational, abandoned concrete fish ladder with timber slide gate 2-foot wide by 3.5-foot tall by 4 inches thick[5];

- a 181-foot-1.5-inch-wide, 33-foot-high concrete ungated six barrel-arch spillway section, with a crest elevation of 652.0 feet and a 50-foot-long concrete apron;

- a 515-foot-long right embankment section with a maximum height of 32.5 feet and a crest elevation of 657.5 feet (Figure 2.3.1-3), including a variable width concrete abutment with a width of 10 feet of the face of the dam, maximum width of 19.5 feet, length of 145 feet, and height of 46.75 feet, and an 18-foot-wide concrete stop log structure located in the right embankment, where Edison Road bisects the embankment.

2.3.2 **Powerhouse**

The French Landing powerhouse is a 50.5-foot-wide and 68-foot-long structure that is comprised of a concrete substructure and brick superstructure (Figure 2.3.2-1). The powerhouse has a minimum hydraulic discharge of 255 cfs and is equipped with a 124 revolutions per minute (rpm), 5,000 horsepower, 8.1 foot diameter vertical Francis turbine unit with a total generating capacity of 1.8 MW. The generator is rated 1,650 kw, 0.8 power factor, 4,160 volts, 240 amps, and 124 rpm.

The intakes are outfitted with three 10-foot-wide, 22.5-foot tall trashracks with 2 inch clear spacing. A concrete apron with variable width extends from the downstream end of the powerhouse approximately 108 feet, creating the outlet channel further described below.

2.3.3 **Outlet Channel**

The Project has a concrete outlet channel[6] approximately 108 feet long measured from the downstream end of the powerhouse, with a variable width (Figure 2.3.3-1). The minimum width of the channel is 88 feet, while the maximum width is 100 feet 5 inches. Approximately 95 feet downstream from the powerhouse in the tailrace area is a concrete weir. The weir is 10 feet tall and spans the width of the tailrace, approximately 100 feet 5 inches.

At the end of the tailrace channel are walls lined with steel sheet piling. Ten-foot-high sheet piling extends downstream from the end of the tailrace approximately 213 feet on river left. The height of the sheet piling one river right is variable, with 20-foot-high sheet piling extending 147 feet downstream from the end of the outlet channel, and 15-foot-high sheet piling extending another 108 feet.

[5] The gate is abandoned in the closed position and no longer operational, no flow is passed through the fish ladder.
[6] For the purposes of this license application, the term “outlet channel” and “tailrace” are used interchangeably.

2.3.4 Transmission Facilities

The Project transmission facilities include a 4.16-kV generator lead, a 525-foot-long buried 4.16 kV transmission line, a 2,500 kVA 4.16/41.6-kV, 2-HVA step-up transformer, and a 50-foot-long, 4.16-kV transmission line to a transformer, which is the point of interconnection (Figure 2.3.4-1).

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N

0 100 200 400 Feet

Figure 2.3-1:
Project Facilities

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Figure 2.3.1-1: French Landing Dam Left Embankment and Powerhouse

Figure 2.3.1-2: Gated Spillway, Powerhouse, Ungated Six Barrel-Arch Spillway and Right Embankment

Figure 2.3.1-3: Right Embankment

Figure 2.3.2-1: Powerhouse

Figure 2.3.3-1: Outlet Channel

Figure 2.3.4-1: Transformer and Project Interconnection

2.4 Estimated Project Cost

The Licensees do not have any records of the original Project construction costs.

2.5 Summary of Licensee-Proposed Environmental Measures

Applicant proposed environmental measures include the following:

- Continue to operate the Project in a run-of-river mode
- Continue to operate the French Landing Park and French Landing Park Portage Trail recreation sites
- Enhance the portage trail and put-in stairs
- Develop and implement an (1) *Operations Compliance and Monitoring Plan*, (2) *Invasive Species Management Plan*, and (3) *Recreation Management Plan* in consultation with the Michigan Department of Natural Resources (MDNR)

2.6 Estimated Capital Cost and Annual Operation and Maintenance Cost of Proposed Environment Measures

Proposed Environmental Measure	Estimated Capital Cost	Annual Operations and Maintenance Cost
Continue run-of-river operation	$0	$0
Continue to operate and maintain French Landing Park	$0	$5,000
Enhance the portage trail and put-in stairs	$50,000	NA[1]
Develop *Operations Compliance and Monitoring Plan*	$30,000	$5,000
Develop *Invasive Species Management Plan*	$20,000	$1,000
Develop *Recreation Management Plan*	$30,000	$1,000
Total	**$130,000**	**$12,000**

[1]Portage trail operation and maintenance cost is covered in the continued operation and maintenance of French Landing Park

2.7 Project Purpose

Power from the Project is sold into the power grid. The Project provides valuable socioeconomic and recreational benefits for the region, and the estimated 6,919 MWh of average annual renewable

power generation (based on the period 2011-2024) from the Project helps offset reliance on non-renewable fossil fuel sources.

2.8 Project Licensing Costs

The estimated cost to develop the license application is approximately $442,000 in 2025 dollars.

2.9 Peak and Off-Peak Power Values

Not applicable; the Project is operated in a run-of-river mode.

2.10 Change in Project Generation

The Licensees are currently not proposing any changes to Project operations at this time, thus there is no change in Project generation.

2.11 Project Value

The net book value of the French Landing assets as of 12/31/2024 is $2,132,000.

2.12 Annual Operation and Maintenance Costs

The average annual operations and maintenance costs, capital costs and administrative and insurance costs in 2025 dollars are shown in Table 2.12-1.

Table 2.12-1. Existing Annual Project Costs

Cost Measure	2024 Cost
Annual Capital Cost	$114,490
Annual Insurance and Administrative Costs	$20,968
Annual Operation and Maintenance Costs	$231,130
Total	**$366,588**

2.13 Single Line Electrical Diagram

A single line electrical diagram is included in Exhibit H.

2.14 Safe Management, Operation and Maintenance of the Project

The Licensees have safely operated, maintained, and managed the Project. These same practices will continue under the subsequent license, subject to any new terms and conditions contained therein.

3 REFERENCES

Federal Energy Regulatory Commission (FERC). 1987. Order Issuing License (Major) – Project No. 9951-000. May 1987.

EXHIBIT E
ENVIRONMENTAL REPORT

April 2025

FRENCH LANDING HYDROELECTRIC PROJECT
(FERC NO. 9951)

APPLICATION FOR NEW LICENSE
FOR MAJOR PROJECT LESS THAN 10 MW – EXISTING DAM

EXHIBIT E
ENVIRONMENTAL REPORT

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LIST OF ABBREVIATIONS AND DEFINITIONS

°C	degrees Celsius
°F	degrees Fahrenheit
ACS	American Community Survey
ADA	Americans with Disabilities Act
ANS	Aquatic Nuisance Species
APE	Area of potential effect
BCC	Birds of Conservation Concern
BCR	Bird Conservation Regions
BLA	Belleville Lake Shoreline District A
BLB	Belleville Lake Shoreline District B
CDBG	Community Development Block Grant
cfs	cubic feet per second
CISMA	Cooperative Invasive Species Management Area
Cm	centimeter
Commission	Federal Energy Regulatory Commission
CWA	Clean Water Act
DO	dissolved oxygen
DLA	Draft License Application
EA	Environmental Assessment
EGLE	Michigan Department of Environment, Great Lakes and Energy
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FLA	Final License Application
FPA	Federal Power Act
FQI	Floristic quality index
ft	feet
ft/s	feet per second
GLO	General Land Office
HRWC	Huron River Watershed Council
HUC	Hydrologic Unit Code
IPaC	Information for Planning and Consulting
ISR	Initial Study Report
LWCF	Land and Water Conservation Fund

m	meter
MDNR	Michigan Department of Natural Resources
MGD	million gallons per day
mg/L	milligrams per liter
MI	Michigan
mi^2	square miles
MISIN	Midwest Invasive Species Information Network
mm	millimeters
MS4	Municipal Separate Storm Sewer Systems
NARS	National Aquatic Resources Survey
National Registry	National Register of Historic Places
NAWMP	North American Waterfowl Management Plan
NEPA	National Environmental Policy Act
NID	National Inventory of Dams
NLCD	National Land Cover Database
NPDES	National Pollutant Discharge Elimination System
NPS	U.S. National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRI	Nationwide Rivers Inventory
NWI	National Wetlands Inventory
PEM	Palustrine emergent marsh
PME	Protection, mitigation, and enhancement
ppm	parts per million
Project	French Landing Hydroelectric Project
RTE	Rare, threatened, or endangered
SAV	Submerged aquatic vegetation
SCORP	Statewide Comprehensive Outdoor Recreation Plan
SD2	Scoping Document 2
SEMCOG	Southeast Michigan Council of Governments
SGCN	Species of Greatest Conservation Need
SHPO	State Historic Preservation Officer
SIR	Supplemental Information Report
STS	STS Hydropower, LLC
TE	Threatened and endangered
TMDL	Total Maximum Daily Loads

TP	Total phosphorus
µg/L	micrograms per liter
UM	University of Michigan
USACE	United States Army Corps of Engineers
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UWM	University of Wisconsin-Milwaukee

FRENCH LANDING HYDROELECTRIC PROJECT (FERC NO. 9951)

APPLICATION FOR NEW LICENSE FOR MAJOR PROJECT LESS THAN 10 MW – EXISTING DAM

EXHIBIT E ENVIRONMENTAL REPORT

1 GENERAL DESCRIPTION OF PROJECT LOCALE

1.1 Huron River Watershed

The Huron River Watershed, depicted in Figure 1.1-1, contains approximately 367 miles of streams and drains approximately 900 mi^2 through the counties of Ingham, Livingston, Monroe, Oakland, Washtenaw, and Wayne, Michigan (MI) as it flows to Lake Erie. In the system, there are 24 major tributaries that flow into the mainstem. The French Landing Hydroelectric Project (FERC No. 9951) (the Project) serves as the dividing point between the Lower Huron Watershed and Middle Huron Watershed.

The Huron River is located in southeastern Michigan, flowing approximately 136 miles from Big Lake and the Huron Swamp, northwest of Pontiac in Oakland County and discharging into the northwest corner of Lake Erie. The mainstem traverses a series of wetland complexes, interconnected lakes, and several large kettle lakes. Over the course of its 136-mile length, the river drops in elevation approximately 446 feet, from its elevation of 1,018 feet at its start, to its elevation of 572 feet at discharge into Lake Erie (MDNR, 1995).[1]

There are 19 major mainstem dams along the Huron River (MDNR, 1995). While most of these dams were originally constructed for hydroelectric power, only 4 currently generate hydroelectric power and have Federal Energy Regulatory Commission (FERC or the Commission) licenses or exemptions (FERC, 2024). The Project is the most downstream hydroelectric dam on the river, located approximately 22 miles downstream of Ann Arbor, MI, and 26 miles upstream of the Huron River's confluence with Lake Erie. The nearest upstream hydroelectric dam to the Project is the FERC licensed Ford Lake Dam (FERC No. 5334), which is 11 miles upstream and is owned by the City of Ypsilanti. Superior Dam (FERC No. 3152) operates under a FERC exemption and is the third hydropower dam on the river, lying approximately 16 miles upstream from the Project. The last hydroelectric dam on the river, Barton Dam (FERC No. 3142), is approximately 26 miles upstream of the Project and also operates under an exemption. Both the Barton Dam and Superior

[1] Unless otherwise noted, all elevations referenced in this exhibit refer to the National Geodetic Vertical Datum of 1929 (NGVD29), U.S. feet.

Dam are owned by the City of Ann Arbor. All current hydroelectric projects along the Huron River are operated as run-of-river with outflow required to equal inflow.

The Project is located in Van Buren Charter Township and the City of Belleville, Wayne County, Michigan. The current Project boundary generally follows elevation (El.) 655.0 feet throughout Belleville Lake except in the vicinity of the dam, powerhouse, and French Landing Park. As discussed in Exhibit G, STS Hydropower, LLC (STS) and the Township of Van Buren, MI (collectively, the Licensees) are proposing several modifications to the Project boundary as part of this license application. The proposed modifications include, among other things, following El. 652.0 around the impoundment, which corresponds to the spillway crest elevation. From the dam, the boundary extends approximately 7 miles upstream to where the Huron River narrows, which is located approximately 1 mile downstream of the Ford Lake Hydroelectric Project. The full pond elevation of the impoundment, known as Belleville Lake, is 1,270 acres at elevation 651.5 feet. The drainage area of the Project is approximately 841 square miles (mi^2). Figure 1.1-2 depicts the proposed Project boundary.

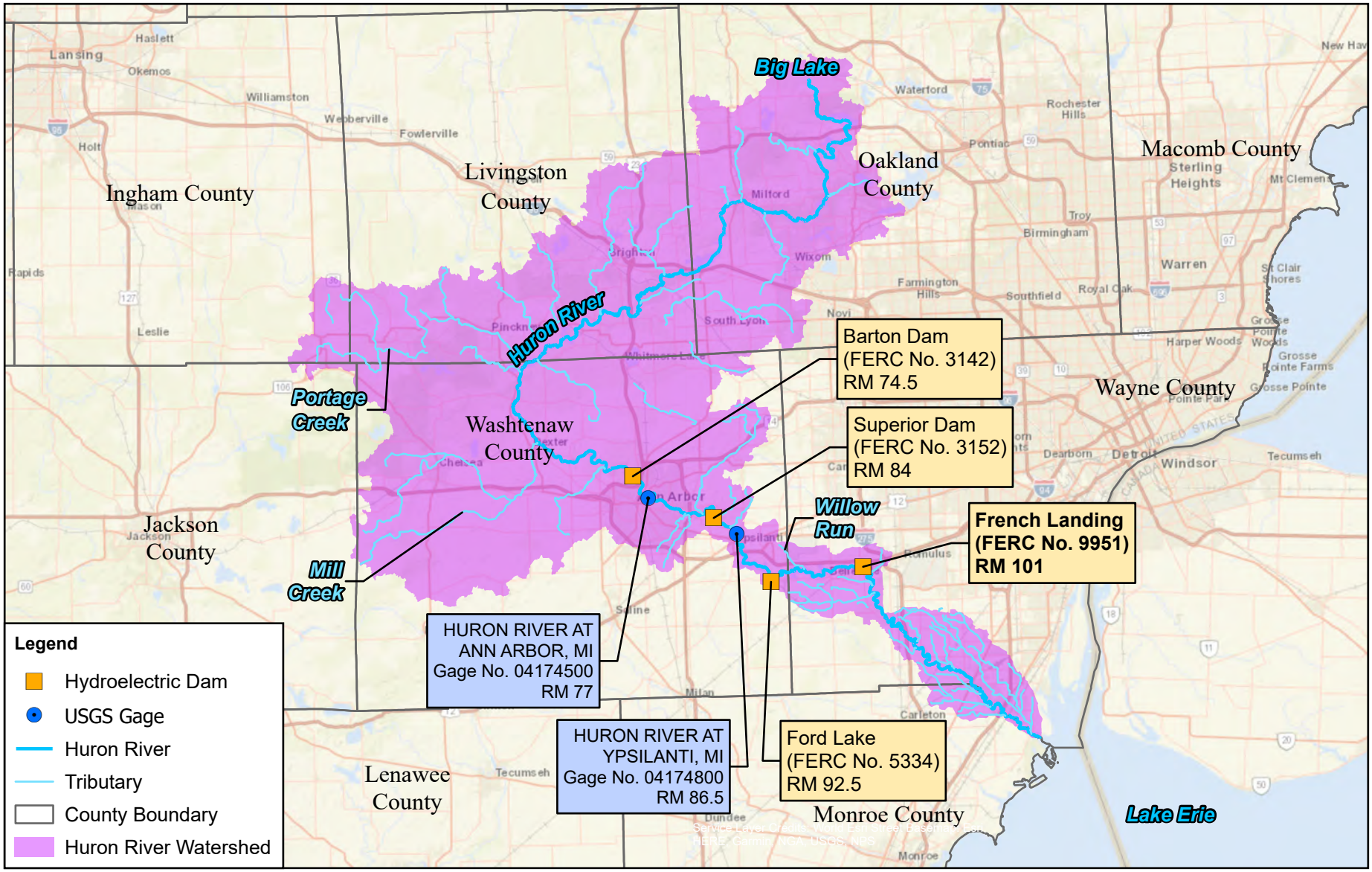

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Figure 1.1-1:
Huron River Watershed

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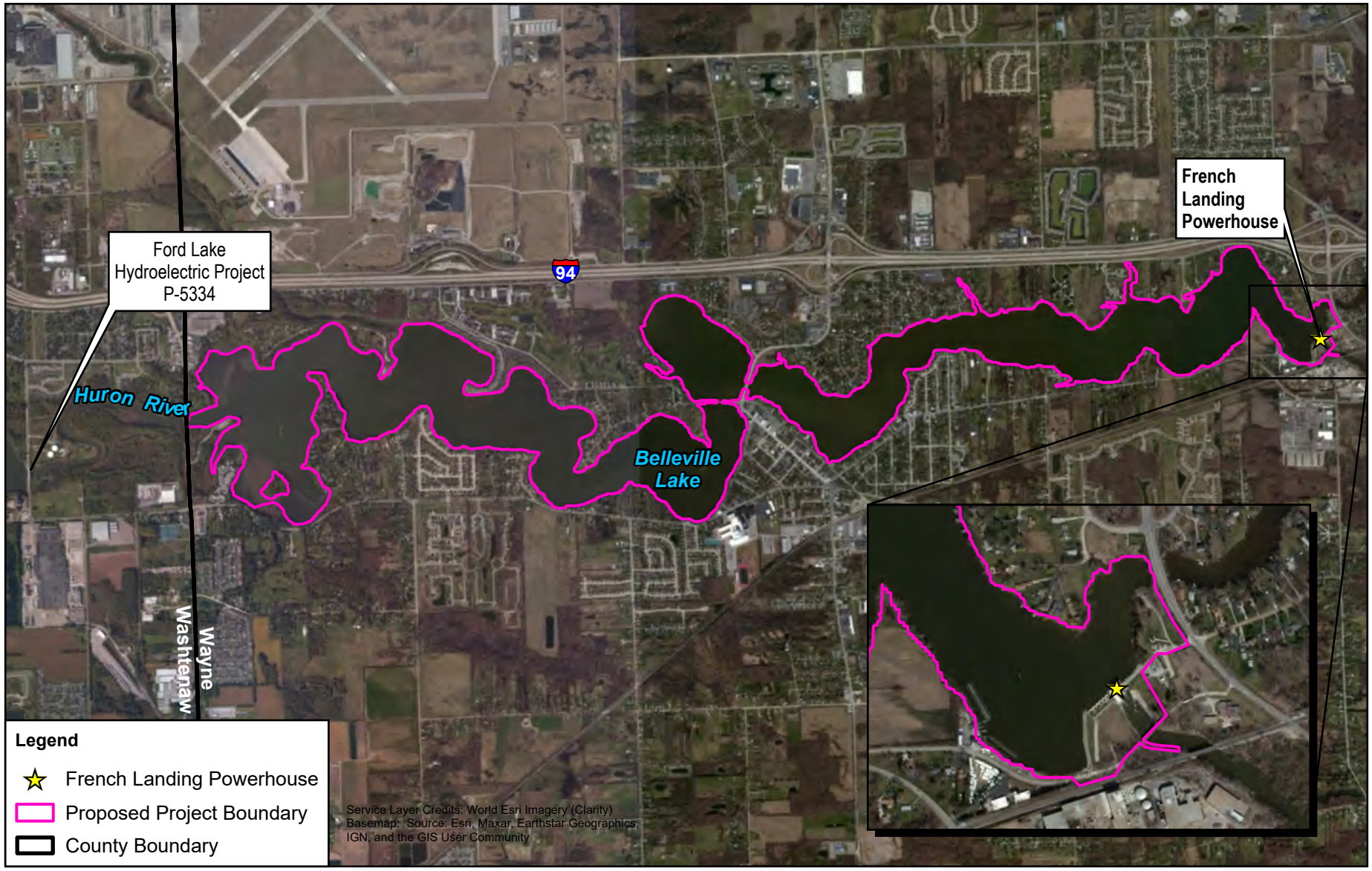

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N

0 2,000 4,000 8,000 Feet

Figure 1.1-2:
Project Boundary

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1.2 **Topography**

The Project is located within the Eastern Lake section of the Central Lowland physiographic province. The Central Lowland section encompasses the majority of the Great Lakes, stretching from central Texas to New York and north into Canada to the province of Saskatchewan. This section is relatively level, rising roughly 1,000 feet above sea level in the east, to less than 2,000 feet in the west. Topography in the Great Lakes section of the Central Lowlands are the result of repeated glacial scouring.

The surface topography of the Huron River watershed was determined by the last continental glacial period, the Wisconsin. The watershed is mostly a region of end, or recessional, moraines with associated till plains and outwash deposits. Lake Maumee, a glacial precursor to Lake Erie, once covered the lower Huron River watershed, and was 230-240 feet higher than current Lake Erie levels. Approximately 13,000 to 14,000 years ago, Lake Maumee alternately found an outlet southwest near Fort Wayne, Indiana and north near Imlay City, Michigan. During that time, the waters of the Huron River flowed west across the Lower Peninsula to what would become Lake Michigan and from there into the early Illinois and Mississippi River systems. The current Huron River narrows below Belleville Lake, dropping further toward Lake Erie (ADW, 2012).

Topography in the immediate vicinity of the Project is relatively flat, with the exception of the steep shoreline of the Huron River. The general topography in the Project area is depicted in Figure 1.2-1.

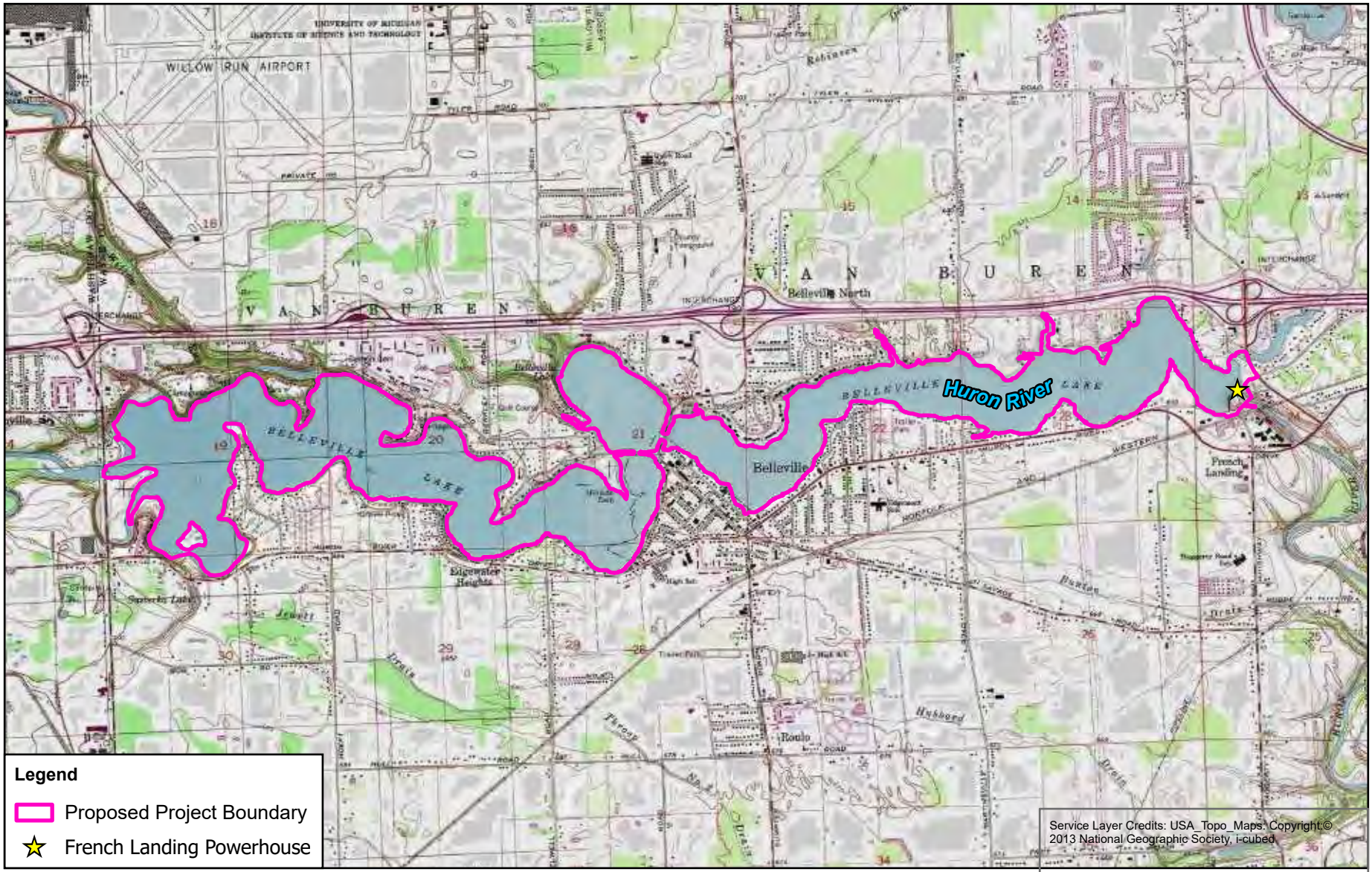

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Figure 1.2-1:
Topography in the Project Vicinity

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1.3 Climate

Huron River basin has a climate which can be described as a continental climate experiencing very hot summers and very cold winters (MDNR 2002). At Ann Arbor, MI, average daily temperatures in July range from a maximum of 84°F to a minimum of 62°F. Average daily temperatures in January range from a maximum of 32°F to a minimum of 18°F. The watershed lies in a drier portion of Michigan, with an average yearly precipitation of 38 inches (NOAA, 2022). The northern portion of the river basin experiences more stable precipitation patterns than the south due to its warmer temperatures that hold more moisture in the air. In addition, as southern Michigan thaws and re-freezes regularly throughout the winter months, the Huron River does not experience as much variability when compared to more northern rivers in the state with its low and high flows (MDNR, 1995). Evaporation is higher in the Huron River watershed due to higher temperatures and drier air, which give the area the lowest amounts of total annual runoff in the State of Michigan.

1.4 Major Land Uses

The Huron River watershed has a mix of agricultural, wooded undeveloped land, and lightly developed land. Based on available land use data, the most prominent land use types within the watershed are deciduous forest (18%), woody wetlands (17%), developed open space (14%), cultivated crops (14%), and low intensity developed (11%). The remaining 26% of land is made up of various land uses such as pasture/hay, medium intensity developed, and open water (Dewitz, 2021). Table 1.4-1 provides a detailed breakdown of various land use classifications throughout the Huron River watershed.

The northern portion of the Huron River watershed is a mix forested land and developed land, with the majority of the developed land residing in Oakland County. The central and western portions of the watershed hold large areas of cultivated crop land, with areas of developed land centered around the City of Ann Arbor in Washtenaw County. The watershed narrows considerably as it enters Wayne County where the land use becomes a mix of both developed land and cultivated crops. Throughout the entirety of the watershed are woody wetlands, though they are most prevalent in the northwest section of its boundary. The land use within the watershed is depicted in Figure 1.4-1. Additional information pertaining to land use near the Project is discussed in Section 7.

Within 1,000 feet of the Project boundary the land use is dominated by developed use of varying levels of intensity. The eastern portion of Belleville Lake is predominantly open space lightly developed land. In the middle section and western basin of the lake are medium developed residential lands, including several condominium developments with commercial developments on the northern shore. The extreme western portion of the lake and the upstream end of the impoundment are open space land with parks and a boat launch. Land use statistics in the vicinity of the Project and their depiction can be found in Table 1.4-2 and Figure 1.4-2 respectively.

Table 1.4-1: Huron River Watershed Land Use

Land Use Classification	Area (acres)	Total (%)
Deciduous Forest	107,016	18%
Woody Wetlands	101,805	17%
Developed, Open Space	84,442	14%
Cultivated Crops	80.110	14%
Developed, Low Intensity	64,979	11%
Pasture/Hay	46,725	8%
Developed, Medium Intensity	36,679	6%
Open Water	24,564	4%
Developed High Intensity	14,085	2%
Mixed Forest	10,106	2%
Emergent Herbaceous Wetlands	7,524	1%
Grassland/Herbaceous	3,413	1%
Evergreen Forest	2,852	<1%
Barren Land (Rock/Sand/Clay)	2,496	<1%
Shrub/Scrub	829	<1%

(Dewitz, 2021)

Table 1.4-2: Upland Land Use Near the Project Boundary

Land Use Classification	Area (acres)	Total (%)
Developed, Low Intensity	609	29%
Developed, Medium Intensity	522	25%
Developed, Open Space	473	22%
Developed High Intensity	188	9%
Deciduous Forest	118	6%
Emergent Herbaceous Wetlands	49	2%
Woody Wetlands	48	2%
Cultivated Crops	45	2%
Barren Land (Rock/Sand/Clay)	21	1%
Grassland/Herbaceous	16	1%
Pasture/Hay	11	1%
Mixed Forest	9	<1%
Evergreen Forest	4	<1%

(Dewitz, 2021)

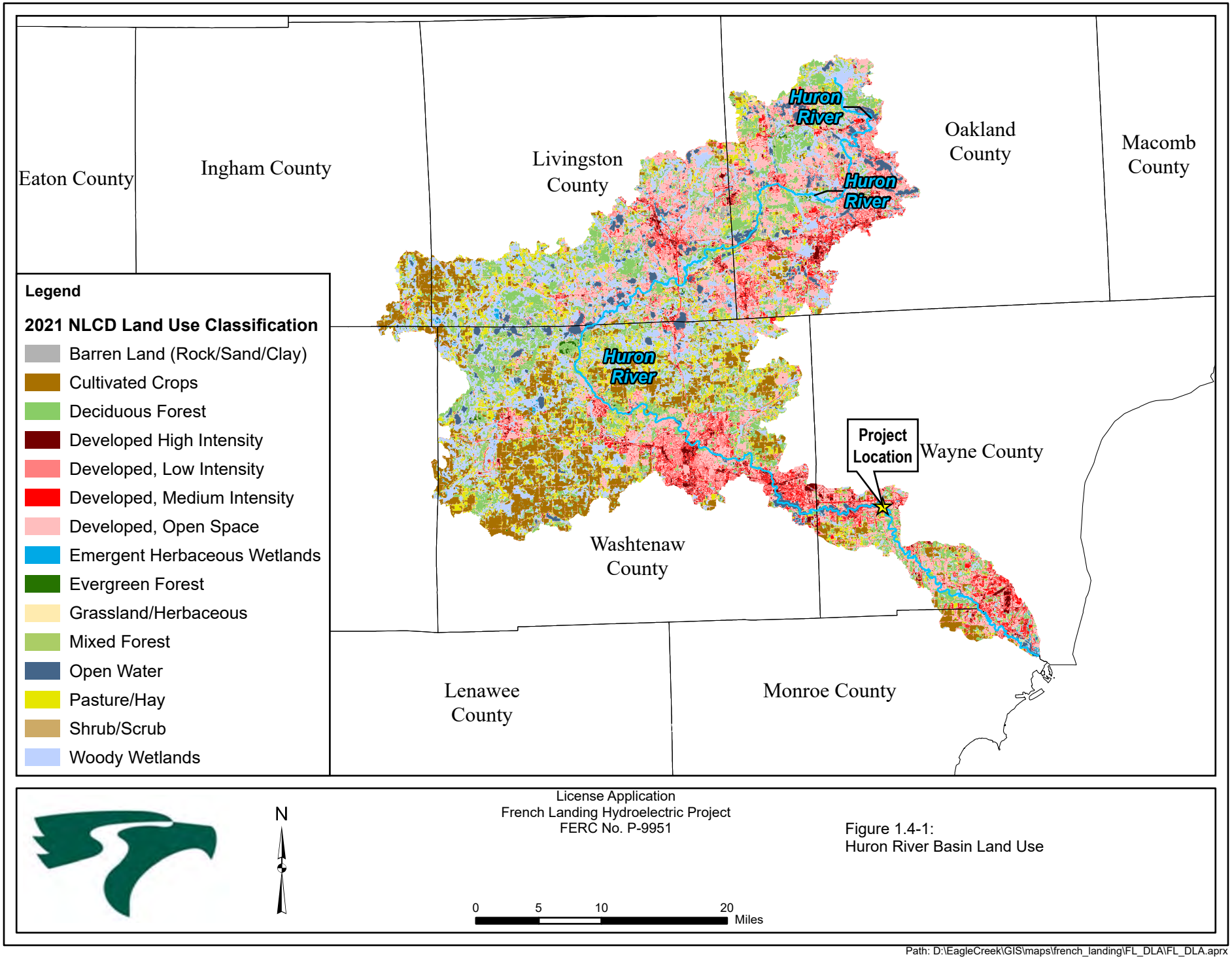

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Figure 1.4-1:
Huron River Basin Land Use

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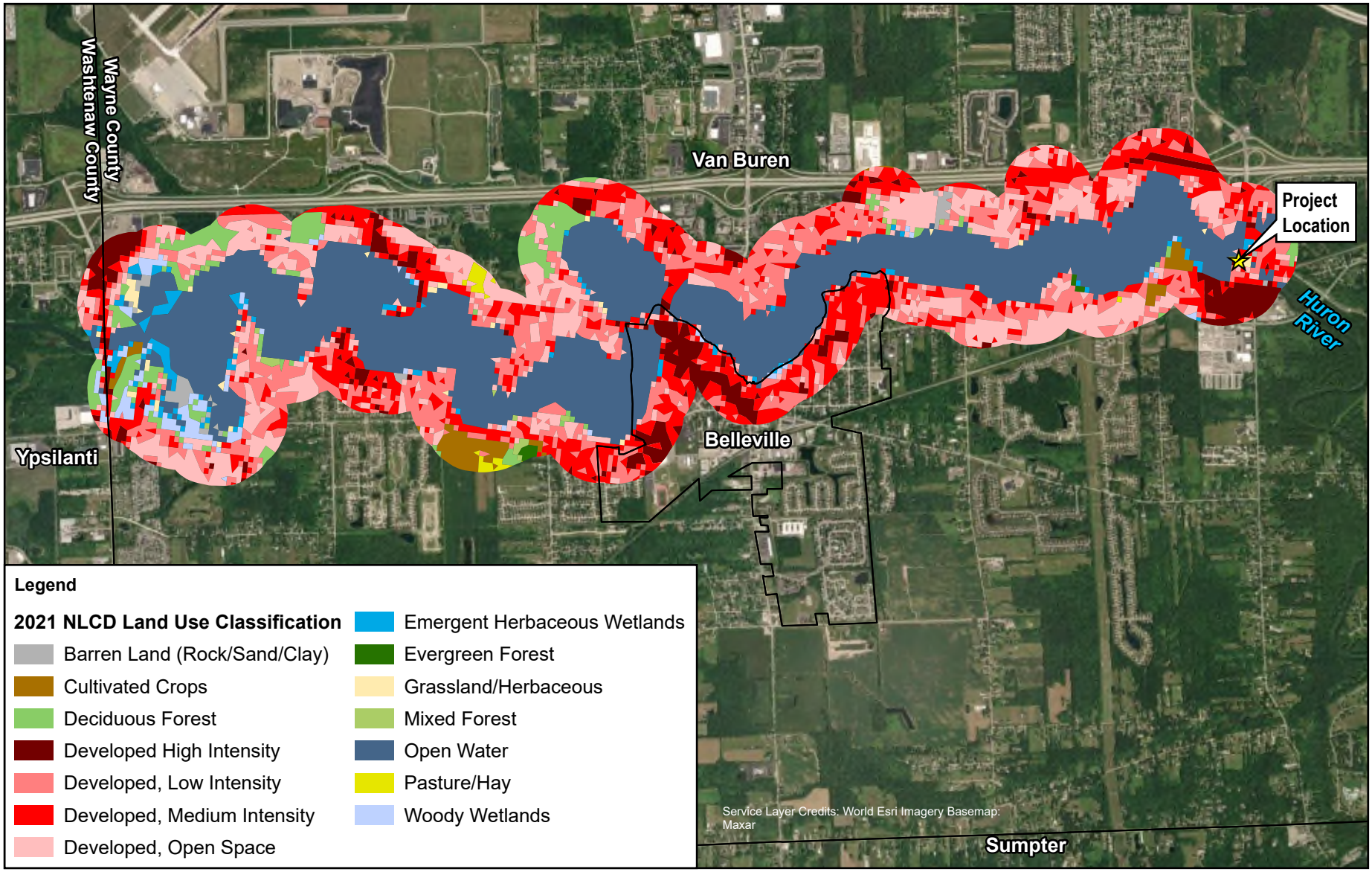

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0 1,750 3,500 7,000 Feet

Figure 1.4-2:
Land-Use within 1,000 ft.
of the Project Boundary

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1.5 Major Water Uses

A 37-mile portion of the Huron River, well upstream of the Project boundary, is the only state designated scenic river in Southeast Michigan and supplies drinking water to approximately 150,000 people (ADW, 2012). In addition to providing drinking water, the river is also heavily fished for various species including rock bass, black crappie, white bass, smallmouth bass, largemouth bass, northern pike, walleye, catfish, trout, and muskie. The river offers numerous recreational opportunities such as canoeing, rowing, motor-boating, wind surfing, sailing, swimming, picnicking, hunting, trapping, hiking, nature study, and bird watching (MDNR, 1995). The majority of the roughly 576,000 acres of the Huron River watershed is privately owned (91%). The public ownership is comprised of state parks (6%), state game areas (2%), and Huron-Clinton Metropolitan Park (1%) (MDNR, 2002).

The mean annual daily flow into the Project for the period 1988 through 2024, based on the proration of the United States Geological Survey (USGS) Gage No. 04174500 Huron River at Ann Arbor, MI, is approximately 632 cubic feet per second (cfs). The peak daily average streamflow at the Project during this period was approximately 3,772 cfs, which occurred on May 27, 2011. The minimum daily average streamflow at the Project during this period was approximately 21 cfs, which occurred on July 8, 1988 (USGS, 2024). The USGS gage location is depicted in Figure 1.1-1.

Additional information on water uses, including water withdrawals and water quality can be found in Section 3.1.1 and Section 3.1.2.

1.6 Basin Dams

There are two (2) FERC licensed hydroelectric projects and two (2) FERC exempted hydroelectric projects on the mainstem of the Huron River. In order from downstream to upstream they are the French Landing Dam (FERC license), Ford Lake Dam (FERC license), Superior Dam (FERC exemption), and Barton Dam (FERC exemption). In 1987, the United States Army Corps of Engineers (USACE) began compiling the National Inventory of Dams (NID) in cooperation with the Federal Emergency Management Agency's (FEMA) National Dam Safety Program. The NID documents dams that are at least 25 feet in height or impound at least 50 acre-feet of water at maximum pool level. According to the NID, the Huron River Basin contains over 50 dams (USACE, 2024).

The Michigan Department of Environment, Great Lakes and Energy (EGLE) maintains a list of dams in Michigan regulated by Part 307, Inland Lake Levels, and Part 315, Dam Safety, of The Natural Resources and Environmental Protection Act, 1194 PA 451, as amended. The majority of dams in the Huron River basin are regulated by Part 315, which includes dams over 6 feet in height that impound over 5 acres during the design flood. Based on EGLE records, there are 100 dams in the river basin. This includes 16 non-hydroelectric dams which are located on the Huron River mainstem. Of these dams, five (5) are retired hydro facilities and seven (7) are for recreation

purposes. Dams along the Huron River mainstem are depicted in Figure 1.6-1. A listing of dams with their purposes is shown in Table 1.6-1.

Table 1.6-1: Dams on the Mainstem of the Huron River (downstream to upstream)

NID ID	Dam Name	Owner Name	Purpose
MI00556	Flat Rock Dam	Huron-Clinton Metro Authority	Retired Hydro
MI01887	Lower Pond Dam[1]	Huron-Clinton Metro Authority	Recreation
MI00557	French Landing Dam (FERC No. 9951)	Van Buren Charter Township	Hydropower
MI00194	Ford Lake Dam (FERC No. 5334)	Charter Township of Ypsilanti	Hydropower
MI00500	Peninsular Paper Dam	City of Ypsilanti	Retired Hydro
MI00558	Superior Dam (FERC No. 3152)	City of Ann Arbor	Hydropower
MI00561	Geddes Dam	City of Ann Arbor	Retired Hydro
MI00559	Argo Dam	City of Ann Arbor	Retired Hydro
MI00560	Barton Dam (FERC No. 3142)	City of Ann Arbor	Hydropower
MI00008	Flook Dam	Washtenaw County WRC	Other
MI00011	Kent Lake Dam	Huron-Clinton Metro Authority	Recreation
MI00248	Ford Dam #3 (Hubbell Pond)	Village of Milford	Retired Hydro
MI02120	Proud Lake Dam	MDNR Parks & Recreation	Recreation
MI00242	Commerce Dam	Oakland County Drain Commissioner	Other
MI02001	Fox Lake Dam	Oakland County Drain Commissioner	Other
MI01665	Cedar Island Dam	Oakland County Drain Commissioner	Recreation
MI00263	Oxbow Dam	Oakland County Drain Commissioner	Recreation
MI01717	Tull Lake Dam	Kelly Bros. Land Development Inc.	Recreation
MI00265	Pontiac Lake Dam	Oakland County WRC	Other
MI01999	Big Lake Dam	Oakland County Drain Commissioner	Recreation

[1]On the EGLE Michigan Dam Inventory, Lower Pond Dam is listed on the Huron River, however, the dam appears to impound a tributary to the river and not the Huron River itself.

Source: (FERC 2024, EGLE 2022)

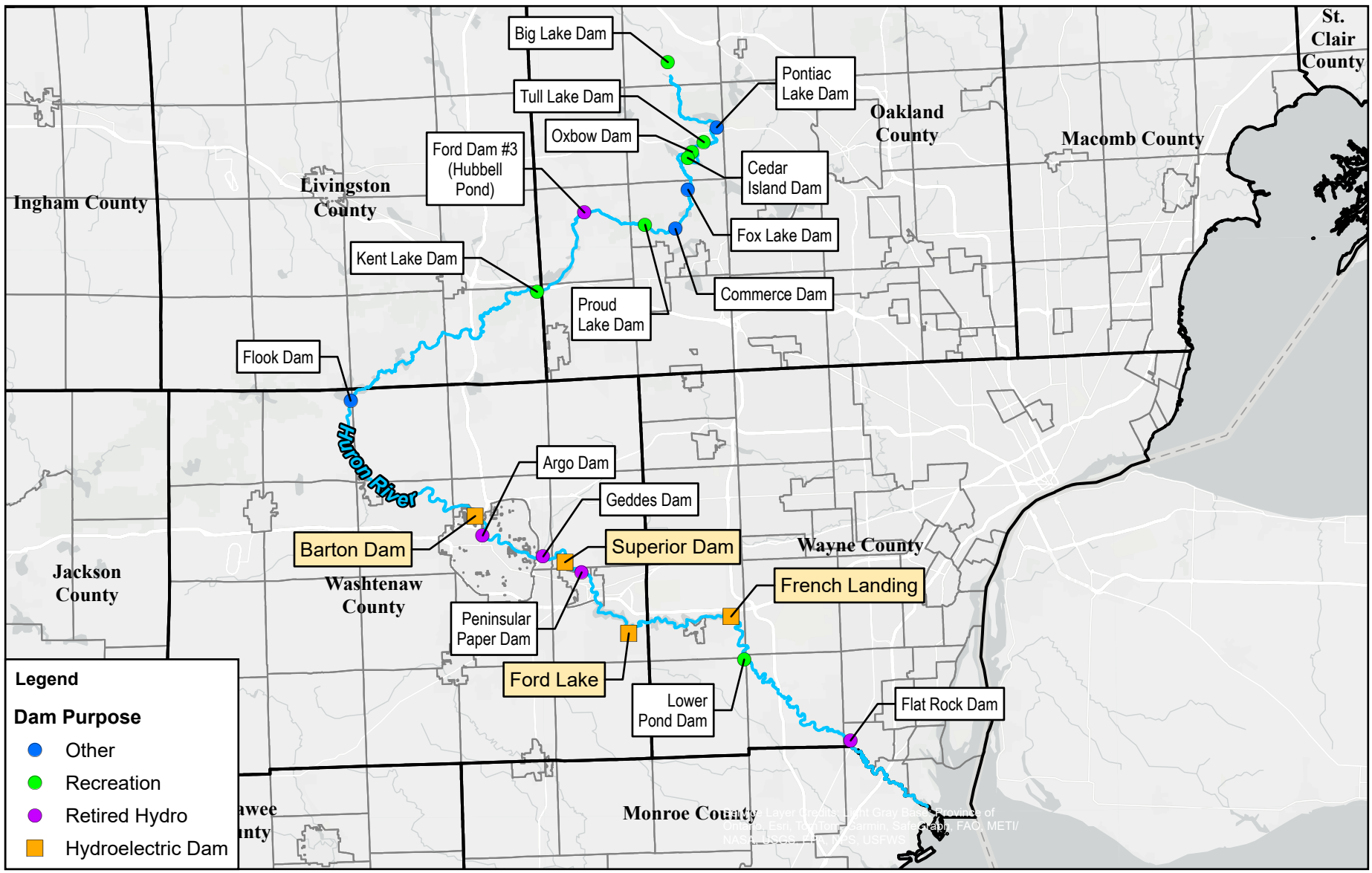

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Figure 1.6-1:
Mainstem Hydroelectric Projects
and Dams Along the Huron River

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1.7 **Tributary Streams**

Approximately 24 major tributaries flow into the Huron River mainstem (MDNR, 1995). Figure 1.1-1 presents a map of the Huron River and its main tributaries. Above Portage Lake the majority of streams joining the river are small. Portage Creek and Mill Creek are two large creeksheds that join the Huron River (MDNR, 1995). As the river basin narrows from Ann Arbor to Lake Erie there are a few small tributaries. The only major tributary that enters the Huron River in this portion of the watershed is Willow Run, which enters approximately 5.5 river miles upstream of the French Landing Dam.

1.8 References

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2 GEOLOGY AND SOILS

2.1 Affected Environment

2.1.1 Bedrock Geology

The bedrock geology in the Project vicinity consists of Antrim Shale and Traverse Group (MDNR, 1987). The geologic age of the Antrim Shale formation ranges from 395 to 385 million years ago (Middle Devonian). The Antrim Shale is a major source of shale gas. The formation is dark gray or brown to largely black, highly carbonaceous, thinly laminated shale with meager fossil content except for profuse algal spores. Large dark brown, bituminous and pyritic limestone concretions occur in the lower Antrim and are typically from 9.6 to 1.5 meter (m) in diameter. The major lithologic constituents for Antrim Shale is black shale, limestone is an incidental constituent (USGS, 2022a).

The Traverse Group formation age spans the Late Devonian Period, from 385 to 359 million years ago. The formation consists of a series of thick-bedded magnesian buffish granular limestones underlying the Huron group and overlying the Corniferous group in the Lower Peninsula of MI. Major lithologic constituents of the Traverse Group are shale and limestone (USGS, 2022b). The bedrock geology in the vicinity of the Project is shown in Figure 2.1.1-1.

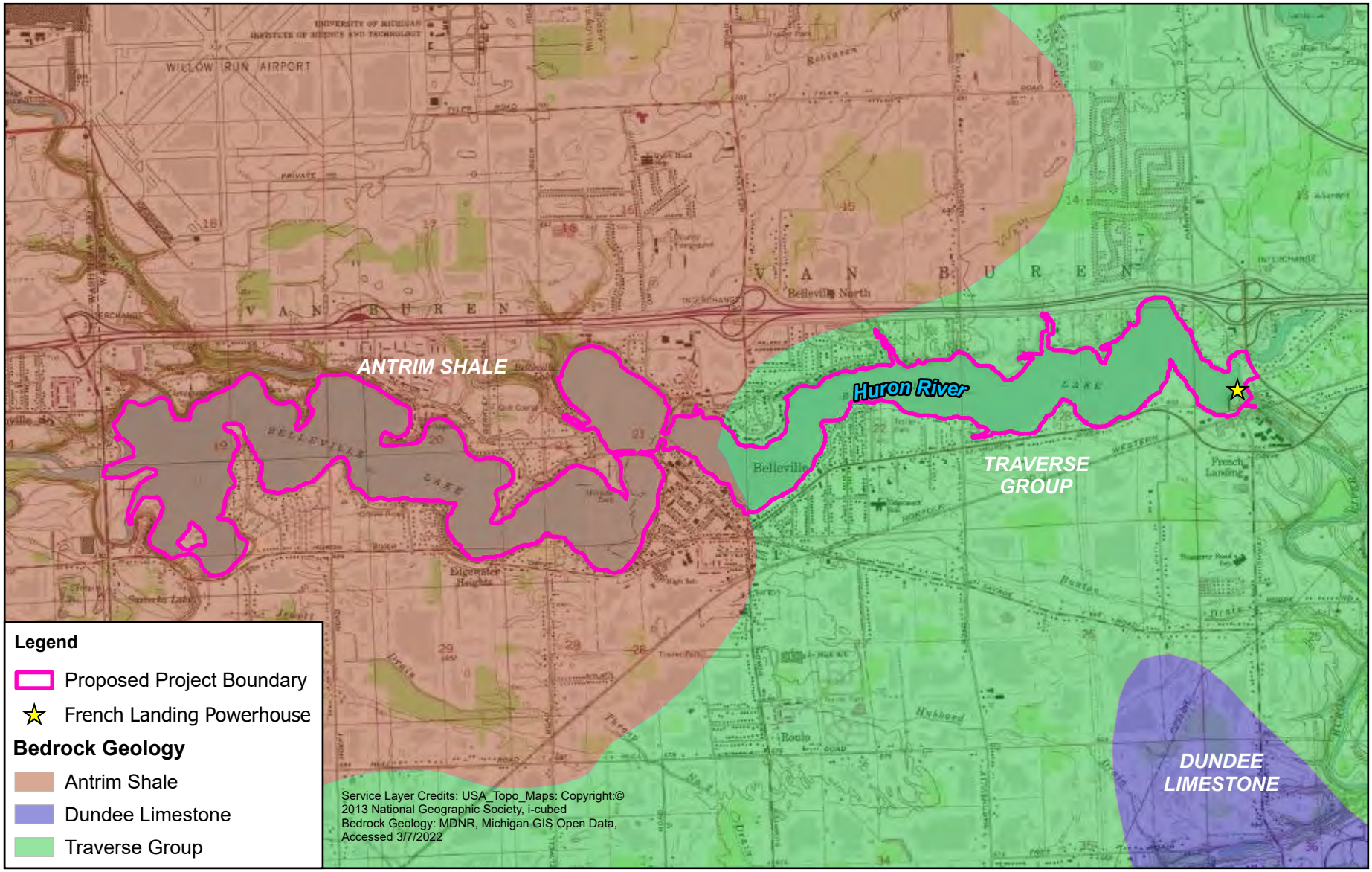

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Figure 2.1.1-1:
Bedrock Geology in the Project Vicinity

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2.1.2 **Surficial Geology**

The surficial characteristics observed in the immediate Project area are Lacustrine sand and gravel, and Lacustrine clay and silt (Farrand, 1982). Lacustrine deposits are sedimentary rock formations formed in the bottom of ancient lakes. Areas within the Project boundary are almost completely sand and gravel, while land adjacent to the impoundment are predominantly clay and silt. Surficial geology in the Project vicinity is shown in Figure 2.1.2-1.

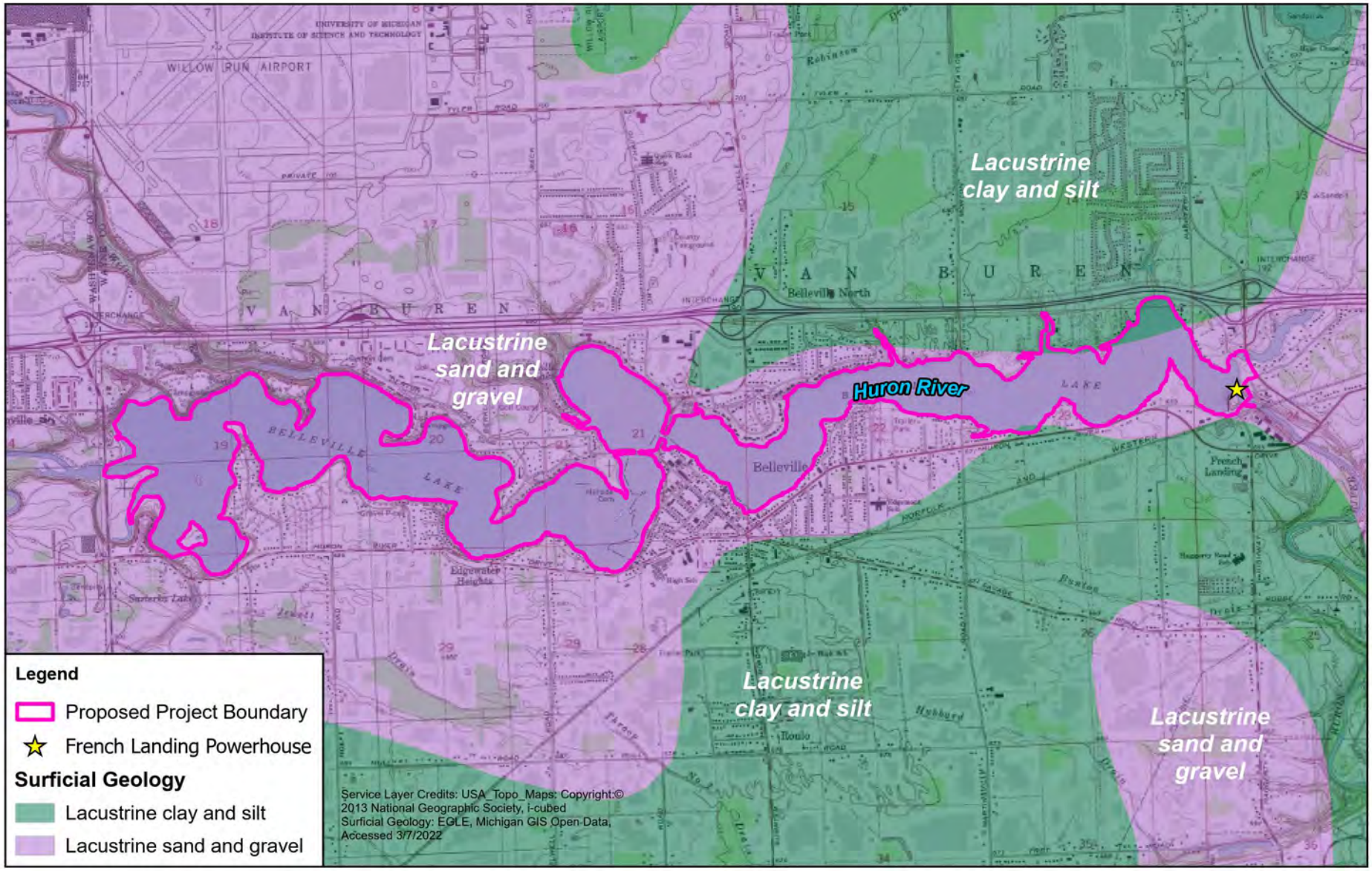

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Figure 2.1.2-1:
Surficial Geology in the Project Vicinity

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2.1.3 **Soils**

Boyer loamy sand, 1 to 6 percent slopes, is the most dominant soil type found within 1,000 feet of the Project boundary (34%). Other prominent soil types (accounting for at least 5% of the Project vicinity) include Wasepi sandy loam, Metamora sandy loam, Blount loam, Erie-Huron Lake Plain, Spinks loamy sand, Gilford sandy loam, till plain, and Oakville fine sand. Collectively these soils make up 81% of area within 1,000 feet of the Project boundary. There are 17 other soil types, mostly sandy and silty loams, that make up the remaining 19% of Project vicinity soil types. Table 2.1.3-1 breaks down the soil types and their acreage in the Project vicinity, while Figure 2.1.3-1 depicts spatial coverage. Detailed descriptions of the prominent soil types are:

Boyer: The Boyer series consists of very deep, well drained soils formed in sandy and loamy drift underlain by sand or gravelly sand outwash at depths of 51 to 102 centimeters (cm) (20 to 40 inches). The soils are on outwash plains, valley trains, kames, beach ridges, river terraces, lake terraces, deltas, and moraines. Slope ranges from 0 to 50 percent. Mean annual precipitation is about 864 millimeters (mm) (34 inches), and mean annual temperature is about 9.4 ºC (49 ºF) (NRCS 2022).

Wasepi: The Wasepi series consists of very deep, somewhat poorly drained soils formed in loamy and sandy glaciofluvial deposits underlain by sand and gravel at 51 to 102 cm (20 to 40 inches). Wasepi soils are on outwash plains, deltas, valley trains, glacial drainageways, and lake plains. Slope ranges from 0 to 6 percent. Mean annual precipitation is about 838 mm (33 inches), and mean annual temperature is about 9.4 ºC (49 ºF) (NRCS 2022).

Metamora: The Metamora series consists of very deep, somewhat poorly drained soils formed in loamy glaciofluvial or lacustrine deposits and the underlying loamy till on lake plains, near-shore zones (relict), till plains, and low moraines. Slope ranges from 0 to 6 percent. Mean annual precipitation is about 813 mm (32 inches), and mean annual temperature is about 8.9 ºC (48 ºF) (NRCS 2022).

Blount: The Blount series consists of very deep, somewhat poorly drained soils that are moderately deep or deep to dense till. Blount soils formed in till and are on wave-worked till plains, till plains, and near-shore zones (relict). Slope ranges from 0 to 6 percent. Mean annual precipitation is about 890 mm (35 inches), and mean annual temperature is about 10.6 ºC (51 ºF) (NRCS 2022).

Spinks: The Spinks series consists of very deep, well drained soils formed in sandy eolian or outwash material. They are on dunes, moraines, till plains, outwash plains, beach ridges, and lake plains. Slope ranges from 0 to 70 percent. Mean annual precipitation is about 838 mm (33 inches), and mean annual temperature is about 9.4 ºC (49 ºF) (NRCS 2022).

Gilford: The Gilford series consists of very deep, poorly drained or very poorly drained soils formed in loamy over sandy sediments on outwash plains, glacial drainage channels, near-shore zones (relict), and flood-plain steps. Slope ranges from 0 to 2 percent. Mean annual precipitation is about 988 mm (39 inches), and mean annual temperature is about 9.7 ºC (50 ºF) (NRCS 2022).

Oakville: The Oakville series consists of very deep, excessively drained soils formed in sandy eolian deposits on dunes and beach ridges on outwash plains, lake plains, and moraines. Slope ranges from 0 to 60 percent. Mean annual precipitation is about 864 mm (34 inches), and mean annual temperature is about 10.0 ºC (50 ºF) (NRCS 2022).

Soil Erodibility

Erosion factors for the prominent soil types found in the area analyzed were obtained from the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS, 2022). The erosion factor, or K factor, indicates the susceptibility of a soil to sheet and rill erosion by water and is one of six factors used in the Universal Soil Loss Equation and the Revised Universal Soil Loss Equation to predict the average annual rate of soil loss. K factor values range from 0.02 to 0.32, with the higher the K factor value typically indicating a higher susceptibility to sheet and rill erosion by water (NRCS, 2022). Table 2.1.3-2 shows the K factor for the fine-earth fraction (also referred to as the Kf factor) of the prominent soils found in the vicinity of the Project. As shown in the table, these soils are characterized as having low to moderate erodibility. The Boyer series, the most common soil type found in the Project Area, was found to have the second lowest erodibility, while the Blount series was found to have moderate erodibility.

Table 2.1.3-1: Soil Units in the Project Vicinity

Soil Unit	Soil Description	Acreage	Percentage
BnB	Boyer loamy sand, 1 to 6 percent slopes	713	34%
WdA	Wasepi sandy loam, 0 to 4 percent slopes	286	14%
MeA	Metamora sandy loam, 0 to 3 percent slopes	178	9%
BfA	Blount loam, Erie-Huron Lake Plain, 0 to 2 percent slopes	168	8%
SpB	Spinks loamy sand, 0 to 6 percent slopes	111	5%
Gf	Gilford sandy loam, till plain, 0 to 2 percent slopes	108	5%
OaB	Oakville fine sand, 0 to 6 percent slopes	103	5%
ThA	Thetford loamy sand, 0 to 2 percent slopes	85	4%
Cu	Cut and fill land	68	3%
OwB	Owosso-Miami complex, 2 to 6 percent slopes	49	2%
KnA	Kibbie fine sandy loam, 0 to 3 percent slopes	41	2%
Co	Corunna fine sandy loam	41	2%
So	Sloan silt loam, wet	25	1%
SeA	Selfridge loamy sand, 0 to 3 percent slopes	21	1%
WaA	Wasepi sandy loam, 0 to 4 percent slopes	16	1%
GnB	Glynwood loam, 2 to 6 percent slopes	15	1%
Pe	Pewamo loam	12	1%
MhB	Metea loamy sand, 2 to 6 percent slopes	10	<1%
Gr	Granby loamy fine sand	5	<1%
Cc	Cohoctah fine sandy loam, frequently flooded	4	<1%
ShB	Shoals silt loam	4	<1%
Pg	Pits, gravel	3	<1%
Ma	Made land	1	<1%
MaA	Macomb loam, 0 to 4 percent slopes	<1	<1%

Table 2.1.3-2: Erodibility of Soils in the Vicinity of the Project

Soil Series	Kf Factor
Boyer	0.05
Wasepi	0.2
Metamora	0.24
Blount	0.32
Spinks	0.15
Gilford	0.15
Oakville	0.02

Source: NRCS, 2022

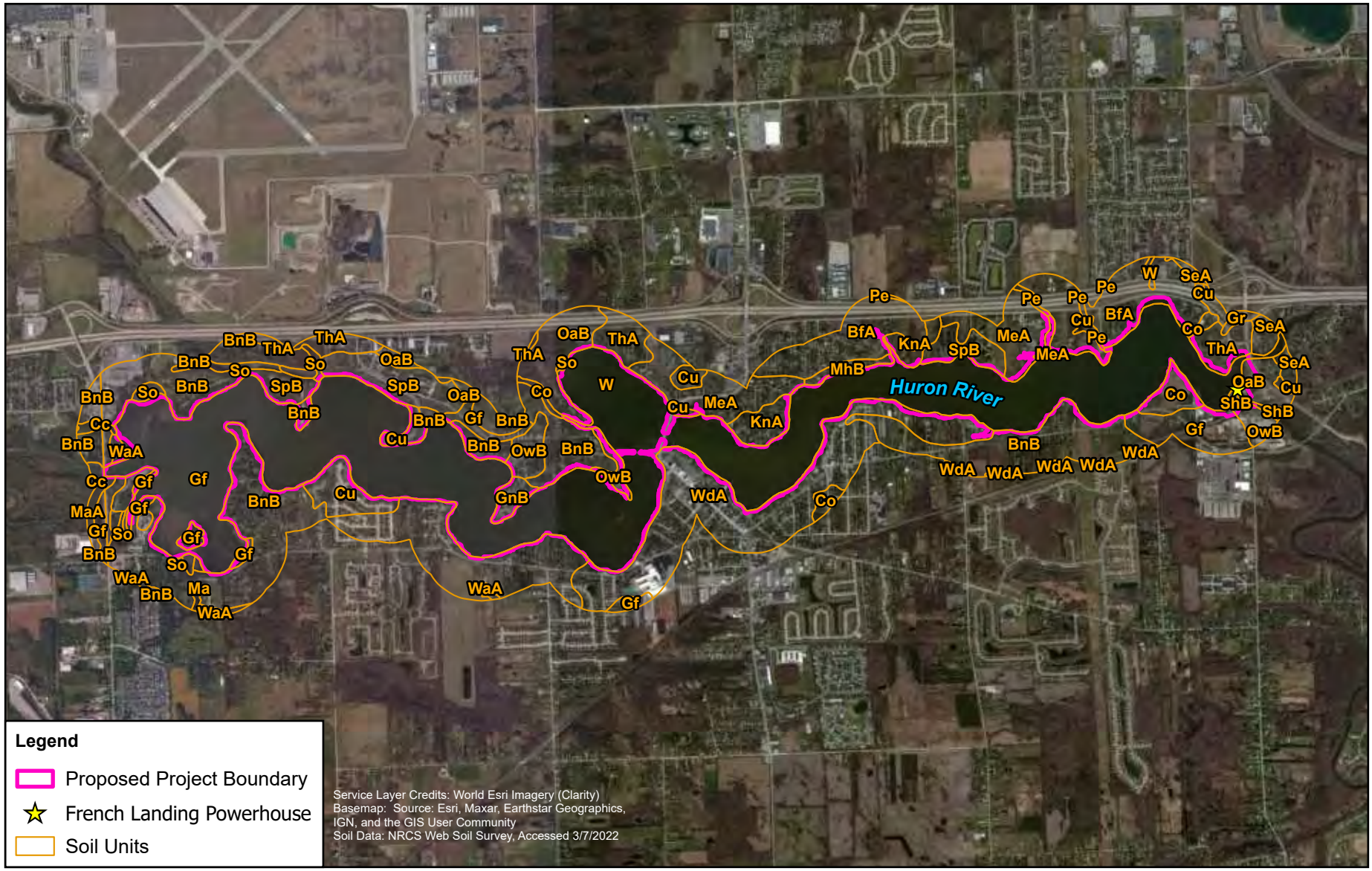

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Figure 2.1.3-1:
Soils in the Project Vicinity

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2.1.4 **Reservoir Shoreline and Streambanks**

The Project impoundment extends approximately 7 miles upstream of the French Landing Dam, and includes approximately 24 miles of mostly steep shoreline. The impoundment, known as Belleville Lake, is divided by Belleville Road into two major basins (east and west). The vast majority of the impoundment is developed, with residential and some commercial land use abutting the shoreline. The shoreline downstream of the dam within the Project boundary is protected by sheet pile wall on the western side, and riprap on the eastern side.

A shoreline habitat survey conducted by Michigan Department of Natural Resources (MDNR) estimated approximately 55% of shoreline in the western basin was armored with a total of 269 submerged trees, or about one tree per 212 feet of shoreline. Throughout this section there were 266 houses and 268 docks of various sizes (Braunscheidel, 2013). The eastern basin of Belleville Lake is more highly developed, with approximately 88% of shoreline armored. The approximately eight (8) miles of shoreline in the basin have 286 houses and 218 docks (Braunscheidel, 2013). The east section had a total of 80 submerged trees, or one tree per 512 feet of shoreline.

Article 402 of the FERC license issued May 5, 1987 required a shoreline erosion control plan be implemented at the Project within one year of license issuance. This plan was to include descriptions of existing shoreline erosion and effectiveness, a topographic map showing locations of shoreline erosion and shoreline erosion protection, description and topographic map locations of any shoreline protective measure or repairs to be implemented during Project construction, and details of a shoreline monitoring and maintenance program. This plan was submitted to FERC on October 3, 1989, with photographic indexing of the entire Belleville Lake shoreline and approved in a FERC order issued on May 27, 1992. In the plan, each shoreline area was classified as to the type of shoreline protection being used or the shoreline condition classified in accordance with specific criteria. The original survey found 60% of the reservoir had some form of shoreline protection, with 37% of the protection being riprap, 29% being sheet pile wall, and 11% being concrete seawall. The study identified 15 areas as having severe or moderate to severe erosion.

A Supplemental Information Report (SIR) was submitted by the Licensees on September 7, 1990 in response to MDNR and FERC comments on the study. The SIR provided in depth focus into the 15 sites identified as severe or moderate to severe in the original study and initiated annual monitoring of several shoreline areas. The SIR further refined shoreline areas with erosion and identified four (4) areas that would be subject to the monitoring program, and seven (7) others that would require annual inspection. Subsequent to the SIR, three separate surveys were conducted in 1990, 1991, and 1992. The surveys found no erosion or regression of the shoreline was detected during the survey period. In addition, two of the four severe erosion sites had since been protected by riprap. As no evidence of erosion had been found, and the majority of the shoreline was protected, the Licensees requested that the annual survey requirement be discontinued.

The soils immediately adjacent to the impoundment shoreline are generally Boyer and Wasepi series, which have low erosion factors (0.05 and 0.2 respectively). The Project is operated as run-of-river and does not significantly raise or lower impoundment water levels. In addition, shoreline

developments (docks, boardwalks, etc.) in both the City of Belleville and Van Buren Charter Township require permits which address potential erosion mitigation.

As discussed above, shoreline immediately downstream of the Project dam is protected by sheet pile wall and riprap. The riverbanks in the downstream reach beyond the Project outlet channel generally consists of clay deposits, small gravel-sand deposits, with small pockets of boulders.

2.2 Environmental Analysis

Scoping Document 2 (SD2) issued by FERC on October 6, 2022 identified effects of continued Project operation and maintenance on geologic and soil resources and shoreline erosion as a potential site-specific resource issue to be addressed in its National Environmental Policy Act (NEPA) analysis. The Licensees propose to continue to operate the Project in its current run-of-river mode under terms of the subsequent license.

Shoreline erosion studies conducted in 1990, 1991, and 1992 showed no signs of shoreline erosion in the Project impoundment, as noted in Section 2.1.4. As stated, the majority of the Project impoundment shoreline is developed. The eastern basin is more highly developed, with private and commercial land use adjacent to the shoreline and Project boundary. The shoreline is highly populated by private and commercial developments, and numerous docks. In addition, the majority of the shoreline is armored with rip-rap, sheet pile wall, or concrete seawall.

Licensing the continued operation of the Project in a run-of-river mode is not anticipated to result in any shoreline erosion or impacts to upland geology or soils. The majority of the shoreline is developed and protected. The continued operation of the Project is not anticipated to affect geologic and soil resources.

2.2.1 Agency Recommended Mitigation

MDNR filed comments on the French Landing Draft License Application (DLA) with FERC on February 25, 2025. In the letter MDNR recommended that the Licensees coordinate with the Huron River Watershed Council (HRWC) to develop strategies to educate property owners and Belleville Lake users about shoreline stewardship, including erosion mitigation and shoreline best management practices. The Licensees have provided responses to the comments received in Appendix E-1.

2.2.2 Applicant Proposed Mitigation

The Licensees are proposing to continue to operate the Project in a run-of-river mode of operation where inflow equals outflow for the protection of geology and soil resources. By operating in a run-of-river mode, impoundment water level fluctuations and hydraulic shear stresses will be limited to those resulting from naturally occurring flows.

2.2.3 Unavoidable Adverse Effects

As there are no proposed changes to the current run-of-river operation, and the majority of the shoreline is protected, no unavoidable adverse effects to geology and soil resources are anticipated due to continued Project operation.

2.3 References

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3 WATER RESOURCES

3.1 Affected Environment

3.1.1 Water Quantity

The Huron River flows roughly 136 miles from Huron Swamp in Springfield Township, Oakland County, MI to Lake Erie, where it forms the border between Wayne and Monroe Counties. The river passes through the cities of Dexter, Ann Arbor, Ypsilanti, Belleville, Flat Rock, and Rockwood, dropping approximately 446 feet along its course.

The Huron River basin is depicted in Figure 1.1-1. It begins its course by flowing southwest from Huron Swamp through Oakland County and Livingston County. It then begins to flow southeast through Washtenaw County. The river continues flowing southwest between Wayne and Monroe Counties into Lake Erie. Several dams are present on the river, including the French Landing Dam which is the third most downstream dam.

3.1.1.1 Drainage Area

The Project has a drainage area of 841 mi^2, which is approximately 93 percent of the total Huron River watershed. The Ford Lake Hydroelectric Project is located approximately 11 miles upstream and is operated as a run-of-river facility.

3.1.1.2 Streamflow, Gage Data, and Flow Statistics

The USGS operates a streamflow gaging station, USGS Gage No. 04174500 Huron River at Ann Arbor, MI (herein referred to as the Ann Arbor gage) approximately 22 miles upstream of the Project. This gage has a drainage area of 729 mi^2 and a period of record for daily streamflow from 1914 to present.[2] There are four dams on the Huron River between the Ann Arbor gage and the Project (from upstream to downstream): Geddes Dam, Superior Dam, Peninsular Paper Dam, and Ford Lake Dam. Geddes Dam and Superior Dam are both owned and operated by the City of Ann Arbor. The Geddes Dam was used for hydroelectric generation but was decommissioned in 1959 and is currently operated as run-of-river by the city. The city currently utilizes Superior Dam for hydroelectric generation (FERC No. 3152) and has operated it in run-of-river mode since 1982. The Peninsular Paper Dam was also used for hydroelectric generation but was decommissioned in 1970. The dam was purchased by the City of Ypsilanti in 1986 and has been operated in run-of-river mode since. The Ford Lake Dam is operated for hydroelectric generation (FERC No. 5334) in run-of-river mode since 1984.

To estimate flow at the Project, daily flow data recorded at the Ann Arbor gage was prorated by a factor of 1.154 for the period 1988-2024.[3] The mean annual daily flow at the Project for the period analyzed was approximately 632 cfs. The peak daily average streamflow at the Project for the

[2] The Ann Arbor gage has a data gap from 10/1/1947 to 8/1/1948.
[3] The proration factor of 1.154 is calculated as the drainage area of the French Landing Project (841 mi^2) divided by the drainage area of the Ann Arbor USGS Gage (729 mi^2).

same period was approximately 3,772 cfs, which occurred on May 27, 2011. Conversely, the minimum daily streamflow at the Project during the period analyzed was approximately 21 cfs, which occurred on July 7, 1988. Annual and monthly flow duration curves using the prorated data for the period 1988-2024 are presented in Figures 3.1.1.2-1 through 3.1.1.2-5, while Table 3.1.1.2-1 provides the minimum, maximum, median, and mean monthly and annual flows at the Project. The Project's maximum hydraulic capacity is 880 cfs, which was equaled or exceeded approximately 21% of the time on an annual basis for the period analyzed.

Streamflow is normally at its peak throughout the spring during snowmelt and early spring storm events and at its lowest in late summer and early fall before increasing again in mid to late fall. Figure 3.1.1.2-6 shows the average, 25th percentile, and 75th percentile, annual hydrograph for the Project using streamflow data from the 1988 to 2024 period.

3.1.1.3 Reservoir Characteristics and Downstream Hydraulic Gradient

The Project reservoir, Belleville Lake, extends approximately 7 miles upstream of the Project dam, terminating approximately 1 mile downstream of the Ford Lake Dam. Belleville Lake has a surface area of 1,270 acres and a storage capacity of 17,780 acre-feet at a pool elevation of 651.5 feet. In 2012, MDNR collected limnological samples in the reservoir that indicated a reservoir depth of approximately 27 feet in the eastern basin and 18 feet in the western basin. Based on historic evaporation rates, it is estimated that the average annual rate of evaporation from the Project reservoir is approximately 4.8 cfs, which is less than 1% of the mean annual daily flow at the Project.

Immediately below the dam, the Huron River is approximately 130 feet wide as it passes through the Project tailrace. The river continues downstream from the Project tailwater approximately 26 miles where it joins Lake Erie, dropping approximately 48 feet along the way, resulting in a gradient of 1.68 ft/mi. This portion of the river is generally slow moving, wide, and low gradient (ADW, 2012). The Huron River below the Project is free flowing for approximately 16 miles before reaching the Flat Rock Dam reservoir, Flat Rock Pond.

3.1.1.4 Existing and Proposed Uses of Water

The Project is operated in a run-of-river mode, maintaining discharge from the Project so that the flow in the Huron River, as measured immediately downstream from the Project tailrace, approximates the inflow to the Project reservoir. There are currently no documented water withdrawals within the impoundment. The Licensees are not proposing any changes to the current water uses.

3.1.1.5 Existing Water Rights

The Licensees hold all flowage rights necessary to operate the Project. Several docks are constructed in Belleville Lake. Any new development within the Project boundary would be subject to local ordinances as described in the Van Buren Charter Township Zoning Ordinances and City of Belleville Zoning Ordinances. In addition, the Licensees have historically filed

applications with FERC requesting authorization to permit the construction of new dock structures. With the exception of docks, there is no development within the Project boundary other than the Project facilities.

3.1.1.6 Water Withdrawals

The City of Ann Arbor, located approximately 22 miles upstream of the Project, utilizes the Huron River for municipal water supply. The City operates two water treatment plants with a combined capacity of 50 million gallons per day (MGD). Approximately 85% of the water at these plants is from the Huron River (Ann Arbor, 2022).

While situated on Belleville Lake, Van Buren Township and the City of Belleville obtain water service from the Great Lakes Water Authority, which draws water from Lake Huron and the Detroit River (Van Buren, 2022).

EGLE has published the total water use for Wayne County in 2019. Table 3.1.1.6-1 summarizes the withdrawal types and volumes for Wayne County in 2019. Electrical power generation was the largest user of water followed by industrial and manufacturing (EGLE, 2019a).

Table 3.1.1.2-1: Daily Average Streamflow (cfs) at the French Landing Project (1988 to 2024)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
Minimum	156	111	90	113	158	37	21	55	60	88	142	73	21
Maximum	2,780	2,965	3,230	3,172	3,772	2,988	2,215	1,880	1,604	2,319	2,734	2,596	3,772
Median	601	630	939	843	744	472	302	261	254	350	554	557	528
Mean	734	749	1,028	939	864	601	370	335	328	418	607	619	632

Table 3.1.1.6-1: Wayne County Water Use for 2019

Withdrawal Type	Great Lakes (gal)	Groundwater (gal)	Inland Surface Water (gal)	Total
Commercial-Institutional	65,448,000	2,708,200	0	68,156,200
Electric Power Generation	114,609,441,000	0	66,441,853,000	181,051,294,000
Industrial-Manufacturing	95,000,672,560	583,272,405	84,156,174,724	179,740,119,689
Irrigation	34,654,333	198,979,736	177,505,152	411,139,221
Livestock	0	0	0	0
Public Water Supply	158,255,810,000	0	0	158,255,810,000
Other	0	20,330,400	0	20,330,400
Total	367,966,025,893	805,290,741	150,775,532,876	519,546,849,510

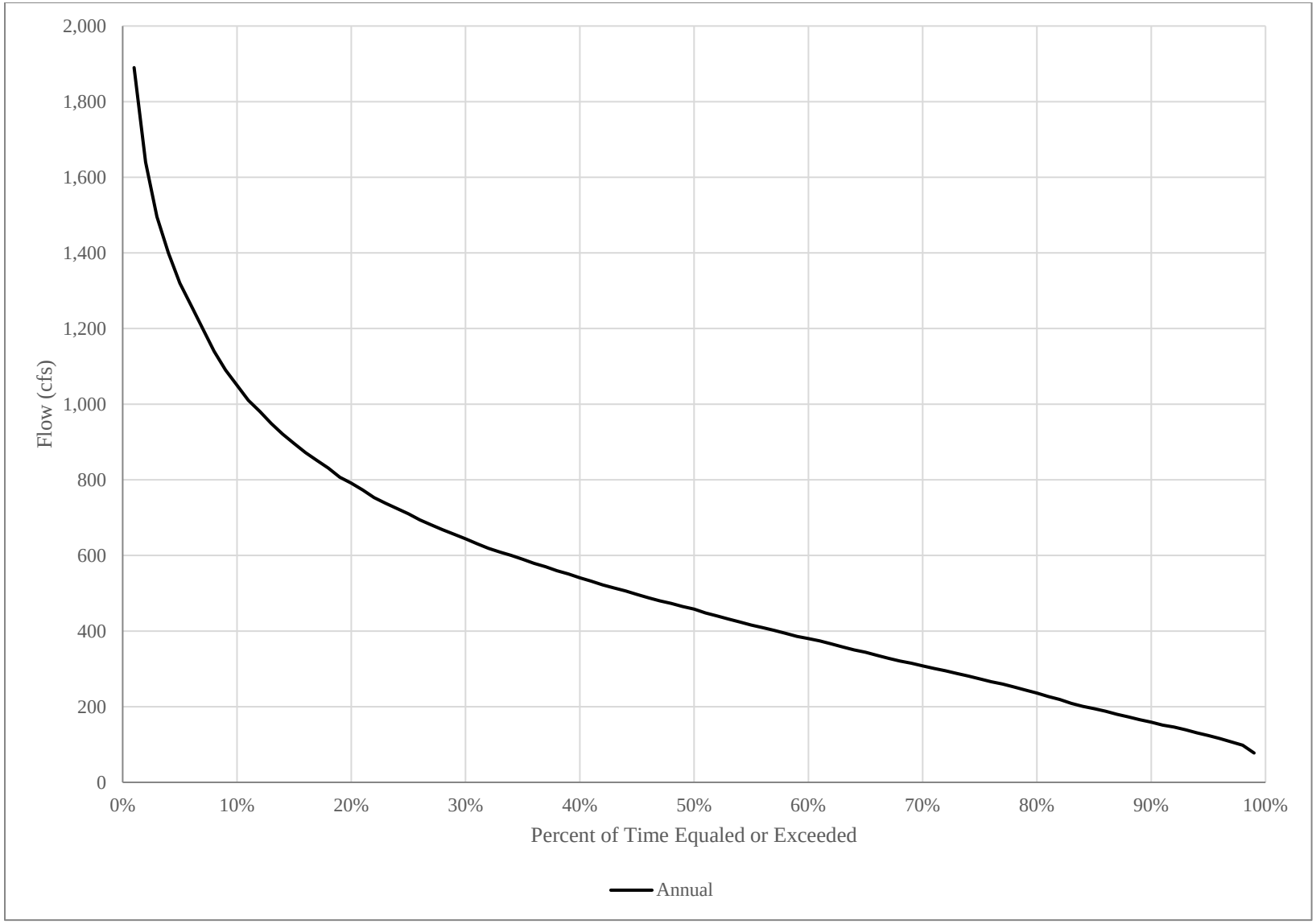


Figure 3.1.1.2-1: Annual Flow Duration Curve (1988 to 2024)

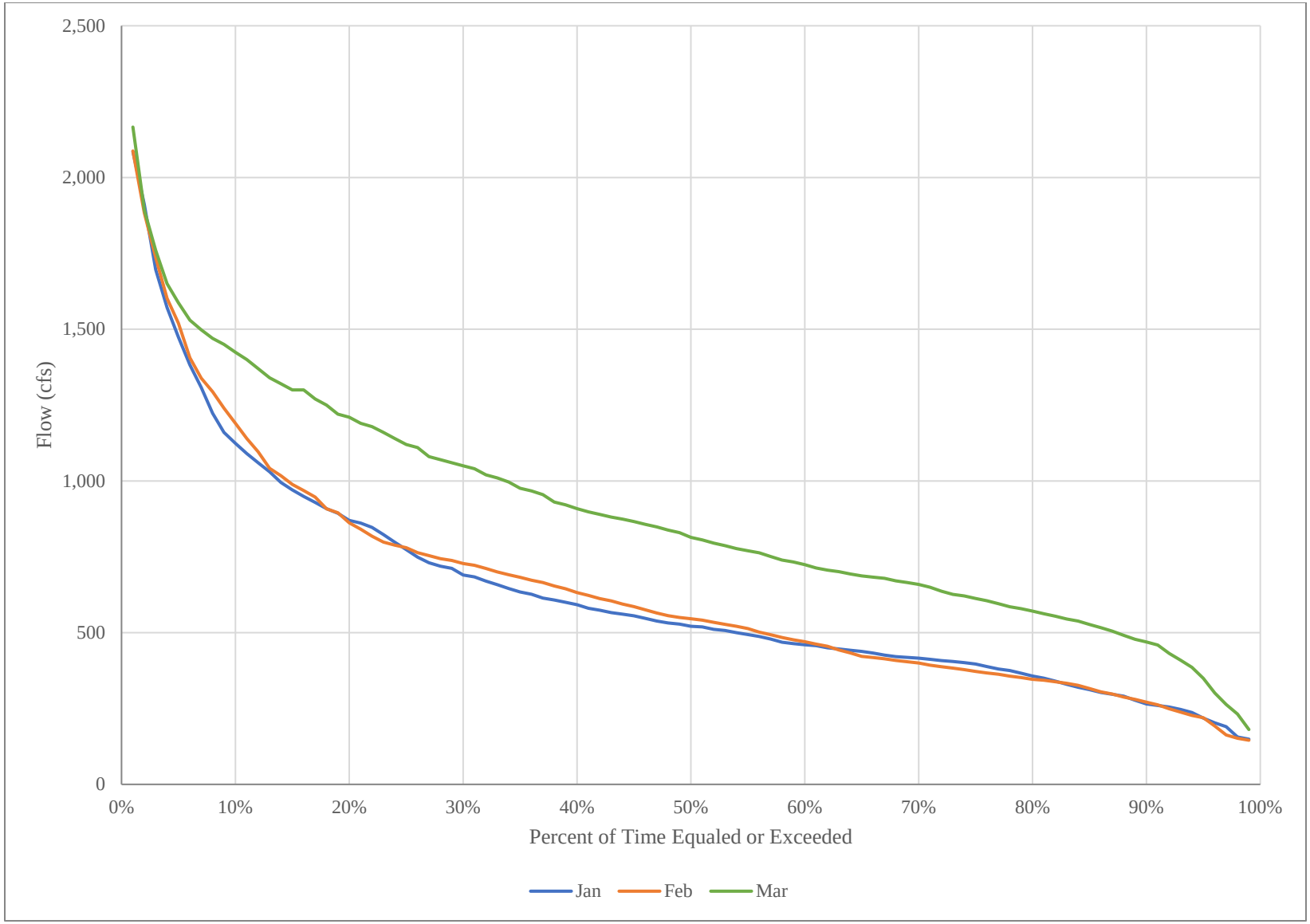


Figure 3.1.1.2-2: January, February, and March Flow Duration Curve (1988 to 2024)

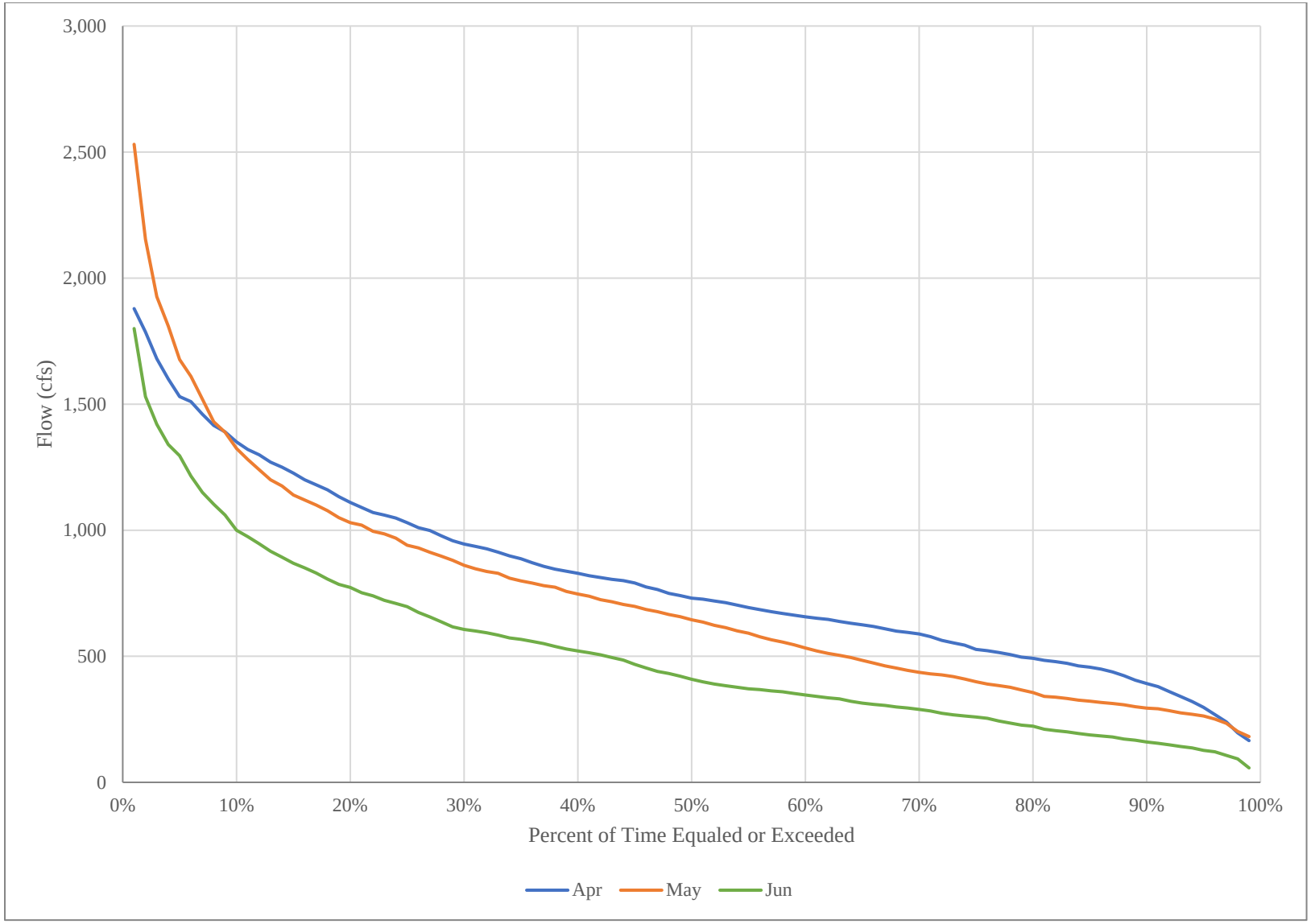


Figure 3.1.1.2-3: April, May, and June Flow Duration Curve (1988 to 2024)

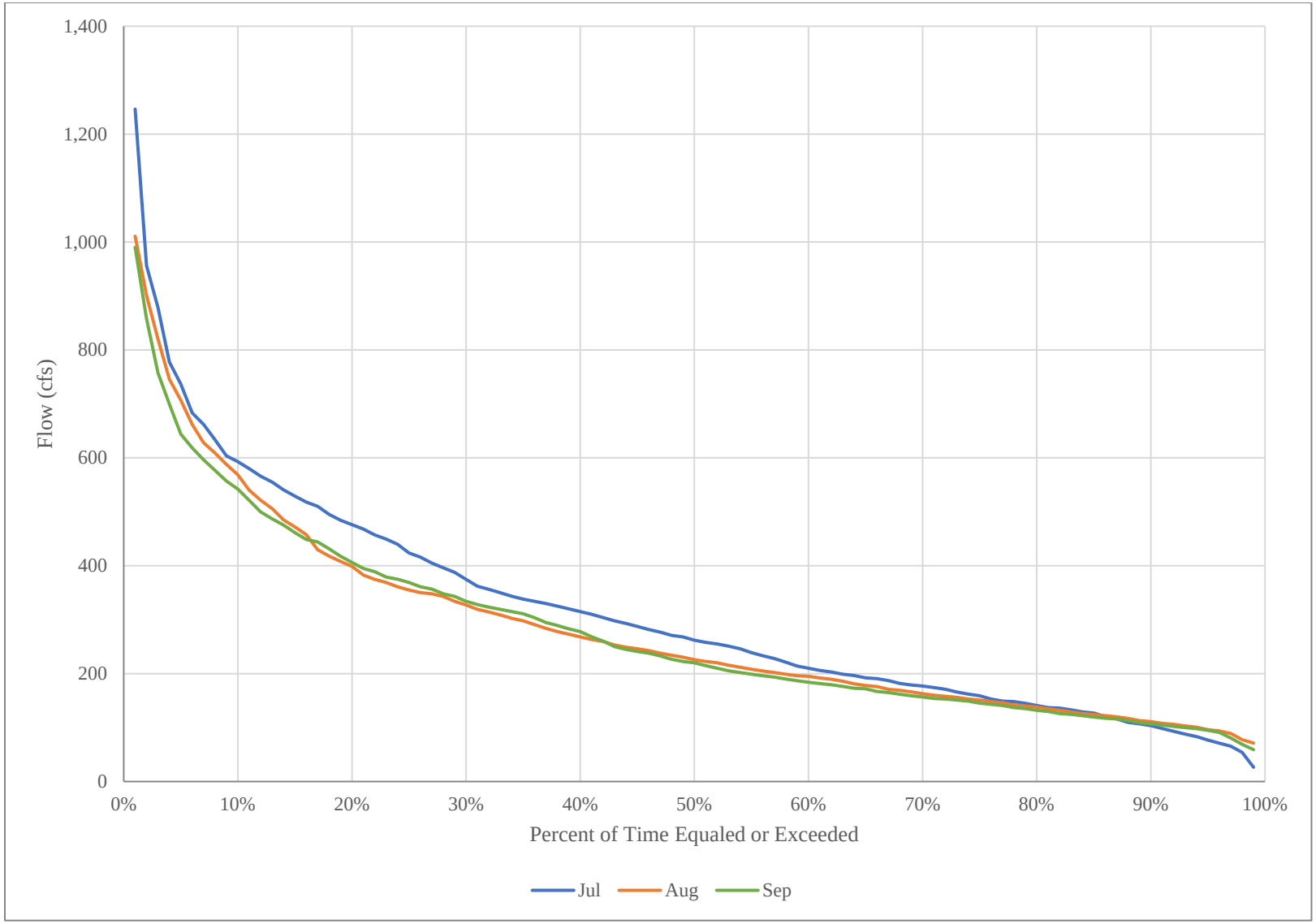


Figure 3.1.1.2-4: July, August, and September Flow Duration Curve (1988 to 2024)

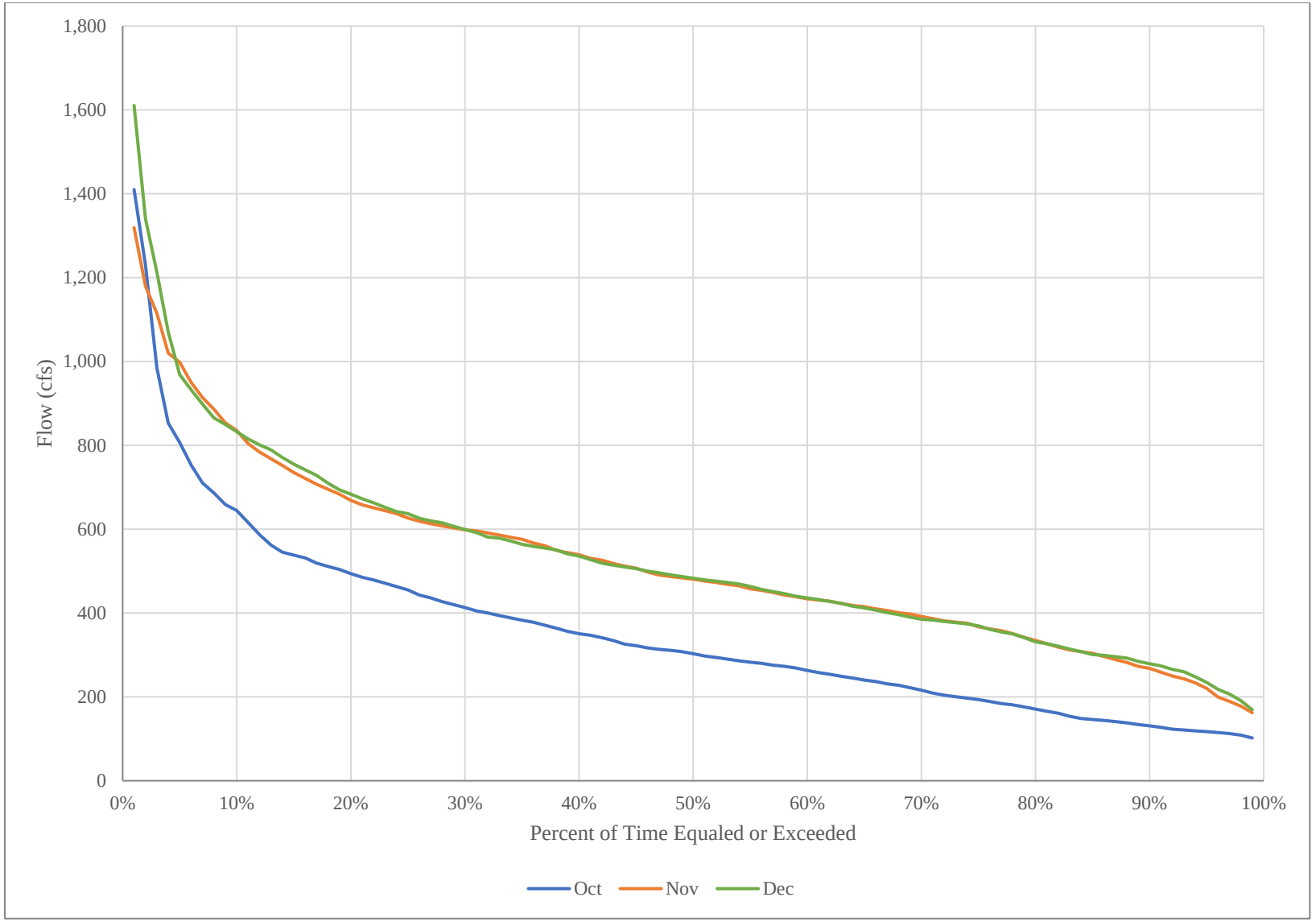


Figure 3.1.1.2-5: October, November, and December Flow Duration Curve (1988 to 2024)

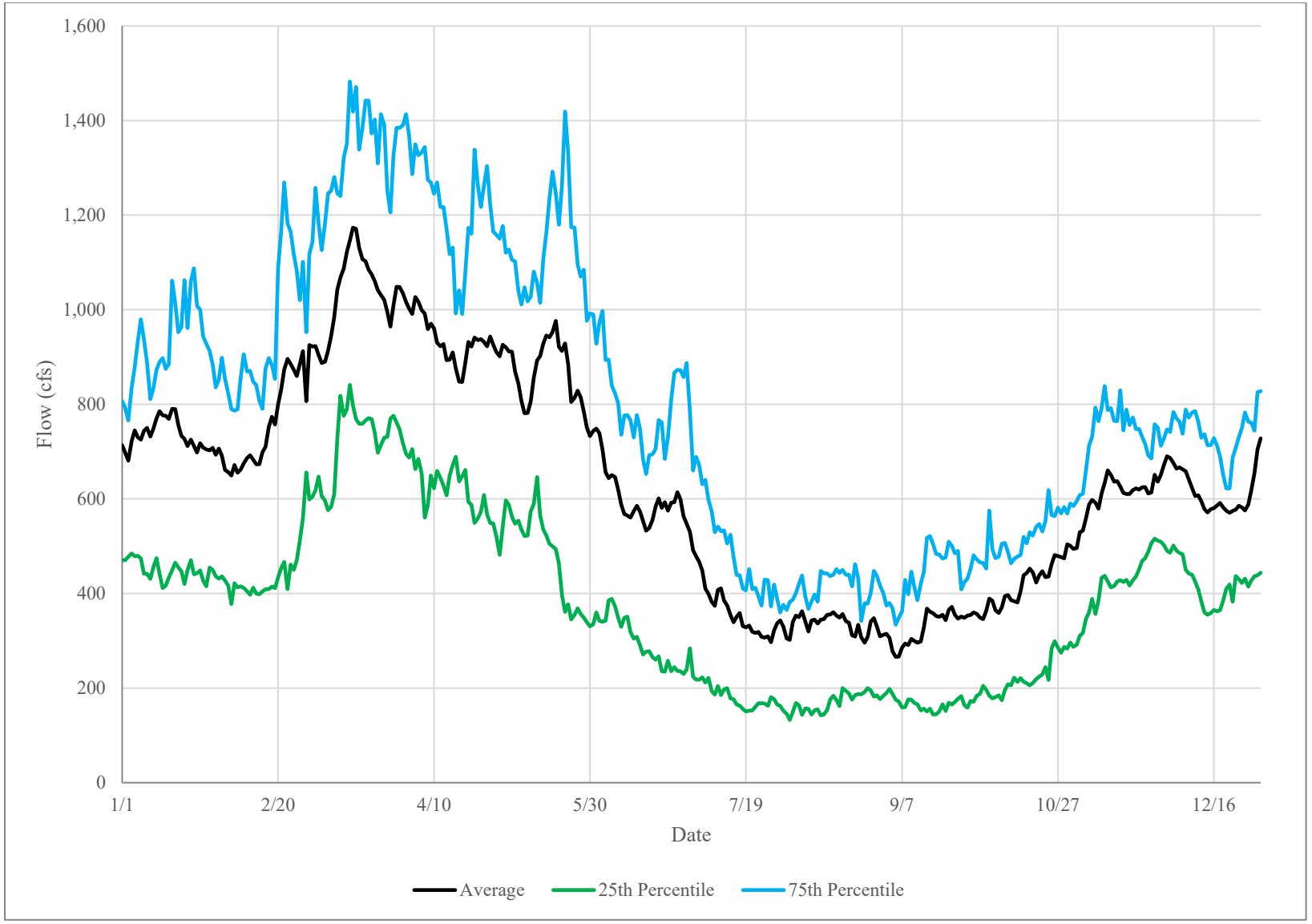


Figure 3.1.1.2-6: Average, 25th Percentile, and 75th Percentile Annual Hydrograph at the Project (1988 to 2024)

3.1.2 Water Quality

The following sections discuss water quality standards and classifications applicable to the Huron River in the Project vicinity. The results from water quality investigations that pertain to the Huron River in the Project area are also discussed.

3.1.2.1 Water Quality Standards

3.1.2.1.1 Federal Clean Water Act

In 1972, the Federal Water Pollution Control Act Amendments established the Clean Water Act (CWA) as the foundation of modern surface water quality protection in the United States. Sections 303 and 305 of the Act guide the national program on water quality. Sections 303(a) through 303(c) discuss the process by which all states are to adopt and periodically review water quality standards. Section 305(b) directs states to periodically prepare a report that assesses the quality of waters in the state.

3.1.2.1.2 State Water Quality Standards

The State of Michigan's Part 4 Rules, Water Quality Standards (of Part 31, Water Resources Protection, of Act 451 f 1994) specify water quality standards which shall be met in all waters of the state. Michigan's Part 4 Water Quality Standards require that all designated uses of the receiving water be protected (EGLE, 2022b). Designated uses are defined in Michigan Administrative Code R 323.1100 and include at a minimum: agriculture, navigation, industrial water supply, warm water fishery, other indigenous aquatic life and wildlife, fish consumption, and partial body contact recreation. Additional designated uses (including trout stream and public water supply) may be applied to specific waters. The Huron River has no additional designations in the vicinity of the Project. The Huron River in the vicinity of the Project shall maintain a minimum dissolved oxygen (DO) concentration of 5 milligrams per liter (mg/L). Other water quality standards including for pH and water temperature in the Huron River in the vicinity of the Project are identified in Table 3.1.2.1.2-1.

The CWA requires states to prepare a biennial report to the U.S. Environmental Protection Agency (USEPA) with an assessment of the quality of their waters (Section 305(b)), a list of waters that do not support their designated uses or attain water quality standards and require the development of Total Maximum Daily Loads (TMDLs) (Section 303(d)), and an assessment of status and trends of publicly owned lakes (Section 314) (EGLE, 2022c). Table 3.1.2.1.2-2 defines the various categories used to describe the status of the waterbodies on the 303(d) list.

EGLE organizes the Michigan 303(d) list by 12-digit Hydrologic Unit Code's HUC's. The Belleville Lake – Huron River HUC (040900050404) was listed as impaired in 2020 for fish consumption due to polychlorinated biphenyls and perfluorooctane sulfonate and for other indigenous aquatic life and wildlife for algae and phosphorus (USEPA, 2022). A TMDL for phosphorus was developed for Ford and Belleville Lakes in 2019 due to the presence of algal blooms in the lakes. The TMDL established a target concentration of 30 µg/L total phosphorus (TP) in both lakes (EGLE, 2019c).

Table 3.1.2.1.2-1: Water Quality Standards for the Huron River in the Vicinity of the Project

Parameter	Standard	
pH	The hydrogen ion concentration expressed as pH shall be maintained within the range of 6.5 to 9.0 S.U. in all surface waters of the state, except for those waters where the background pH lies outside the range of 6.5 to 9.0 S.U. Any requests to artificially induce a pH change greater than 0.5 S.U. in surface waters where the background pH lies outside the range of 6.5 to 9.0 S.U., shall be considered by the department on a case-by-case basis.	
Dissolved Oxygen	A minimum of 5 mg/L of dissolved oxygen shall be maintained.	
Water Temperature	Rivers, streams, and impoundments naturally capable of supporting warmwater fish shall not receive a heat load which would warm the receiving water at the edge of the mixing zone more than 5 degrees Fahrenheit above the existing natural water temperature. Rivers, streams, and impoundments naturally capable of supporting warmwater fish shall not receive a heat load which would warm the receiving water at the edge of the mixing zone to temperatures greater than the following monthly maximum temperatures:	
	January	41°F
	February	40°F
	March	50°F
	April	63°F
	May	76°F
	June	84°F
	July	85°F
	August	85°F
	September	79°F
	October	68°F
	November	55°F
	December	43°F

Source: MDEQ, 2006

Table 3.1.2.1.2-2: Section 303(d) List Category Definitions

Category	Definition
Category 1	All designated uses are supported; no use is threatened.
Category 2	Available data and/or information indicate that some, but not all of the designated uses are supported; the remainder are either not assessed or have insufficient data to make a support determination.
Category 3	There is insufficient available data and/or information to make a designated use support determination.
Category 4	Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed.
Category 4A	A TMDL to address the impairment-causing pollutant has been approved or established by the USEPA.
Category 4B	Other approved pollution control mechanisms are in place and are reasonably expected to result in attainment of the designated use within a practical time frame.
Category 4C	Impairment is not caused by a pollutant (e.g., impairment is due to lack of flow or stream channelization).
Category 5	Available data and/or information indicate that at least one designated use is not being supported or is threatened, and a TMDL is needed.
Category 5alt	An alternative restoration approach is being taken, with a schedule and milestones, that is anticipated to be more practical and immediately beneficial to the goals of achieving designated use support than the development of a TMDL. Following the USEPA's 2013 Long-Term Vision for Assessment, Restoration, and Protection under the CWA Section 303(d) Program guidance, an alternative approach should incorporate adaptive management and be tailored to specific circumstances where such approaches are better suited to achieve water quality goals in the near-term. Importantly, the impaired use remains on the Section 303(d) list, recognizing that development of a TMDL is required, unless the alternative approach is able to achieve the goal of designated use support and WQS attainment.

3.1.2.2 Existing Water Quality Data

The Huron River and Belleville Lake were monitored by several organizations near the Project as part of the following studies or programs:

- EGLE Historic Lake Water Quality Monitoring and Lake Data (1998 – 2005) (EGLE 2022a)
- USGS State and Regional Water-Quality Characteristics and Trophic Conditions of Michigan's Inland Lakes (2001 – 2005) (USGS, 2008)
- USEPA National Aquatic Resources Survey (2007) (USEPA 2007)
- MDNR Status of The Fishery Resource Report – Belleville Lake (2012) (MDNR, 2013)
- EGLE Nutrient Chemistry Survey of Ford and Belleville Lakes (2014, 2016, and 2018) (EGLE, 2019b)
- Licensee Water Quality Study (2023)

Based on a review of existing information, waters in the vicinity of the Project generally meet Michigan water quality standards. DO is typically above 5 mg/L in Belleville Lake, however, in late summer months DO stratification occurs, with DO dropping below 5 mg/L in lower portions of the impoundment. Additionally, Belleville Lake exhibits high levels of nutrients, particularly TP, often leading to eutrophic conditions in the late summer. Figure 3.1.2.2-1 provides a map of the historic water quality monitoring locations. Data from these water quality monitoring studies and programs are summarized below.

3.1.2.2.1 EGLE Historic Lake Water Quality Monitoring and Lake Data (1998 – 2005)

In 1973, MDNR began systematically inventorying and sampling lakes in Michigan to document trophic conditions as well as to obtain general baseline water quality information. In 1979, USEPA funds were awarded to Michigan to expand the lakes monitoring effort and an ambient water quality monitoring program was initiated to sample and classify lakes across the state. In 1998, the Lake Water Quality Assessment monitoring program was implemented in cooperation with the USGS - Michigan District as part of EGLE's Strategic Environmental Quality Monitoring Program for Michigan Surface Waters (EGLE, 2022a).

From 1998 to 2005, four monitoring sites in Belleville Lake were monitored for baseline water-quality conditions and trophic status (Figure 3.1.2.2-1). Water quality assessment surveys were conducted during spring turnover and summer stratification periods. Water quality parameters monitored include nutrients (various forms of nitrogen and phosphorus), chlorophyll a, water clarity (Secchi depth), color, dissolved oxygen, water temperature, specific conductance, pH, alkalinity, hardness, and major ions such as calcium, magnesium, sodium and chloride. Sampling consisted of grab samples at both the surface and bottom of the lake at each site (EGLE, 2022a).

At the site closest to the French Landing Dam (21MICH-821409) average DO was approximately 7.06 mg/L using data from the spring and fall of 1998 through 2002. At the next site upstream (21MICH-820790) average DO was approximately 8.42 mg/L using data from April and August

of 2002. At the next site upstream (21MICH-821162) average DO was approximately 8.94 mg/L based on data from the spring and fall of 1998 through 2001. At the most upstream extent of Belleville Lake (21MICH-821163) average DO was approximately 8.01 mg/L based on data from the spring and fall of 1998 through 2001[4].

3.1.2.2.2 USGS State and Regional Water Quality Characteristics and Trophic Conditions of Michigan's Inland Lakes (2001 – 2005)

As part of the EGLE Historic Lake Water Quality Monitoring study of 1998 to 2010, the USGS jointly monitored selected water quality parameters in Michigan's inland lakes. In Belleville Lake, the USGS monitored water quality at two of the sites monitored by EGLE (USGS-4212530832638 and USGS-4212520832735), collecting more parameters than were collected by EGLE, and at an additional site between these two sites (See Figure 3.1.2.2-1) (USGS, 2008).

Two DO profiles were collected at all three sites, one in April 2002 and one in August 2002. DO was above 7 mg/L at all three sites during the April measurements. DO was generally above 5 mg/L in the upper 18 feet of the lake in October but decreased below 5 mg/L between 18 to 20 feet and the bottom.

3.1.2.2.3 USEPA National Aquatic Resources Survey

The USEPA National Aquatic Resources Survey (NARS) are collaborative programs designed to assess the quality of coastal waters, lakes and reservoirs, rivers and streams, and wetlands using statistical survey design. NARS monitored physical water quality in the Belleville Lake western basin (NLA06608-0463, See Figure 3.1.2.2-1). Monitoring was conducted in August of 2007 and consisted of profile samples of conductivity, DO, pH, and water temperature. Additionally, chlorophyll a and secchi disc readings were measured. The results show that DO remained above 5 mg/L for the full 18 feet of the water column (USEPA, 2022).

3.1.2.2.4 MDNR Status of The Fishery Resource Report – Belleville Lake (2012)

MDNR collected DO, temperature, and pH profiles in Belleville Lake as part of the Status of The Fishery Resources Report for Belleville Lake in 2012. Profiles were collected on September 13 2012, in the east and west basins. Neither basin was thermally stratified at the time of this sampling. Water temperatures ranged from 73.4 ºF at the surface down to 72.9 ºF near the bottom in the western basin and from 75.8 ºF at the surface down to 73.2 ºF near the bottom of the eastern basin. In both basins, DO dropped below 5 mg/L beginning at approximately 15-16 feet of depth. DO levels in the eastern basin began dropping steadily below about 9 feet, dropped below the level acceptable to fish of 4 mg/L at about 16 feet, and reached the lowest levels of less than 0.5 mg/L near the bottom at 27 feet. In the western basin, DO dropped sharply from 6.0 mg/L at 11 feet

[4] Note that the depth that the DO measurements were made at were not accurately recorded in the database and were likely profiles. Additionally, some of the dissolved oxygen measurements are the same as the measurements recorded at the USGS sites discussed in Section 3.1.2.2.2, as these measurements were monitoring efforts that were conducted jointly.

down to 3.7 mg/L at 15 feet and continued to decrease to 2.5 mg/L near the bottom at 18 feet (MDNR, 2013).

3.1.2.2.5 EGLE Nutrient Chemistry Survey of Ford and Belleville Lakes (2014, 2016, and 2018)

In 1995, EGLE completed a phosphorus loading analysis and subsequent phosphorus TMDL for Ford and Belleville Lakes. Ford and Belleville Lakes are highly eutrophic lakes on the Huron River. To meet the goal of 30 micrograms per liter (µg/L) for TP in Belleville Lake, it was determined that TP concentrations could not exceed 50 µg/L in the Huron River, just upstream of Ford Lake. Water quality monitoring of Ford and Belleville Lakes is currently conducted biennially during the growing season months (April-September) to determine the progress toward meeting the phosphorus goal established as part of the TMDL (EGLE, 2019b).

The most recent report presents sampling results from 2014, 2016, and 2018[5]. Water chemistry sampling was conducted monthly from April through September at four sites in Belleville Lake. Grab samples were collected (1) near the surface, (2) mid-depth, and (3) approximately 3 feet off the bottom at all lake sites for TP, ortho phosphate, ammonia, nitrate + nitrite, nitrite, Kjeldahl nitrogen, and total suspended solids. Additionally, depth-integrated water samples for chlorophyll a analysis were collected, and water clarity was determined using a secchi disk at each site. Temperature, DO, specific conductance, and pH profiles were also measured at each site (EGLE, 2019b).

Results of the monitoring indicated that lake-wide average total phosphorus concentrations have not significantly declined since 1994 in Belleville Lake. The highest total phosphorus concentrations recorded in each year were 46 µg/L (September 2014), 86 µg/L (September 2016), and 122 µg/L (June 2018). Additionally, blue-green algal blooms were noted by surveyors during the August and September 2014 sampling efforts. DO profiles indicate the DO was generally above 6 mg/L but dropped below 5 mg/L at deeper portions of the reservoir. Results for all monitoring parameters are also presented in tabular format in the report (EGLE, 2019b).

3.1.2.2.6 Relicensing Water Quality Monitoring (2023)

As part of the relicensing effort, the Licensees conducted the *Water Quality Study* to determine if the Project meets Michigan Water Quality Standards pursuant to Michigan's Part 4 Water Quality Standards (Part 4 Rules). The study also sought to create a better understanding of the Project's effects on the impoundment and downstream water quality, if any.

The study included continuous monitoring (every 30 minutes) of temperature and DO at three monitoring locations from June 1, 2023 to September 30, 2023. The three locations are shown in Figure 3.1.2.2.-1 and were as follows:

- **Site FL-1: Near Ford Lake Dam** (42.20966N, -83.55453W)

[5] Preliminary results for 2021 and 2023 monitoring has been provided to the Licensees by EGLE, however, the final report is not yet available. If available, the data from the final report will be incorporated into the FLA.

  - Monitoring location was approximately 0.6 miles downstream of Ford Lake Dam on the Huron River in the middle of the water column. This site represented the inflow conditions to the Project.

- **Site FL-2: Belleville Lake** (42.21533N, -83.44440W)

  - Monitoring location was approximately 1,000 feet upstream of the Project powerhouse; the monitoring depth was 12 feet, which corresponds to the approximate centerline of the Project intake.

- **Site FL-3: Downstream** (42.21285N, -83.43792W)

  - Monitoring station was located in the Huron River approximately 1,000 feet downstream of the Project dam/powerhouse discharge in the middle of the water column. This site represented the overall water quality conditions just below the Project.

Discrete water quality measurements of temperature and DO were also collected at each monitoring site during field visits, which were conducted no less than every two weeks. In addition to the discrete measurements, a hydrographic profile for temperature and DO was developed for Site FL-2. The vertical profiles were collected every two weeks throughout the study period.

The vertical profile data collected from Belleville Lake for this study revealed that thermal stratification began to develop in May and June but did not persist throughout the remainder of the monitoring period (Figure 3.1.2.2.6-1). This was likely due to higher than normal river flows from July through September. At no point during the study period did the water temperature measured at any study location exceed the monthly maximum temperature limit.

Belleville Lake exhibited DO stratification as early as May 23. Low DO levels in the deeper layers of the lake were prevalent through August into early September when hypoxic conditions were observed at or below the hydropower intake depth. With the exception of the profile conducted on September 26, 2023, DO concentrations below 5 mg/L were recorded in the bottom layer of the impoundment during each profiling event (Figure 3.1.2.2.6-2).

The low DO levels observed in the vertical profiles in Belleville Lake were also reflected in the continuous DO data collected from FL-2, where DO levels were below 5.0 mg/L approximately 25% of the monitoring period. Despite the low DO levels observed at the inflow location (FL-1) and in the deeper areas of the Project impoundment (FL-2), DO at Site FL-3 downstream of the Project discharge was rarely below 5.0 mg/L. DO levels at FL-3 were below 5.0 mg/L 2.7% of the monitoring period, compared with 19% of time at Site FL-1, indicating water quality is improved as it passes through the Project. This suggests that the water coming into the impoundment can experience low DO from upstream sources and that the impoundment stratification was not, *per se*, the driving factor causing the periodic low DO measurements downstream of the Project. Table 3.1.2.2.6-1 shows the ranges and averages for temperature and DO levels at each monitoring site by month.

During periods of turbine generation, DO levels at FL-3 were periodically <5.0 mg/L in July, August, and September. When DO levels were below 5.0 mg/L at FL-3 during generation, these periods lasted less than a day at a time and typically occurred during overnight hours. When the Project was releasing water as spill, downstream DO levels were always higher than 5.0 mg/L. Operations data and DO levels at site FL-3 are shown in Figures 3.1.2.2.6-3 through 3.1.2.2.6-6.

3.1.2.3 Wastewater Discharges

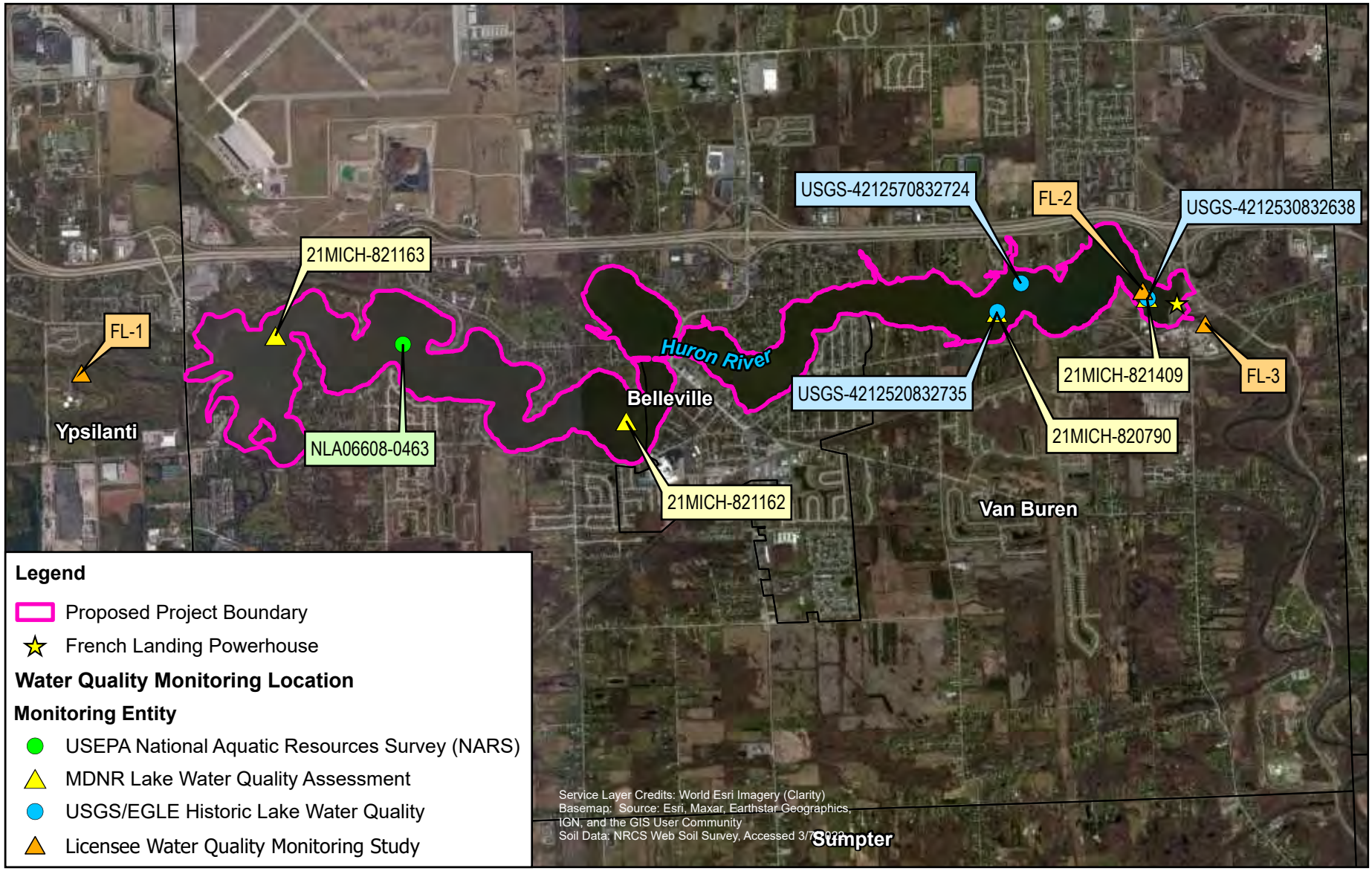
The USEPA is responsible for implementing and overseeing the National Pollutant Discharge Elimination System (NPDES) permit program. The NPDES permit program was created in the 1970's by the Clean Water Act and helps address pollution by regulating point sources that discharge pollutants into receiving waters. Figure 3.1.2.3-1 shows the four (4) NPDES facilities located in the vicinity of the Project.

Two of the four facilities are Municipal Separate Storm Sewer Systems (MS4). A separate storm sewer system is a collection of structures, including retention basins, ditches, roadside inlets and underground pipes, designed to gather stormwater from built-up areas and discharge it, without treatment, into local streams and rivers.

One of the facilities is the U.S. Ecology Wayne Disposal Inc. Hazardous Waste Landfill. The U.S. Ecology Wayne Disposal Inc. is a hazardous waste landfill located at 49350 North I-94 Service Drive in Belleville, Michigan. It was first established in 1970, before hazardous waste handling and disposal operations were regulated under state or federal law. It now operates under a Hazardous Waste Management Facility Operating License issued by EGLE. The fourth facility is an automotive parts manufacturer.

Table 3.1.2.2.6-1: Range of Continuous Temperature and DO Readings from June 1, 2023 to September 30, 2023

	FL-1			FL-2			FL-3		
	Temp (°F)	DO (mg/L)	DO (%sat)	Temp (°F)	DO (mg/L)	DO (%sat)	Temp (°F)	DO (mg/L)	DO (%sat)
June									
Minimum	65.3	3.15	37	67.3	4.46	51	69.3	6.96	83
Maximum	74.4	10.25	121	75.9	12.41	144	76.0	9.00	105
Average	70.0	6.94	80	71.6	8.70	103	71.7	7.86	93
July									
Minimum	72.6	0.75	9	73.4	1.19	15	74.3	3.95	49
Maximum	80.2	11.22	143	80.3	12.72	162	80.4	10.03	124
Average	77.2	6.27	78	77.7	7.12	89	77.9	6.70	83
August									
Minimum	72.4	0.38	5	73.5	0.00	0	73.5	2.91	35
Maximum	80.4	9.45	119	79.8	10.36	131	81.1	11.87	142
Average	75.9	5.93	72	76.5	5.26	64	76.6	7.47	91
September									
Minimum	67.6	0.81	9	68.5	0.33	4	68.4	3.96	45
Maximum	75.5	11.13	134	77.0	10.14	125	76.7	10.13	121
Average	71.6	6.75	79	72.5	5.53	66	72.5	7.21	83
Full Period									
Minimum	65.3	0.38	5	67.3	0.00	0	68.4	2.91	35
Maximum	80.4	11.22	143	80.3	12.72	162	81.1	11.87	142
Average	73.7	6.47	78	74.6	6.65	81	74.7	7.29	87



License Application
French Landing Hydroelectric Project
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Figure 3.1.2.2-1:
Water Quality Monitoring Locations
in the Project Vicinity

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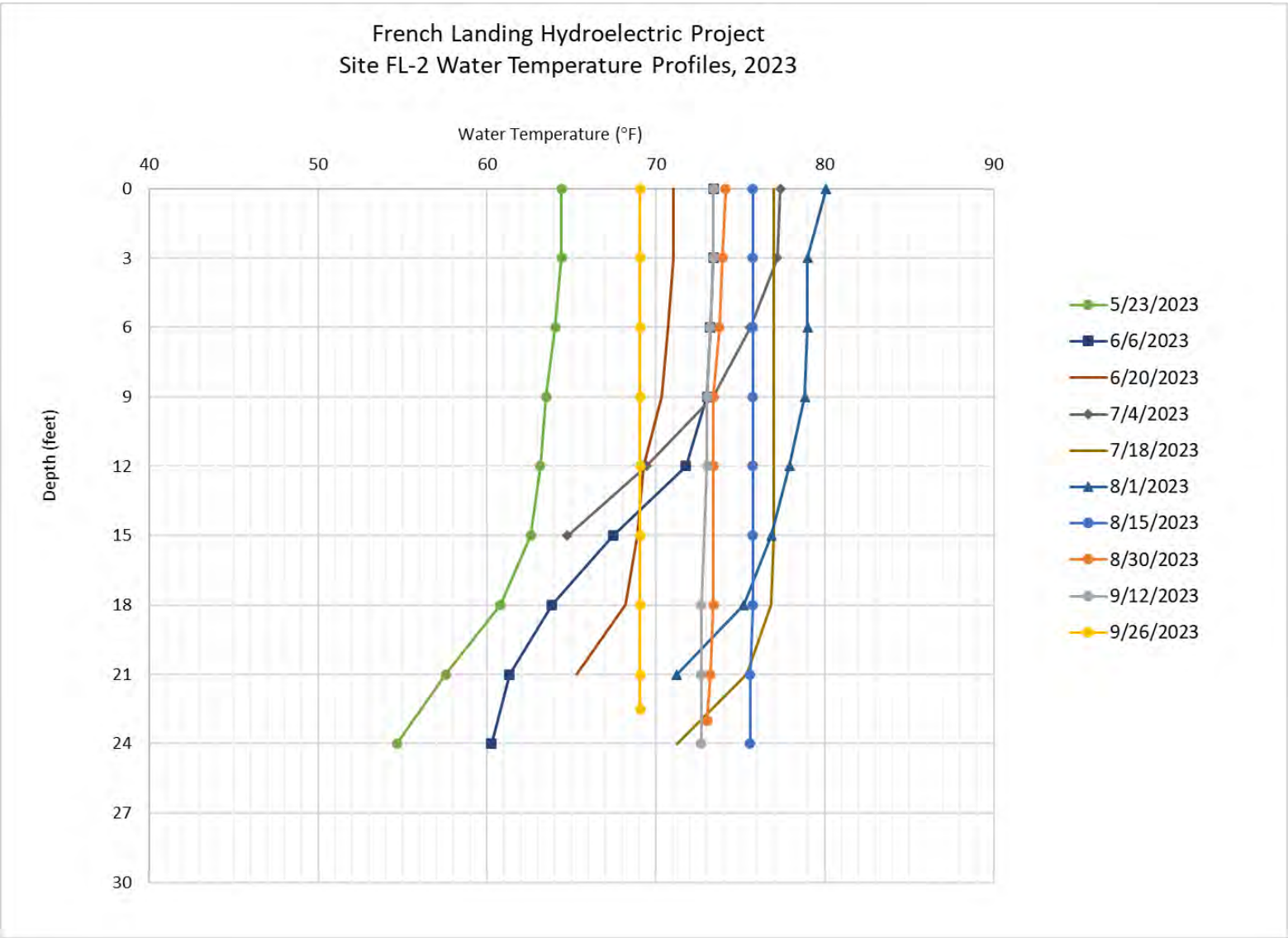


Figure 3.1.2.2.6-1: Belleville Lake (Site FL-2) Vertical Temperature Profiles

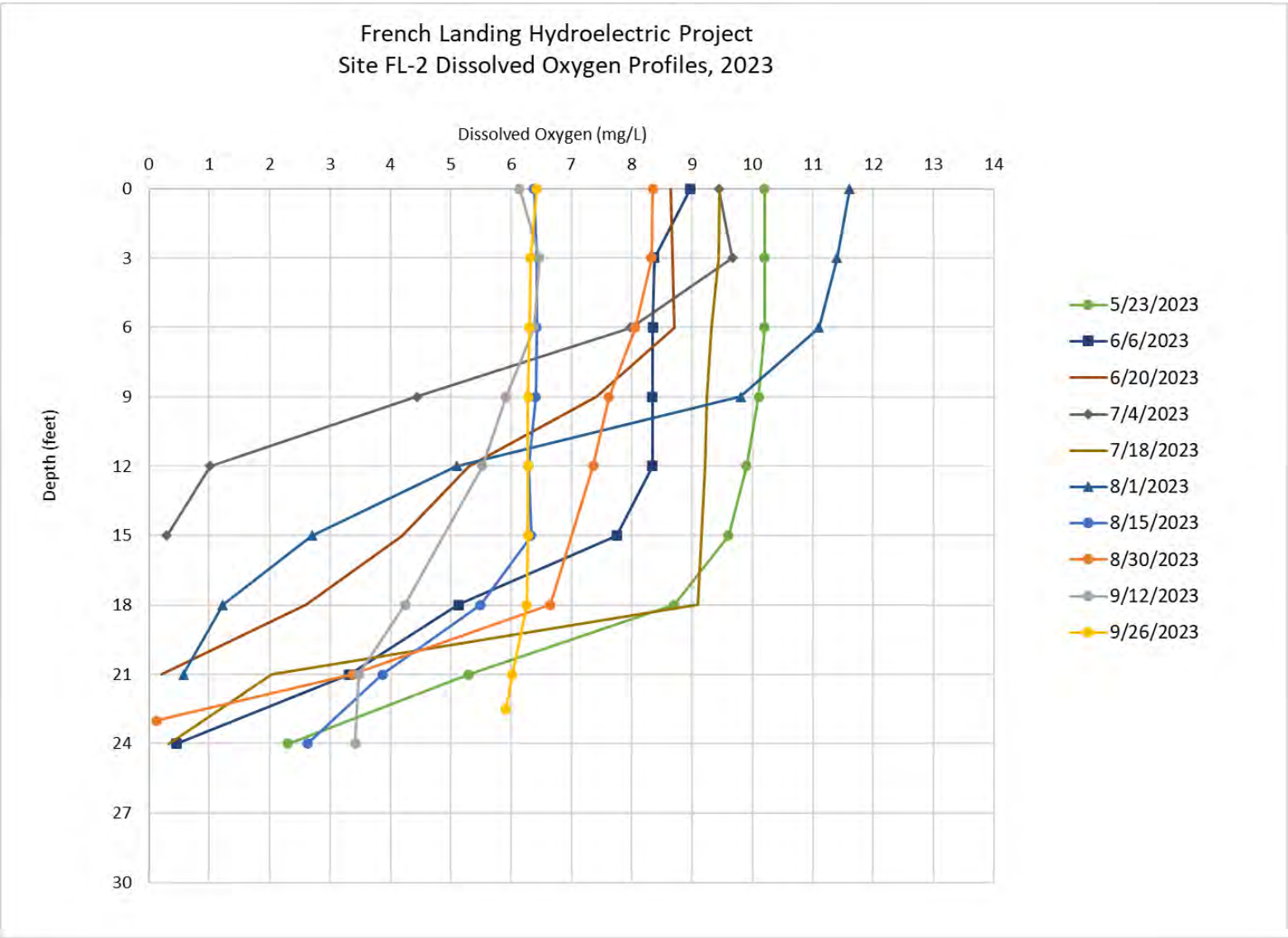


Figure 3.1.2.2.6-2: Belleville Lake (Site FL-2) Vertical DO Profile

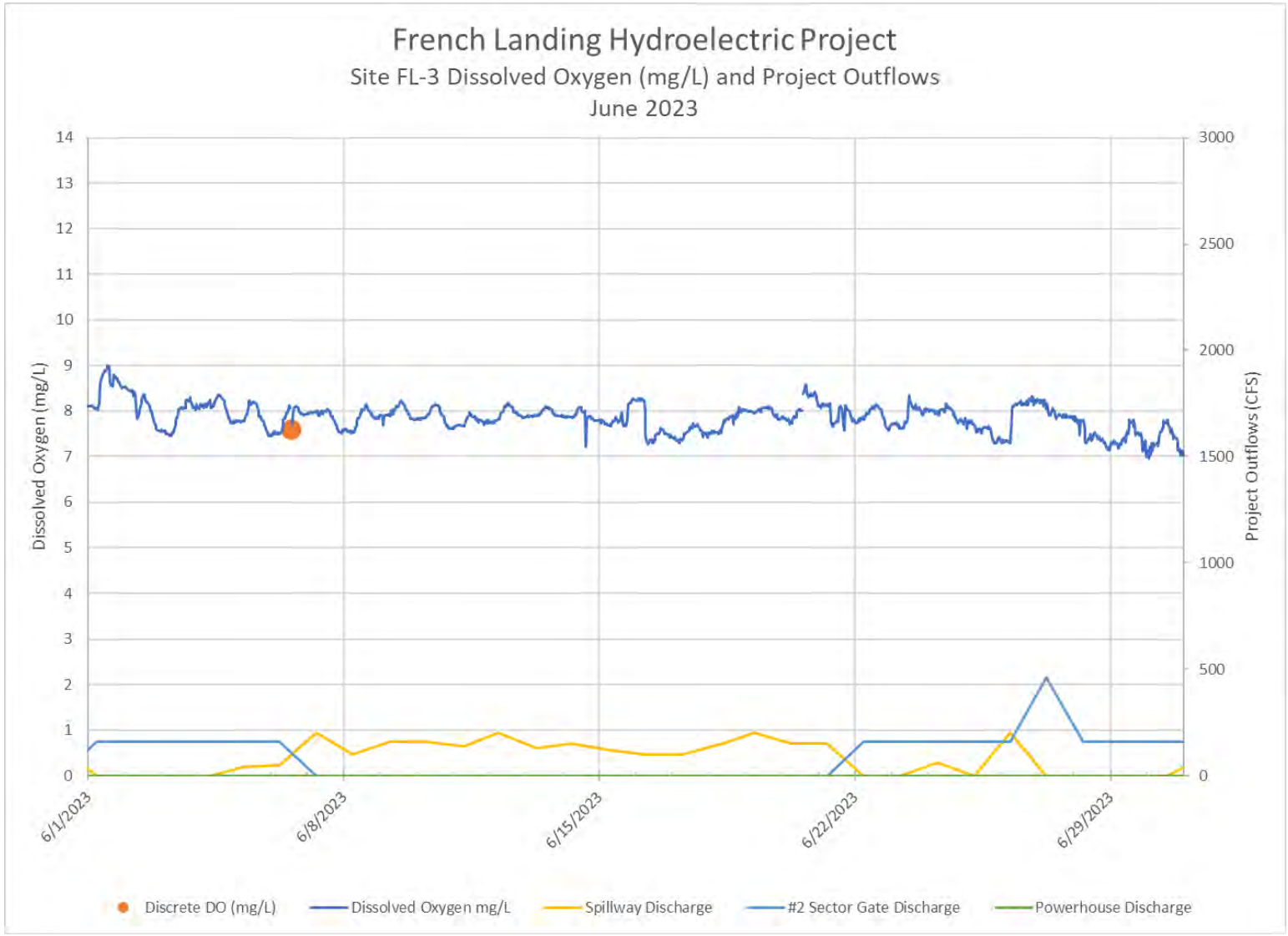


Figure 3.1.2.2.6-3: Site FL-3 DO and Project Outflows, June 2023

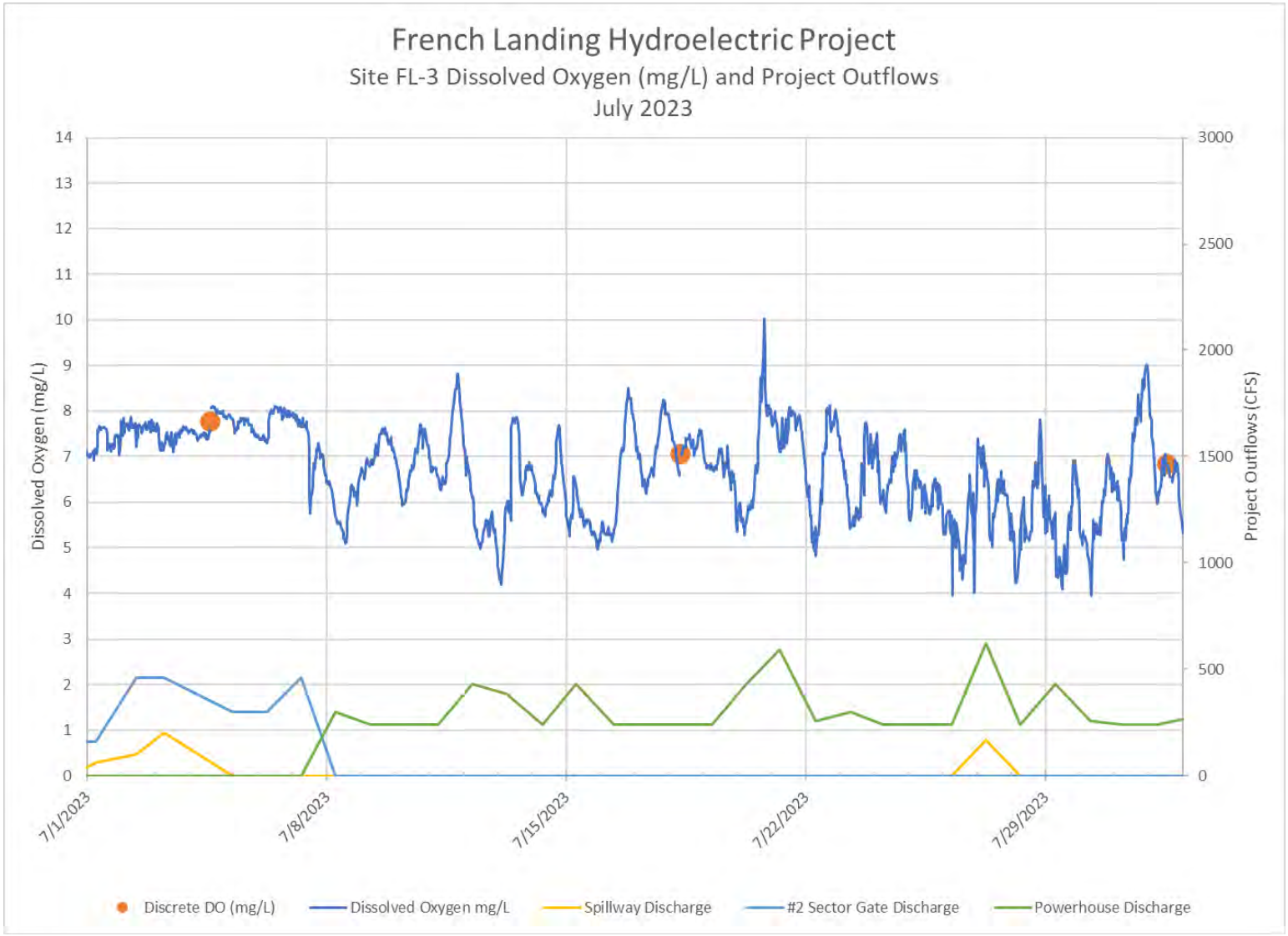


Figure 3.1.2.2.6-4: Site FL-3 DO and Project Outflows, July 2023

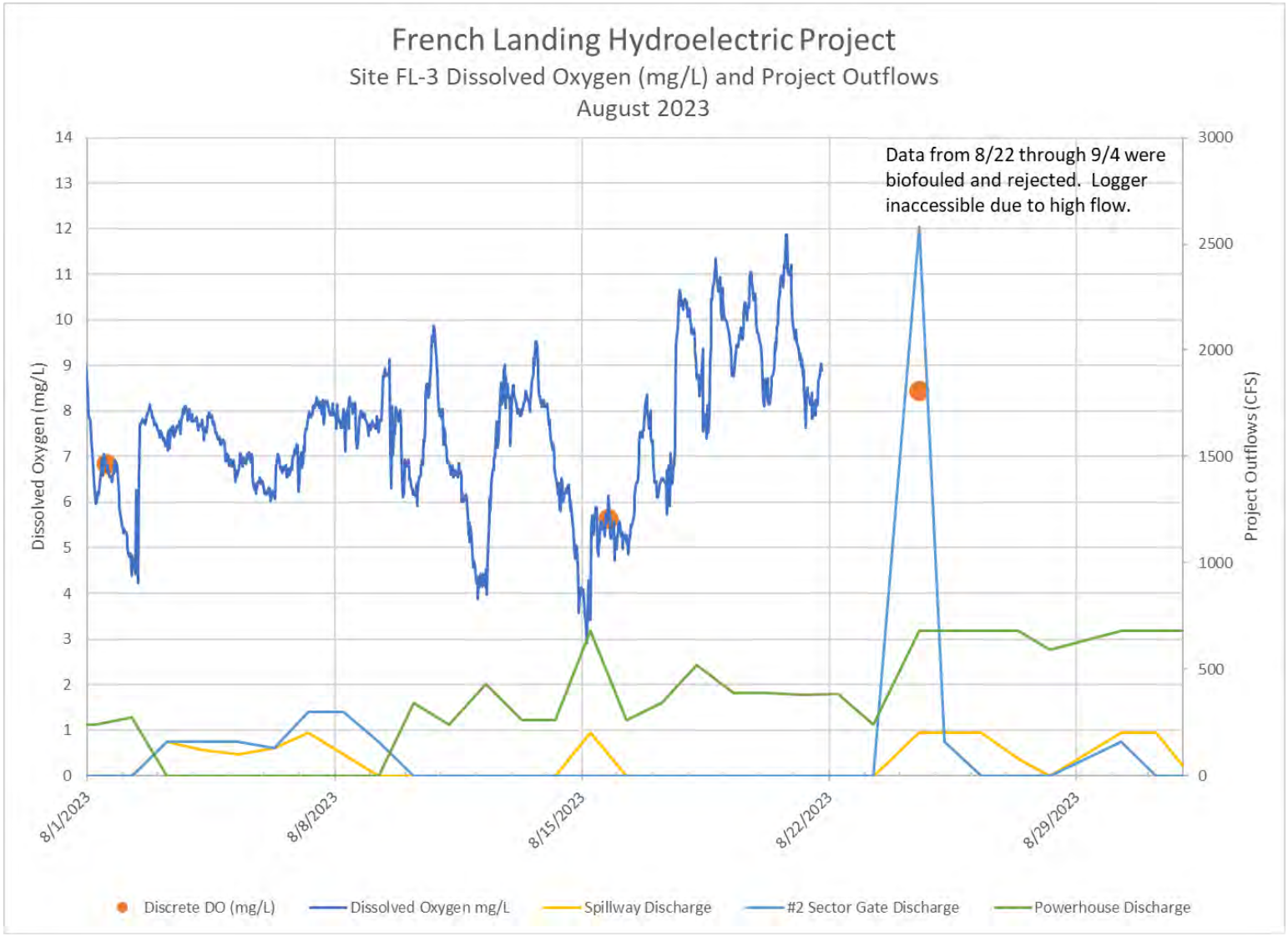


Figure 3.1.2.2.6-5: Site FL-3 DO and Project Outflows, August 2023

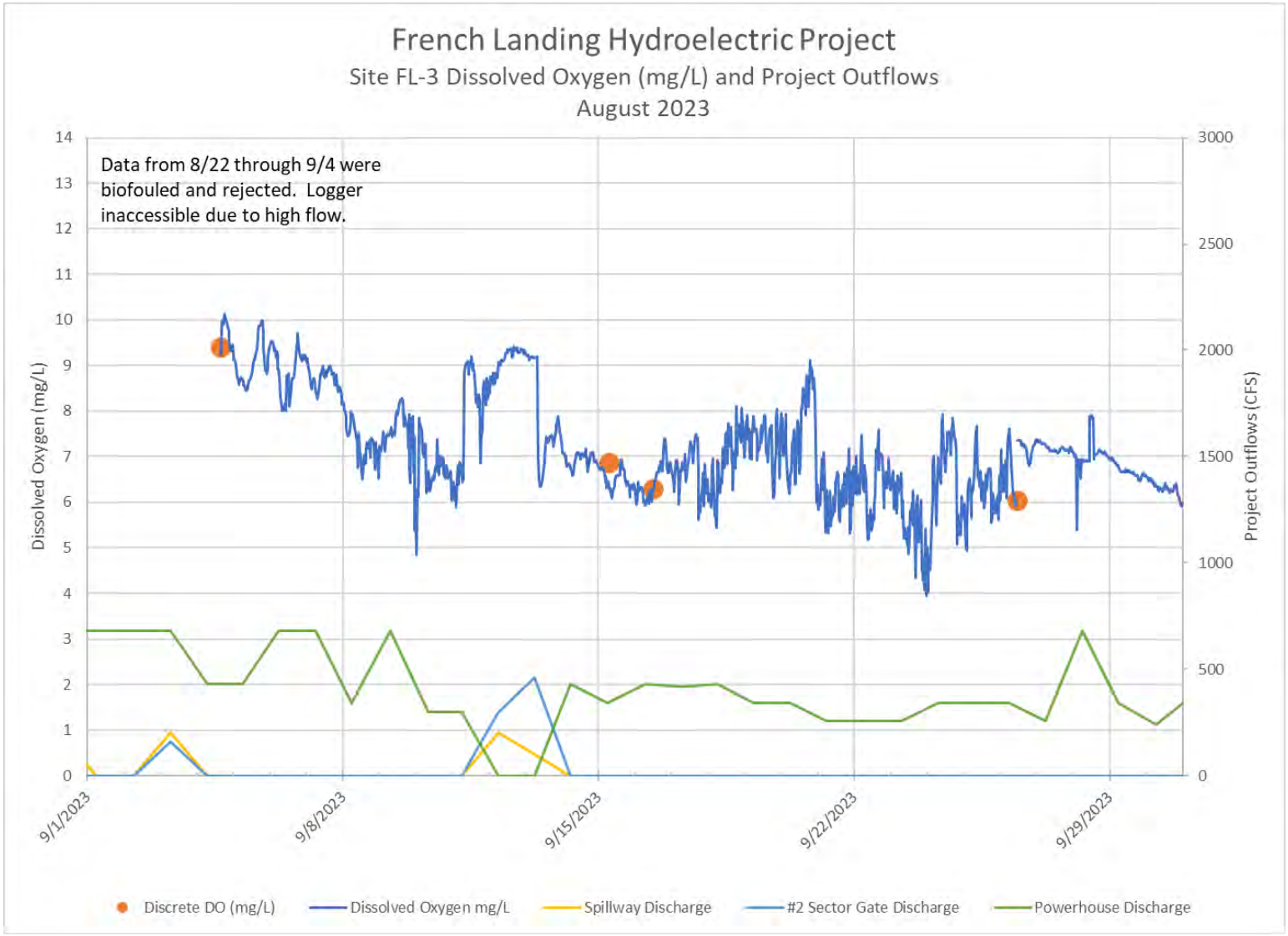
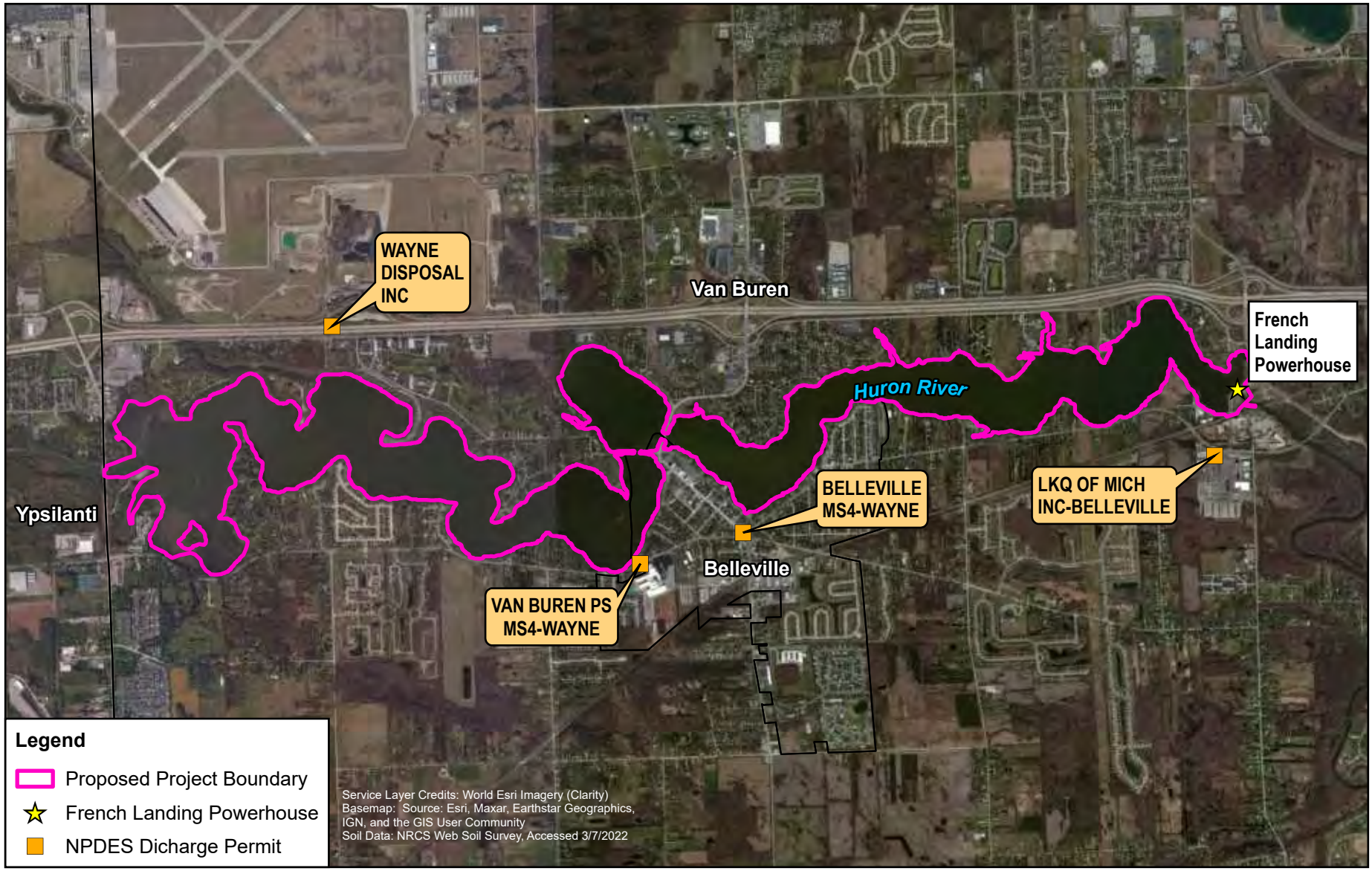


Figure 3.1.2.2.6-6: Site FL-3 DO and Project Outflows, September 2023



N

0 1,750 3,500 7,000 Feet

License Application
French Landing Hydroelectric Project
FERC No. P-9951

Figure 3.1.2.3-1:
NPDES Discharge Permits
in the Project Vicinity

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3.2 Environmental Analysis

3.2.1 Water Quantity

The Project is required by its current FERC license to operate as a run-of-river project, which at all times must act to minimize the fluctuations of the Belleville Lake (the reservoir) water surface elevation. The Project must maintain discharge from the Project so that the flow in the Huron River, as measured immediately downstream from the Project tailrace, approximates the inflow to the Project reservoir. The Licensees are proposing to continue to operate the Project in a run-of-river mode as it has throughout its license. As a result, no adverse impacts to water quantity are anticipated due to Project operation.

3.2.2 Water Quality

FERC's SD2 identified effects of Project operation and maintenance on water quality, including DO and water temperature, upstream and downstream of the Project dam as a potential site-specific resource issue to be addressed in its NEPA analysis. Water quality standards for the Huron River in the vicinity of the Project are defined by the State of Michigan's Part 4 Rules, Water Quality Standards (of Part 31, Water Resources Protection, of Act 451 f 1994). As described in Section 3.1.2.1.2, the river has no additional designations as defined in Michigan Administrative Code R 323.1100 in the Project vicinity. Water quality standards for the Project impoundment and downstream reach indicate waters shall maintain a minimum DO concentration of 5 mg/L, and must maintain water temperatures which vary by month. Table 3.1.2.1.2-1 depicts water quality standards for DO, temperature, and pH.

Results of the 2023 *Water Quality Study* indicate thermal stratification of Project waters occurred in May and June, but did not persist throughout the monitoring period. At no time did the water temperature measured at any study location exceed the monthly maximum temperature limit based on state water quality standards.

The *Water Quality Study* also found the impoundment exhibited DO stratification beginning in late May, with low DO levels observed in deeper layers (at or below elevations at the intake) of the lake through August into early September. DO levels at the bottom layer of the impoundment were found to be below 5 mg/L at each discrete profiling measurement throughout the study period. During the study period, DO was found to improve as it traveled through the Project. DO levels were below 5 mg/L at the inflow monitoring location (FL-1) approximately 19% of the monitoring period, and the impoundment location (FL-2) approximately 25% of the monitoring period. At the downstream monitoring location (FL-3) DO levels were below 5 mg/L only 2.7% of the monitoring period, far less than the inflow location. This would indicate that low DO experienced at Project waters is a result of upstream sources rather than stratification. Notably, large dense aquatic vegetation beds located near the inflow monitoring location may have affected DO upstream of the Project.

DO levels were occasionally below 5 mg/L downstream of the Project during periods of turbine generation. These occasions lasted less than a day at a time and generally occurred during overnight hours. In general, periods of low DO observed downstream of the Project occurred when DO levels were below 5 mg/L in the impoundment and at the inflow location. When the Project was spilling, downstream DO levels were always above the state standard.

Due to the poor water quality upstream of the Project, and the improvement of DO downstream, Project operations do not appear to adversely impact water quality.

3.2.3 Agency Recommended Mitigation

EGLE submitted comments on the French Landing DLA to FERC on February 25, 2025. In their comment letter EGLE noted that throughout the DLA, run-of-river operation is presented as a proxy for the need to mitigate impacts to water quality. They noted that, conversely, the continued operation of the project in run-of-river mode negatively impacts the water quality and exposes those using the impoundment for recreation to frequent cyanobacteria blooms and occasional harmful algal blooms. EGLE also states that while water quality improves downstream of the Project, the improvements are limited to DO and water temperature and come at the cost of water loss to evaporation, exacerbated water quality in the 7-mile-long impoundment from internal and external nutrient loads, and high nutrient concentrations. Finally, EGLE notes that run-of-river operation does not eliminate the need for further mitigation and recommend that the Licensees explicitly acknowledge the negative impacts of continued Project operation on the Huron River and propose mitigation measures to offset these impacts; however, no specific mitigation strategies are recommended.

The Licensees have provided responses to the comments received in Appendix E-1.

3.2.4 Applicant Proposed Mitigation

The Licensees are proposing to continue to operate the Project in a run-of-river mode, which minimizes water surface elevation fluctuations in Belleville Lake and maintains discharge from the Project so that the flow in the Huron River immediately downstream from the tailrace approximates the inflow into the Project reservoir. The Licensees are also proposing to develop an Operations Compliance Monitoring Plan that will describe how they will document compliance with the operational requirements of the license.

3.2.5 Unavoidable Adverse Effects

Dissolved oxygen levels in the impoundment are affected by several non-Project related factors including low DO waters entering Belleville Lake from upstream sources, nutrient loading, and large dense aquatic vegetation beds found throughout the impoundment. None of these factors have a nexus to Project operations but may cause unavoidable adverse effects to water quality. As observed during the *Water Quality Study*, water quality improves as it exits the Project as compared to what enters the impoundment. As a result, continued Project operation is not anticipated to result in unavoidable adverse effects to water resources.

3.3 **Section 401 Water Quality Certification**

Pursuant to 18 C.F.R. § 4.34(b)(5) of the Commission's regulations, the Licensees will apply for a §401 Water Quality Certification within 60 days of the Commission's notification that the Final License Application is ready for environmental analysis.

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4 FISH AND AQUATIC RESOURCES

4.1 Affected Environment

4.1.1 Fish Assemblage

The lower Huron River and impoundments from Barton Pond to Flat Rock Pond received chemical treatment between 1972-1974 in an effort to reduce rough fish (e.g., suckers, carp) and was restocked with sport fish. In 1973 the Project impoundment was treated with rotenone and was restocked, with ongoing stocking of several sport-fish species. The fish assemblage in the Project Area consists of cool and warmwater game and nongame species.

4.1.1.1 Resident Species

Surveys have been conducted in Belleville Lake in 1982, 1988, 1990, 1992, 1999, and 2012. Across these years, 36 species have been collected, consisting of panfish (bluegill, black and white crappie, pumpkinseed, rock bass, yellow perch), large sport fish (largemouth bass, muskellunge, smallmouth bass, tiger muskellunge, walleye, channel catfish, and white bass), large non-sport fish (bowfin, longnose gar, and white sucker), forage fish (brook silverside, emerald shiner, gizzard shad, golden shiner, northern logperch, sand shiner, spotfin shiner, spottail shiner), nonindigenous species (common carp, goldfish, round goby, white perch), and non-sport fish (black bullhead, brown bullhead, green sunfish, hybrid sunfish, johnny darter, northern hog sucker, yellow bullhead) (Table 4.1.1.1-1).

The fish community in Belleville Lake has shifted several times (Table 4.1.1.1-2). Chemical treatments reduced sucker and carp populations in the early 1980s, with sport-fish stocked after treatment. An extended drawdown of the reservoir for dam repairs in 1987-1988 caused further changes in the fish community (Hay-Chmielewski et al. 1995), as seen when comparing the 1992 fish surveys to previous years. Before the drawdown, white perch and gizzard shad had not been collected in Belleville Lake, but in 1992 these two species made up 33% of the fish caught. While black and white crappie were still dominant in this survey and smallmouth and largemouth bass numbers were still good, bluegill, walleye, tiger muskellunge, and channel catfish populations had decreased. To address this, walleye and channel catfish were stocked starting in 1994 and muskellunge starting in 1998 in an attempt to provide a better fishery and to control forage species (see Section 4.1.1.2).

The most recent fish community survey was conducted in May and June of 2012 by the MDNR Fisheries Division as part of the statewide Status and Trends program. A variety of sampling gear was used, including large-mesh fyke nets, a trap net, experimental gill nets, a boomshocker, and a minnow seine. Nets were set for up to four nights in each of the two major lake basins. Three seine halls per basin were conducted during the netting period, and two electroshocking stations per basin were sampled on June 7, 2012. A total of 4,009 fish were caught, consisting of 28 species (Table 4.1.1.1-2). Panfish made up the 68% of the catch by number, gizzard shad 18%, large sport fish 7%, large non-sport fish 3.5%, and the remaining 3.5% as made up of forage fish and other species such as bullhead, hybrid sunfish, round goby, and white perch.

Of the panfish, bluegill were the most abundant, making up 61% of the total catch by number, followed by black crappie at 2.5% of the total catch by number (Table 4.1.1.1-2). Three sportfish species were collected in significant numbers: channel catfish, smallmouth bass, and walleye. The bluegill population was evaluated using the Schneider's Index, which provides a relative measure of the fishery quality on a scale of 1 (poor) to 7 (high). The bluegill population had an index of 4.0, indicating it is "satisfactory" (Braunscheidel 2013). Bluegill catch rates were higher and average length was a half an inch lower in 2012 than the 1999 survey, with a smaller percentage of larger and older fish in the population (Table 4.1.1.1-3). The mean growth index for bluegill was 0.8 inches above the state average, 0.1 inches above for black crappie, and 0.8 inches above for walleye (Table 4.1.1.1-4). Black crappie were historically the most abundant species, and the 2012 survey saw a decrease in growth compared to 1999. Channel catfish mean growth index was 0.6 inches below the state average. Catch rates decreased for this species compared to 1999, but average sizes are larger and age classes from 2-12 were present in 2012 (Braunscheidel 2013).

Surveys conducted downstream of the Project area indicate a similar resident fish community, though several species were only found downstream and were never collected in Belleville Lake surveys (Table 4.1.1.1-1). In addition to resident species, the river downstream of the Project was historically home to large potamodromous[6] fish migrating upstream from Lake Erie to spawn, including lake sturgeon, muskellunge, channel catfish, smallmouth bass, yellow perch, white bass, and walleye. Currently, lake sturgeon do not have access to the river past Flat Rock Dam, as this species does not readily use the denil-type fishway at that dam. In addition, stocked steelhead (*Onchorhynchus mykiss*) have access to the river up to the Project dam, via the Flat Rock Dam fishway, and adults move upstream from Lake Erie between late October and early May. Some adults overwinter in streams before spawning in the spring. Downstream of the Project dam there are fall and winter spawning runs of coho and chinook salmon that pass into the river reaches below the Project via the Flat Rock Dam fishway.

4.1.1.2 Stocking

After rotenone treatment, gamefish were stocked in the impoundment and fisheries for walleye, smallmouth and largemouth bass, tiger muskellunge, bluegill, and white and black crappie were established (Table 4.1.1.2-1). Tiger muskellunge were stocked intermittently from 1979 until 1991, when the stocking program for this species was halted statewide. Pure strain northern muskellunge fall fingerlings were stocked intermittently from 1998 to 2003 in an attempt to re-establish an inland muskellunge fishery. This stocking was halted in 2003 and replaced with Great Lakes strain muskellunge after the discovery that stocked northern muskellunge were moving downstream through the dam and potentially mixing with the Great Lakes strain fish migrating upstream from Lake Erie during spring spawning. Channel catfish were stocked, also intermittently, between 1994-2010 both to provide a fishery and to attempt to control white perch and gizzard shad populations. Walleye have been stocked since 1982, though not annually.

[6] Potamodromous species migrate to spawn, but complete their lifecycle entirely within freshwater.

Downstream of the Project dam, steelhead have been stocked since the early 1980s. Adult steelhead did not have access to the river upstream of Flat Rock Dam until 1996 when a denil fishway was installed at Flat Rock Dam. Stocking below Flat Rock Dam was increased concurrently with fishway installation from 20,000 to 60,000 smolts/year. Surveys in 1999-2000 indicate that the steelhead spring run is 3,000-5,000 adults with as many as 20% passing upstream of Flat Rock Dam (MDNR 2007). Coho and chinook salmon are not stocked in the river, and adults caught in the fishery are likely strays from other tributaries of Lake Erie.

Table 4.1.1.1-1: Fish Assemblage Recorded in Belleville Lake and Downstream of the Project from 1982-2012 with 2012 (Belleville Lake) and 2009 (Oakwoods Metropark) Survey Results

Common Name	Scientific Name	Description	Status in Michigan	Belleville Lake Survey[1]	Downstream Survey[2]
Black Bullhead	*Ameiurus melas*	non-sport	Not Listed	5	0
Black Crappie	*Pomoxis nigromaculatus*	panfish	Not Listed	101	0
Black Redhorse**	*Moxostoma duquesnei*	non-sport	Not Listed	0	0
Blackchin shiner**	*Notropis heterodon*	forage	Not Listed	0	2
Bluegill	*Lepomis macrochirus*	panfish	Not Listed	2461	181
Bluntnose Minnow	*Pimephales notatus*	forage	Not Listed	0	0
Bowfin	*Amia calva*	large non-sport	Not Listed	3	0
Brook Silverside	*Labidesthes sicculus*	forage	Not Listed	21	0
Brown Bullhead	*Ameiurus nebulosus*	non-sport	Not Listed	15	0
Channel Catfish	*Ictalurus punctatus*	large sport	Not Listed	126	1
Common Carp*	*Cyprinus carpio*	large non-sport	Not Listed	65	35
Emerald Shiner	*Notropis atherinoides*	forage	Not Listed	27	0
Gizzard Shad	*Dorosoma cepedianum*	forage	Not Listed	732	0
Golden Redhorse Sucker**	*Moxostoma erythrurum*	non-sport	Not Listed	0	4
Golden Shiner	*Notemigonus crysoleucas*	forage	Not Listed	13	12
Goldfish*	*Carassius auratus*	forage	Not Listed	0	0
Green Sunfish	*Lepomis cyanellus*	non-sport	Not Listed	33	0
Greenside Darter**	*Etheostoma blennioides*	non-sport	Not Listed	0	4
Hybrid Sunfish	*Lepomis sp. x Lepomis sp.*	non-sport	Not Listed	12	0
Johnny Darter	*Etheostoma nigrum*	non-sport	Not Listed	0	0

Common Name	Scientific Name	Description	Status in Michigan	Belleville Lake Survey[1]	Downstream Survey[2]
Largemouth Bass	*Micropterus salmoides*	large sport	Not Listed	5	19
Longnose Gar	*Lepisosteus osseus*	large non-sport	Not Listed	30	0
Muskellunge	*Esox masquinongy*	large sport	Not Listed	0	0
Northern Hog Sucker	*Hypentelium nigricans*	non-sport	Not Listed	0	30
Northern Logperch	*Percina caprodes semifasciata*	forage	Not Listed	14	34
Northern Pike**	*Esox lucius*	large sport	Not Listed	0	2
Orangespotted Sunfish*,**	*Lepomis humilis*	non-sport	Not Listed	0	0
Pumpkinseed	*Lepomis gibbosus*	panfish	Not Listed	61	0
Rock Bass	*Ambloplites rupestris*	panfish	Not Listed	20	0
Round Goby*	*Neogobius melanostomus*	non-sport	Not Listed	36	0
Sand Shiner	*Notropis stramineus*	forage	Not Listed	0	0
Smallmouth Bass	*Micropterus dolomieu*	large sport	Not Listed	81	23
Spotfin Shiner	*Cyprinella spiloptera*	forage	Not Listed	23	39
Spottail Shiner	*Notropis hudsonius*	forage	Not Listed	7	0
Spotted Sucker**	*Minytrema melanops*	non-sport	Not Listed	0	14
Tiger Muskellunge	*Esox lucius x E. masquinongy*	large sport	Not Listed	0	0
Walleye	*Sander vitreus*	large sport	Not Listed	41	1
White Bass	*Morone chrysops*	large sport	Not Listed	12	0
White Crappie	*Pomoxis annularis*	panfish	Not Listed	2	0
White Perch*	*Morone americana*	panfish	Not Listed	1	0

Common Name	Scientific Name	Description	Status in Michigan	Belleville Lake Survey[1]	Downstream Survey[2]
White Sucker	*Catostomus commersonii*	large non-sport	Not Listed	43	3
Yellow Bullhead	*Ameiurus natalis*	non-sport	Not Listed	0	0
Yellow Perch	*Perca flavescens*	panfish	Not Listed	19	0

*Non-indigenous species **Only recorded downstream of the Project Dam
[1]Survey taken in Belleville Lake May through June 2012
[2]Survey taken in Oakwoods Metropark in September 2009
Sources: Braunscheidel 2013; MDNR 2007; MDNR 2009; LHWAG and ADW 2012; Hay-Chmielewski et al. 1995

Table 4.1.1.1-2. Fish Species Collected During Surveys in Belleville Lake

Year	Species	Total # Caught	% of Total Caught	Total Weight (lbs)	% by Weight	Length Range (inch)	Mean Weighted Length (in)	% Legal Size Caught
1982	Bluegill	1856	64.5	459.03	32.5	4-11	7	93
	Black Crappie	565	19.6	155.19	11	6-11	7.9	100
	Pumpkinseed	202	7	40.17	2.8	4-7	6.1	59
	Channel Catfish	86	3	556.5	39.4	10-29	23.9	98
	Walleye	55	1.9	152.84	10.8	13-26	19.4	95
	Smallmouth Bass	42	1.5	18	1.3	6-18	8.6	7
	White Sucker	34	1.2	0	0	14-21	17	100
	White Bass	19	0.7	17.14	1.2	10-13	12.4	100
	Yellow Perch	8	0.3	2.3	0.2	8-9	8.9	100
	White Crappie	5	0.2	2.08	0.1	8-9	9.1	100
	Largemouth Bass	3	0.1	1.43	0.1	5-10	8.8	0
	Goldfish	1	0	0	0	12-12	12.5	100
	Green Sunfish	1	0	0	0	6-6	6.5	100
	Tiger Musky	1	0	6.6	0.5	29-29	29.5	100
1988	Black Crappie	527	28.5	140	8.2	1-11	7.5	82
	Largemouth Bass	413	22.3	26.09	1.5	2-14	4.1	0
	Bluegill	337	18.2	56.05	3.3	1-8	5.1	56
	Common Carp	122	6.6	882.87	51.8	8-37	24.5	100
	White Sucker	112	6.1	191.56	11.2	3-19	16.1	100

Year	Species	Total # Caught	% of Total Caught	Total Weight (lbs)	% by Weight	Length Range (inch)	Mean Weighted Length (in)	% Legal Size Caught
	Green Sunfish	80	4.3	3.95	0.2	1-7	3.7	2
	Channel Catfish	57	3.1	309.54	18.2	9-38	24	96
	Smallmouth Bass	52	2.8	6.17	0.4	2-12	5.1	0
	Pumpkinseed	48	2.6	6.91	0.4	1-7	5.1	50
	Walleye	33	1.8	51.28	3	11-28	16.2	58
	Black Bullhead	20	1.1	12.16	0.7	7-11	10.8	100
	Logperch	19	1	0.18	0	2-3	3	100
	White Bass	11	0.6	4.11	0.2	8-12	9.5	100
	Brown Bullhead	7	0.4	5.58	0.3	10-12	11.9	100
	Yellow Perch	3	0.2	0.36	0	3-7	6.2	67
	Golden Shiner	2	0.1	0.01	0	2-3	3	100
	Hybrid Sunfish	1	0.1	0.12	0	5-5	5.5	0
	Longnose Gar	2	0.1	5.73	0.3	31-31	31.5	100
	Sand Shiner	1	0.1	0	0	2-2	2.5	100
	Yellow Bullhead	1	0.1	0.9	0.1	12-12	12.5	100
1990	White Crappie	1732	26.1	0	0	5-10	7.3	79
	Black Crappie	1517	22.9	295.91	18	3-10	7.1	59
	White Perch	1068	16.1	178.23	10.8	1-8	6.8	76
	Bluegill	613	9.3	89.52	5.4	1-8	5.8	46

Year	Species	Total # Caught	% of Total Caught	Total Weight (lbs)	% by Weight	Length Range (inch)	Mean Weighted Length (in)	% Legal Size Caught
	Brown Bullhead	326	4.9	72.21	4.4	5-12	7.6	86
	White Sucker	307	4.6	351.62	21.4	2-19	13.8	100
	Gizzard Shad	305	4.6	21.14	1.3	2-13	5.4	100
	Black Bullhead	279	4.2	62.92	3.8	6-12	7.6	84
	Common Carp	95	1.4	416.07	25.3	13-30	20.1	100
	Pumpkinseed	91	1.4	12.27	0.7	2-6	5.5	12
	Smallmouth Bass	58	0.9	47.03	2.9	2-19	9.8	28
	Golden Shiner	51	0.8	3.24	0.2	2-8	5.4	100
	Green Sunfish	30	0.5	1.94	0.1	3-5	4.4	0
	Largemouth Bass	35	0.5	17.07	1	2-16	7.9	9
	Yellow Perch	34	0.5	4.46	0.3	5-8	6.8	32
	Walleye	28	0.4	51.19	3.1	6-26	16.5	64
	Yellow Bullhead	19	0.3	5.26	0.3	5-12	8	79
	Channel Catfish	13	0.2	10.32	0.6	7-24	11	15
	Logperch	13	0.2	0.23	0	2-4	3.7	100
	Bluntnose Minnow	2	0	0.03	0	2-3	3	100
	Bowfin	1	0	2.64	0.2	19-19	19.5	100

Year	Species	Total # Caught	% of Total Caught	Total Weight (lbs)	% by Weight	Length Range (inch)	Mean Weighted Length (in)	% Legal Size Caught
	Brook Silverside	2	0	0	0	2-3	3	100
	Hybrid Sunfish	1	0	0.2	0	6-6	6.5	100
	Johnny Darter	2	0	0.01	0	2-2	2.5	100
	Muskellunge	1	0	0.33	0	12-12	12.5	100
	Spottail Shiner	2	0	0.06	0	4-4	4.5	100
1992	Black Crappie	1027	27.2	297.4	24.3	4-10	8	93
	White Perch	741	19.6	159.19	13	4-10	7	45
	White Crappie	672	17.8	140.3	11.5	3-12	7.8	52
	Gizzard Shad	361	9.6	133.55	10.9	7-14	10.3	100
	Bluegill	354	9.4	73.95	6	1-8	6.2	65
	Brown Bullhead	316	8.4	105.9	8.7	5-11	8.8	99
	White Sucker	196	5.2	219.38	17.9	12-16	14.1	100
	Pumpkinseed	27	0.7	5.73	0.5	3-6	6	59
	Bluntnose Minnow	23	0.6	0.08	0	1-2	2	100
	Black Bullhead	15	0.4	6.44	0.5	2-12	9.4	93
	Green Sunfish	12	0.3	1.77	0.1	4-6	5.8	50
	Walleye	11	0.3	48.3	3.9	17-29	22.1	100
	Bowfin	4	0.1	18.35	1.5	21-27	23.2	100

Year	Species	Total # Caught	% of Total Caught	Total Weight (lbs)	% by Weight	Length Range (inch)	Mean Weighted Length (in)	% Legal Size Caught
	Channel Catfish	2	0.1	6.7	0.5	18-21	20	100
	Emerald Shiner	2	0.1	0.01	0	2-2	2.5	100
	Golden Shiner	4	0.1	0.23	0	2-8	4.8	100
	Hybrid Sunfish	2	0.1	0.18	0	4-5	5	0
	White Bass	2	0.1	1.4	0.1	7-12	10	100
	Largemouth Bass	1	0	3.3	0.3	16-16	16.5	100
	Smallmouth Bass	1	0	1.1	0.1	12-12	12.5	0
	Tiger Musky	1	0	0.4	0	12-12	12.5	100
	Yellow Perch	1	0	0.17	0	7-7	7.5	100
1997	White Sucker	422	31.3	492.62	24.1	11-16	14.3	100
	Black Bullhead	201	14.9	131.73	6.5	8-13	11.1	100
	Black Crappie	170	12.6	81.9	4	7-12	9.4	100
	Walleye	154	11.4	222.09	10.9	8-24	15.9	53
	Common Carp	144	10.7	697.24	34.2	12-31	21.5	100
	Channel Catfish	92	6.8	341.66	16.7	11-32	21.1	99
	White Bass	36	2.7	19.41	1	6-13	10.6	97
	Yellow Perch	37	2.7	8.09	0.4	5-10	7.9	89
	Bluegill	23	1.7	5.34	0.3	4-8	6.8	74

Year	Species	Total # Caught	% of Total Caught	Total Weight (lbs)	% by Weight	Length Range (inch)	Mean Weighted Length (in)	% Legal Size Caught
	Gizzard Shad	17	1.3	5.51	0.3	9-101	9.6	100
	Pumpkinseed	15	1.1	3.33	0.2	5-7	6.4	87
	Brown Bullhead	12	0.9	6.04	0.3	8-12	10.1	100
	Smallmouth Bass	11	0.8	16.14	0.8	12-16	14	27
	White Crappie	10	0.7	4.99	0.2	8-11	10.2	100
	Green Sunfish	1	0.1	0.12	0	5-5	5.5	0
	Largemouth Bass	1	0.1	1.95	0.1	15-15	15.5	100
	Northern Hog Sucker	1	0.1	0.79	0	12-12	12.5	100
	Rock Bass	1	0.1	0.46	0	8-8	8.5	100
	Yellow Bullhead	2	0.1	1.45	0.1	10-12	11.5	100
1999	Channel Catfish	429	32.4	1120.07	40.8	8-31	19.3	95
	Common Carp	194	14.6	1147.62	41.8	9-35	22.9	100
	Bluegill	162	12.2	40.91	1.5	3-22	6.4	59
	White Sucker	139	10.5	162.76	5.9	6-20	14.2	100
	Gizzard Shad	103	7.8	65.45	2.4	4-15	11.6	100
	White Bass	104	7.8	37.34	1.4	7-14	9.2	100
	Walleye	60	4.5	101.57	3.7	9-30	16.1	58
	Black Crappie	35	2.6	15.75	0.6	4-12	8.7	77
	Muskellunge	25	1.9	14.22	0.5	11-16	14.5	100

Year	Species	Total # Caught	% of Total Caught	Total Weight (lbs)	% by Weight	Length Range (inch)	Mean Weighted Length (in)	% Legal Size Caught
	Black Bullhead	15	1.1	9.63	0.4	9-12	11	100
	Brown Bullhead	11	0.8	5.59	0.2	8-11	10.1	100
	Pumpkinseed	10	0.8	1.18	0	4-7	5.1	10
	White Crappie	11	0.8	0	0	6-13	10.7	91
	Green Sunfish	6	0.5	0.99	0	4-7	6	50
	Longnose Gar	7	0.5	15.39	0.6	10-37	25.5	100
	Yellow Perch	7	0.5	1.5	0.1	5-10	7.5	43
	Smallmouth Bass	4	0.3	1.99	0.1	7-11	9.5	0
	Yellow Bullhead	2	0.2	1.12	0	9-11	10.5	100
	Hybrid Sunfish	1	0.1	0.32	0	7-7	7.5	100
	Largemouth Bass	1	0.1	0.2	0	7-7	7.5	0
2012	Bluegill	2461	61.4	334.61	19.1	1-8	5.5	38
	Gizzard Shad	732	18.3	290.33	16.6	4-16	10.1	100
	Channel Catfish	126	3.1	380.55	21.7	7-27	20.2	96
	Black Crappie	101	2.5	42.81	2.4	3-13	8.8	87
	Smallmouth Bass	81	2	66.68	3.8	0-17	10.8	16
	Common Carp	65	1.6	389.77	22.2	15-28	23.1	100

Year	Species	Total # Caught	% of Total Caught	Total Weight (lbs)	% by Weight	Length Range (inch)	Mean Weighted Length (in)	% Legal Size Caught
	Pumpkinseed	61	1.5	11.48	0.7	2-7	5.8	52
	White Sucker	43	1.1	41.37	2.4	6-15	13.2	100
	Walleye	41	1	70.75	4	6-25	16.6	73
	Round Goby	36	0.9	0	0	1-5	2.6	100
	Green Sunfish	33	0.8	4.73	0.3	1-7	5.6	39
	Emerald Shiner	27	0.7	0.25	0	2-4	3.5	100
	Longnose Gar	30	0.7	70.65	4	24-36	29.4	100
	Spotfin Shiner	23	0.6	0.34	0	2-4	3.5	100
	Brook Silverside	21	0.5	0	0	3-4	3.5	100
	Rock Bass	20	0.5	6.45	0.4	2-10	6.8	70
	Yellow Perch	19	0.5	3.49	0.2	5-9	7.4	58
	Brown Bullhead	15	0.4	6.99	0.4	6-12	9.6	87
	Golden Shiner	13	0.3	2.07	0.1	6-9	7.8	100
	Hybrid Sunfish	12	0.3	1.71	0.1	2-7	5.5	33
	Logperch	14	0.3	0.13	0	2-3	3.1	100
	White Bass	12	0.3	6.34	0.4	6-16	9.9	92
	Spottail Shiner	7	0.2	0.07	0	2-3	3.4	100
	Black Bullhead	5	0.1	3.85	0.2	7-13	11.5	100
	Bowfin	3	0.1	10.6	0.6	20-22	21.5	100

Year	Species	Total # Caught	% of Total Caught	Total Weight (lbs)	% by Weight	Length Range (inch)	Mean Weighted Length (in)	% Legal Size Caught
	Largemouth Bass	5	0.1	4.49	0.3	9-15	11.5	20
	White Crappie	2	0	1.26	0.1	10-11	11	100
	White Perch	1	0	0.43	0	9-9	9.5	100

Source: MDNR

Table 4.1.1.1-3. Age Classes and Weighted Mean Length of Fish Measured from Surveys Conducted in 1997, 1999, and 2012

Species	Age Class	1997		1999		2012		State Average Length (in)
		Weighted Mean Length (in)	Number Aged	Weighted Mean Length (in)	Number Aged	Weighted Mean Length (in)	Number Aged	
Black Crappie	1	-	-	4.3	3	3.9	8	4.2
	2	7.88	18	7.65	20	6.6	4	6
	3	9.34	25	9.65	2	7.49	10	7.5
	4	10.13	15	10.1	2	9.1	17	8.6
	5	11.15	9	11.89	7	9.64	12	9.4
	6	11.55	2	12.3	1	11.42	4	10.2
	7	12.3	1	-	-	12.03	3	10.8
	9	-	-	-	-	13.1	1	11.9
Bluegill	1	4.5	1	-	-	2.27	15	1.8
	2	6.13	10	4.81	6	4.43	21	3.8
	3	7.4	4	6.06	25	5.85	18	5
	4	7.63	3	6.84	10	7.04	9	5.9
	5	7.03	2	8.25	2	7.67	3	6.7
	6	8.5	1	8.13	6	8.2	6	7.3
	7	-	-	8.1	1	8.33	3	7.8
	8	-	-	8.3	1	8.2	1	8.2
Channel Catfish	2	13.7	4	10.82	8	8	3	11.2
	3	14.55	4	13.24	5	13.04	10	13.6
	4	20.8	1	18.91	6	14.43	8	15.8

Species	Age Class	1997		1999		2012		State Average Length (in)
		Weighted Mean Length (in)	Number Aged	Weighted Mean Length (in)	Number Aged	Weighted Mean Length (in)	Number Aged	
	5	-	-	18.69	23	15.73	3	17.7
	6	19.8	1	18.51	2	18.54	24	19.3
	7	22	1	-	-	19.48	4	20.6
	8	24.89	2	22.72	7	21.92	8	22
	9	19.52	2	26.67	3	23.11	32	23.2
	10	-	-	25.39	2	22.97	4	23.8
	11	-	-	25.06	6	24.51	4	-
	12	-	-	22.49	4	24.49	10	-
Largemouth Bass	3	-	-	7.9	1	9.5	3	-
	5	-	-	-	-	13.8	1	-
	6	15.7	1	-	-	-	-	-
	7	-	-	-	-	15.3	1	-
Pumpkinseed	1	-	-	-	-	2.96	7	-
	2	6.1	4	4.9	7	4.89	8	-
	3	6.5	6	5.63	3	5.51	8	-
	4	6.6	1	-	-	6.29	10	-
	5	-	-	-	-	6.86	9	-
	6	-	-	-	-	7.17	3	-
	7	-	-	-	-	7.3	1	-
Smallmouth Bass	1	-	-	-	-	3.79	7	3.8
	2	-	-	7.35	2	6.32	5	7.5

Species	Age Class	1997		1999		2012		State Average Length (in)
		Weighted Mean Length (in)	Number Aged	Weighted Mean Length (in)	Number Aged	Weighted Mean Length (in)	Number Aged	
	3	12	1			9.89	23	10.8
	4	13.2	8	11.2	1	12.21	22	12.6
	5	14.6	2	11.2	1	13.81	15	14.4
	6	16.6	1	-	-	15.05	4	15.3
	7	-	-	-	-	16.9	1	16.3
	9	-	-	-	-	17.3	1	18.1
Walleye	1	9.18	4	10.43	4	9.93	3	7.1
	2	13.93	74	11.53	16	14.1	7	10.4
	3	16.84	40	15.84	14	15.37	3	13.9
	4	19.53	31	17.99	8	15.81	6	15.8
	5	17.9	1	20.99	10	17.25	5	17.6
	6	-	-	21.85	2	18.33	14	19.2
	7	-	-	-	-	24.3	1	20.6
	8	23.65	2	-	-	-	-	23.1
	10	-	-	-	-	25.3	2	-
	11	-	-	23.9	1	-	-	-
White Bass	1	7.43	6	-	-	-	-	-
	2	11.25	20	-	-	-	-	-
	3	12.7	1	-	-	-	-	-
	4	13.5	1	-	-	-	-	-
	2	-	-	8.47	4	-	-	-

Species	Age Class	1997		1999		2012		State Average Length (in)
		Weighted Mean Length (in)	Number Aged	Weighted Mean Length (in)	Number Aged	Weighted Mean Length (in)	Number Aged	
White Crappie	3	10.19	8	8.85	2	-	-	-
	4	11.4	1	12.1	1	-	-	-
	5	-	-	12.4	1	10.8	2	-
	6	-	-	12.6	2	-	-	-
	10	-	-	13.3	1	-	-	-
Yellow Perch	2	7.27	20	6.15	2	-	-	-
	3	8.44	12	8.6	1	6.03	6	-
	4	8.97	5	10.2	1	7.47	6	-
	5	-	-	9.8	1	8.8	5	-
	6	-	-	-	-	9.5	1	-

Source: MDNR

Table 4.1.1.1-4. Mean Growth Index from Belleville Lake Surveys from 1992-2012 (Trap/Fyke Nets Only) for Selected Species

Species	1992	1999	2012
Bluegill	+1.1	+1.0	+0.8
Black Crappie	+0.3	+2.1	+0.1
Channel Catfish	-	+0.7	-0.6
Walleye	-	+2.0	+0.8

Source: Braunscheidel 2013

Table 4.1.1.2-1: Fish Stocked in Belleville Lake From 1979-2021

Species	Strain	Date Stocked	Number	Average Length (in)
Tiger muskellunge	Hybrid	7/13/1979	2500	5.2
Tiger muskellunge	Hybrid	8/11/1980	2500	6.65
Tiger muskellunge	Hybrid	8/11/1981	1500	6.34
Walleye	Muskegon	5/5/1982	225000	0.31
Walleye	New York	5/5/1982	2600000	0.31
Tiger muskellunge	Hybrid	8/4/1983	1000	7.4
Tiger muskellunge	Hybrid	8/9/1983	1500	7.64
Tiger muskellunge	Hybrid	9/25/1985	1750	10.83
Tiger muskellunge	Hybrid	10/2/1987	2700	10.39
Fathead minnow		11/1/1988	195516	2.2
Walleye	Muskegon	11/1/1988	3703	2.8
Tiger muskellunge	Hybrid	9/19/1989	3600	9.49
Tiger muskellunge	Hybrid	10/4/1991	3600	8.78
Walleye	Muskegon	9/22/1993	1975	6.57
Walleye	Muskegon	10/26/1993	10764	3.78
Walleye	Muskegon	6/23/1994	16298	2.28
Walleye	Muskegon	6/23/1994	30407	2.4
Channel catfish		10/13/1994	26000	3.82
Walleye	Muskegon	10/13/1994	758	8.19
Walleye	Muskegon	6/20/1995	37999	2.09
Walleye	Muskegon	6/19/1996	127657	1.46
Channel catfish		10/8/1997	8000	8.07
Walleye	Muskegon	6/2/1998	11677	1.54
Walleye	Muskegon	6/2/1998	25465	1.77
Walleye	Muskegon	6/3/1998	19760	1.54
Walleye	Muskegon	6/3/1998	5066	1.77
Channel catfish		10/1/1998	4549	9.45
Muskellunge	Northern	10/7/1998	2531	11.89
Muskellunge	Northern	11/12/1998	1740	9.45
Walleye	Tittabawassee	5/31/2000	9398	1.5
Walleye	Tittabawassee	6/1/2000	28943	1.5
Walleye	Tittabawassee	6/6/2000	20907	1.81
Muskellunge	Northern	9/28/2000	1900	10.59
Channel catfish		9/25/2001	9906	8.98
Walleye	Tittabawassee	6/18/2002	64517	1.6
Muskellunge	Northern	10/17/2003	459	11.31

Species	Strain	Date Stocked	Number	Average Length (in)
Walleye	Tittabawassee	6/9/2004	78097	1.08
Channel catfish		10/6/2004	8017	3.54
Walleye	Tittabawassee	6/13/2006	78071	1.1
Walleye	Muskegon	6/17/2009	69879	1.3
Walleye	Muskegon	6/15/2010	63991	1.83
Channel catfish		9/22/2010	6024	7.95
Muskellunge	Great Lakes	11/1/2012	2500	9.48
Walleye	Muskegon	6/4/2013	28655	1.45
Walleye	Muskegon	6/4/2013	29301	1.1
Muskellunge	Great Lakes	11/6/2014	1905	8.7
Walleye	Muskegon	6/9/2015	69368	1.3
Muskellunge	Great Lakes	10/28/2016	1437	9.41
Muskellunge	Great Lakes	11/4/2016	468	7.48
Walleye	Muskegon	5/31/2017	26931	1.05
Walleye	Muskegon	5/31/2017	14234	1.29
Walleye	Muskegon	5/31/2017	40031	0.94
Muskellunge	Great Lakes	10/31/2018	1905	9.96
Walleye	Muskegon	6/22/2021	39942	1.57
Muskellunge	Great Lakes	11/2/2021	1906	8.78

Source: MDNR 2022a

4.1.2 Fisheries and Habitats

Fisheries within the Project area are limited to recreational fishing. Belleville Lake is managed as a cool and warmwater fishery for species such as bluegill, smallmouth bass, largemouth bass, white bass, muskellunge, and walleye. Within Belleville Lake, there are public boat launches on the eastern and western basins, and a private marina in the eastern basin. Shore fishing occurs at both public boat launches, and the Project recreation facility French Landing Park, which has a fishing pier on the eastern end of the lake near the Project dam and tailrace fishing immediately downstream of the powerhouse (Braunscheidel 2013). The river downstream from the Project area is managed as a seasonal coldwater fishery, with a focus on steelhead trout stocked in the river as juveniles and fished as adults returning from Lake Erie. Other fisheries include seasonal runs of coho and chinook salmon from Lake Erie and resident non-migratory fish species. The lower river runs through three metroparks and two cities (Flat Rock and Rockwood) before discharging into Lake Erie at the Pointe Mouillee State Game Area. The metroparks provide many access opportunities for anglers between the Project dam and Flat Rock Dam. Downstream of Flat Rock Dam, the river has more limited shore fishing access and has been stocked with steelhead since the early 1980s. The denil fishway built at Flat Rock Dam in 1996 was intended to allow steelhead and other migratory fish to move further upstream to areas with better public access. While the fishway passes salmonids, it is too small to pass lake sturgeon.

The Project currently operates as run-of-river, which is intended to minimize lake level fluctuations as well as those in the river downstream. During the previous license application, the water quality certification stipulated run-of-river operation for the protection of aquatic organisms, habitat availability, and water quality in the Huron River and in Belleville Lake. As rapid reductions in flow downstream of the Project can reduce available spawning habitat, desiccate eggs, and strand fish, the previous license stated that any planned flow reductions would be coordinated with MDNR to avoid critical spawning periods. Spawning periods for species spawning in riverine areas (i.e., white sucker, channel catfish, and white bass) include April-July and for species spawning in backwater areas (i.e., smallmouth bass, bluegill, and black crappie) include May – July.

There is no Essential Fish Habitat identified in the Project area (John Buszkiewicz, MDNR, Personal Communication).

4.1.2.1 Impoundment (Belleville Lake)

The Project impoundment is 1,270 acres in area and at its maximum pool elevation of 651.5 feet is approximately 7 miles in length. The western extent of the impoundment is approximately 1 mile below the Ford Lake dam. The impoundment is divided into two major basins by Belleville Road. The western basin (upstream of the road) has a maximum depth of 20 feet, but is generally 10 feet deep or less. This basin has more stumps and debris than the eastern basin, which is downstream of the bridge and has a maximum depth of 30 feet. The shoreline around both basins is heavily developed, which has likely led to degradation of fish habitat. Both the *Botanical*

Resources Survey and *Freshwater Mussel Habitat Assessment and Survey* found residential and commercial development with erosion preventative structures such as seawalls and riprap limit the amount of available habitat along the shoreline. In addition, a shoreline habitat survey conducted in 2012 indicated that the amount of submerged woody habitat available for fish nearshore was low in both basins (Braunscheidel 2013).

Limnological samples collected on September 13, 2012 indicated that both the eastern and western basin had dissolved oxygen levels that dropped below 4.0 parts per million (ppm) by 15-16 feet of depth. Temperatures were slightly cooler in the western basin at the surface and bottom (73.4 and 72.9˚F, respectively) than the eastern basin at the surface and bottom (75.8 and 73.2˚F, respectively).

Willow Run is the only major tributary in the Project area, entering Belleville Lake approximately 5.5 miles upstream of the Project Dam. This tributary has a drainage area of 6.3 square miles and does not support large populations of sport fish (Hay-Chmielewski et al. 1995). A manufacturing plant was built in 1941 along this tributary upstream approximately two miles north of Belleville Lake. The facility was demolished in 2013-2014, and contaminated sediments were removed from the creek.

Fish habitat in the impoundment is maintained by Project operations. Fluctuations in water level are minimized by run-of-river operations for the protection of aquatic habitat.

4.1.2.2 Downstream

The outlet channel consists of a short section downstream of the Project which is part of the Huron River and is approximately 108 feet long with a variable width. On either side of the powerhouse are two 33-foot wide, 12-foot deep gated wasteways. Cross-section data collected by USGS or MDNR from below the Project Dam show a channel width of 88.5 ft at 810 cfs and 88 ft at 129 cfs. This is narrower at a higher flow and wider at a lower flow than expected, likely due to erosion-resistant clay banks that cause discharge to downcut the substrate and lower the channel (Hay-Chmielewski et al. 1995). Cross-section data was also used to calculated hydraulic diversity, which identifies the diversity of hydraulic conditions in randomly chosen portions of a cross-section. This diversity index indicated a complex channel at the cross-section, which is generally indicative of better habitat for aquatic organisms (Hay-Chmielewski et al. 1995).

The river below the Project area flows approximately 26 miles before discharging into Lake Erie at the Pointe Mouillee State Game Area approximately three miles south of the mouth of the Detroit River. Directly below the Project dam, the river has some gradient with gravel riffles and deep pools, and becomes flatter and deeper further downstream. The lower river has average annual flows of approximately 600 cfs. The only significant dam between Belleville Lake and Lake Erie is Flat Rock Dam, located approximately 16 miles downstream of the Project. Flat Rock Dam has a denil-style fishway installed to allow fish species to move upstream from Lake Erie, but is primarily effective for passing salmonids.

The Huron River from Ann Arbor, located approximately 22 miles upstream of the Project, to the mouth has historically been negatively affected by pollution and high turbidity, though the river has some natural turbidity due to soft sediments where it flows through glacial plains. Though the fish community found in the reach between the Project and the mouth of the river is considered fairly well-balanced (Table 4.1.1.1-1; LHWAG and ADW 2012), this section has the characteristics of a second quality warmwater fishery with warmwater fish that are appreciably limited by turbidity, competition, lack of cover, and habitat (Hay-Chmielewski et al. 1995). This section of the river does not have a good fishery for resident species, but does have a seasonal coldwater fishery for fish migrating into the river from Lake Erie for spawning. Walleye spawning runs were historically important in the river section around Flat Rock, but habitat loss has led to a reduction in the size of the run (Hay-Chmielewski et al. 1995).

Run-of-river operation of this Project is intended to minimize water level fluctuations in the river downstream, and this operation would not be expected to have substantial impacts on downstream aquatic habitat.

4.1.3 Fish Passage

There is currently no upstream fish passage at the Project dam, though an abandoned upstream fish ladder was in place prior to the current Project. During the initial licensing, it was determined by resource agencies that the Project Dam was not targeted for fish passage as Belleville Lake is managed for cool and warmwater fish, and the Huron River downstream from the Project has historically focused on migratory coldwater species (specifically steelhead) and non-migratory resident fish. There is no formal downstream passage at the Project Dam. The maximum velocity at the intake estimated in the previous license application was 2.5 feet per second (ft/s) at maximum generation flow. Trashrack spacing for the intake is 2 inches.

4.1.4 Fisheries Studies Regarding Project Effects

In addition to the fish community and creel surveys conducted by MDNR and described above, several studies were conducted by the Licensees regarding entrainment as summarized below.

The 1987 license application states that the proposed run-of-river operation would have an intake velocity at the trashracks of approximately 2.5 feet per second, higher than the maximum velocity recommended at the time by the United States Fish and Wildlife Service (USFWS) of 0.5 feet per second. A study was conducted in 1989-1990 to estimate adult and juvenile entrainment at the Project (Bohr 1990). The discharge from the unit was sampled using two equal-sized ¼-inch bar nets attached to brackets mounted on stop-log grooves in the tailrace. Each net sampled half of the discharge coming out of the unit. Starting in 1989, the net was set for a 72-hour period every two weeks from late July through October, one 48-hour period in November, one 72-hour period in February, and a 72-hour period every two weeks from May through mid-July. Day and night catches were analyzed separately. Controlled fish passage experiments were also conducted during eight (8) sample periods over the 12 months of the study by tagging and releasing fish into the turbine intake to be collected in the nets and examined for mortality and internal damage. Retrieved fish were held for 72 hours to assess delayed mortality. Larval fish were sampled using a ½ m plankton net with 363 micron mesh towed directly in front of the trash racks in areas of strong current. Tows were conducted every 4-6 hours over a 72-hour period and taken bi-weekly from late April through mid-August of 1989. Samples were identified and the larval density was calculated, then multiplied by the discharge for that period to calculate the total number of larvae entrained.

Adult entrainment was monitored for a total of 742.3 hours, with 61,349 total fish captured. Samples were dominated by black crappie, bluegill, pumpkinseed, sunfish, and hybridized sunfish (Bohr 1990). Total fish entrainment was estimated at approximately 1,600,000 fish annually, the overwhelming majority of which are small (juvenile) black crappie. Turbine mortality estimates based on observed injuries in captured fish was a small percentage, but mortality estimated from controlled fish passage experiments was higher. A second entrainment study was required by FERC and conducted in 1992. Following this study, state and federal resource agencies requested mitigation measures for downstream fish passage, monetary compensation of fish entrainment

losses, or an additional study. In 1998, FERC issued a determination stating that the Project entrains a large number of fish from the reservoir and that this entrainment results in a mortality of a small percentage of these fish, likely between 2.5-9.6% based on study results. FERC stated that this range of mortality rates is consistent with observations at similar projects. FERC's final order determined that because of the low mortality rate and fish species and sizes involved (small black crappie, bluegill, and pumpkinseed), it is unlikely that the Project adversely impacts fish populations, and no operational changes or mitigation measures were necessary. As no major structural changes have occurred at the Project since these studies were conducted, it is likely that current effects of entrainment on fisheries resources are consistent with the study results and the determination issued by FERC.

4.1.5 Fisheries Management Plans

As the Project impoundment received chemical treatment in the early 1970s, fisheries management has more recently focused on sport-fish species and providing opportunities for recreational fishing. Periodic surveys are conducted in the lake to monitor fish populations, and stocking is adjusted as needed. The 2012 fish community survey indicated that the bluegill fishery was declining in quality, and so the stocking program for channel catfish was halted in an attempt to reduce predation rates on bluegill.

4.1.6 Amphibian and Aquatic Reptile Species

Distribution maps are available for amphibians and aquatic reptiles on the county scale. Phillips (2016) provided updated distribution maps of Michigan herpetofauna using known ranges, published literature, museum collections, and photographic vouchers submitted to the online Michigan Herp Atlas database. Examination of available species distribution maps have determined that there are approximately 16 amphibian species and approximately 20 aquatic reptile species that have been documented in the surrounding counties (Table 4.1.6-1). Based on their life history requirements, salamander, frog/toad, and turtle species have the potential to utilize the aquatic habitat within the Project Area. Lizard and snake species, while not primarily aquatic, may utilize riparian areas for feeding and shelter. The Federally Threatened Eastern massasauga rattlesnake uses wetland areas year-round, and primarily utilizes crayfish burrows or other holes with unfrozen water for hibernation. Small-mouthed salamanders are State Endangered, and six-lined racerunners, spotted turtles, eastern fox snakes (combined with western fox snake; Phillips 2016), and Blanchard's cricket frogs are State Threatened (MNFI 2024; MDNR 2022b). Of these species, the latter three are the most likely to utilize impoundment habitat, though the spotted turtle and Blanchard's cricket frog prefer clean water and have low tolerance for pollution (MDNR 2022b).

Table 4.1.6-1: Amphibian and Reptile Species Documented in Wayne County, Michigan

Type	Common Name	Scientific Name	Aquatic Habitat Use	Riparian Habitat Use	Status in Michigan
Salamanders	Red-backed salamander	*Plethodon cinereus*	Breeding/Larvae	Juvenile/Adult	Not Listed
	Eastern newt (red-spotted newt)	*Notophthalmus viridescens*	Breeding/Larvae/ Adult	Juvenile	Not Listed
	Eastern tiger salamander	*Ambystoma tigrinum tigrinum*	Breeding/Larvae	Juvenile	Species of Greatest Conservation Need
	Mudpuppy	*Necturus maculosus maculosus*	All Stages	Fully aquatic	Not Listed
	Small-mouthed salamander	*Ambystoma texanum*	Breeding/Larvae	Juvenile/Adult	State Endangered
	Spotted salamander	*Ambystoma maculatum*	Breeding/Larvae	Juvenile	Species of Greatest Conservation Need
Frogs and Toads	Eastern American toad	*Bufo americanus americanus*	Breeding/Larvae	Juvenile/Adult	Not Listed
	Blanchard's cricket frog	*Acris crepitans blanchardi*	All Stages	Juvenile/Adult	State Threatened
	Fowler's toad	*Bufo fowleri*	Breeding/Larvae	Juvenile/Adult	Special Concern
	Western chorus frog	*Pseudacris triseriata*	Breeding/Larvae	Juvenile/Adult	Not Listed

Type	Common Name	Scientific Name	Aquatic Habitat Use	Riparian Habitat Use	Status in Michigan
		triseriata			
	American bullfrog	*Rana catesbeianus*	All Stages	Adult (breeding movements)	Not Listed
	Cope's and Eastern gray tree-frog	*Hyla chrysoscelis/versicolor*	Breeding/Larvae	Juvenile/Adult	Not Listed
	Green frog	*Rana clamitans melanota*	All Stages	Adult (wintering)	Not Listed
	Northern leopard frog	*Rana pipiens*	All Stages	Juvenile/Adult	Species of Greatest Conservation Need
	Pickerel frog	*Rana palustris*	Breeding/Larvae Wintering Adult	Juvenile/Adult (summer)	Special Concern; Species of Greatest Conservation Need
	Northern spring peeper	*Pseudacris crucifer crucifer*	Breeding/Larvae	Juvenile/Adult	Not Listed
	Wood frog	*Rana sylvaticus*	Breeding/Larvae	Juvenile/Adult	Not Listed
Snakes	Eastern milk snake	*Lampropeltis triangulum triangulum*	NA	All Stages	Not Listed
	Northern brown snake	*Storeria d. dekayi*	NA	All stages	Not Listed

Type	Common Name	Scientific Name	Aquatic Habitat Use	Riparian Habitat Use	Status in Michigan
	Northern water snake	*Nerodia sipedon sipedon*	Adult (feeding)	Juvenile/Adult	Not Listed
	Eastern garter snake	*Thamnophis sirtalis sirtalis*	NA	Juvenile/Adult	Not Listed
	Butler's garter snake	*Thamnophis butleri*	NA	Juvenile/Adult	Special Concern; Species of Greatest Conservation Need
	Northern ribbon snake	*Thamnophis sauritus septentrionalis*	NA	Juvenile/Adult	Not Listed
	Northern red-bellied snake	*Storeria occipitomaculata occipitomaculata*	NA	Juvenile/Adult	Not Listed
	Smooth green snake	*Opheodrys vernalis*	NA	Juvenile/Adult	Special Concern; Species of Greatest Conservation Need
	Blue racer	*Coluber constrictor foxi*	NA	Juvenile/Adult (occasional)	Species of Greatest Conservation Need
	Eastern and western fox snake	*Pantherophis vulpinus*	Juvenile/Adult	Juvenile/Adult	State Threatened

Type	Common Name	Scientific Name	Aquatic Habitat Use	Riparian Habitat Use	Status in Michigan
	Queen Snake	*Regina septemvittata*	Juvenile/Adult	Juvenile/Adult	Special Concern; Species of Greatest Conservation Need
	Eastern massasauga rattlesnake	*Sistrurus catenatus*	NA	Juvenile/Adult (hibernation)	Federally Threatened
Lizards	Five-lined skink	*Plestiodon fasciatus*	NA	Adult	Not Listed
Turtles	Eastern painted turtle	*Chrysemys picta*	Juvenile/Adult	Breeding/Nesting Juvenile/Adult (sunning)	Not Listed
	Eastern Snapping turtle	*Chelydra serpentina*	Juvenile/Adult	Breeding/Nesting	Not Listed
	Spotted turtle	*Clemmys guttata*	Juvenile/Adult	Breeding/Nesting	State Threatened
	Blanding's turtle	*Emydoidea blandingii*	Juvenile/Adult	Breeding/Nesting	Special Concern
	Northern map turtle	*Graptemys geographica*	Juvenile/Adult	Breeding/Nesting	Not Listed
	Eastern box turtle	*Terrapene carolina carolina*	NA (fully terrestrial)	Juvenile/Adult	Special Concern
	Spiny soft-shell turtle	*Apalone spinifera spinifera*	Juvenile/Adult	Breeding/Nesting	Not Listed

Type	Common Name	Scientific Name	Aquatic Habitat Use	Riparian Habitat Use	Status in Michigan
	Pond slider[7]	*Trachemys scripta*	Juvenile/Adult	Breeding/Nesting	Not Listed

Source: Phillips 2016 and MDNR 2022b

[7] Includes the subspecies *Trachemys scripta elegans* (red-eared slider)

4.1.7 **Benthic Macroinvertebrates**

The macroinvertebrate community plays an important role in the composition of an aquatic ecosystem. Macroinvertebrates are a food source for the fishery and other aquatic resources that may be present. Benthic macroinvertebrates are aquatic insects, mollusks, arthropods, snails and other organisms that reside on the bottom of waterbodies (Table 4.1.7-1). Various taxa groups have wide ranges of pollution tolerances, resulting in macroinvertebrate community composition used as an indicator of water quality.

Benthic macroinvertebrate surveys have been conducted at five sites in the spring and fall in the lower Huron River (French Landing Dam downstream to the river discharge into Lake Erie). The aquatic biotic integrity in the spring has seen an upward trend since 2004 from "fair" to "good". Fall trends have remained consistent at the "good"/"fair" margin for the same time period (LHWAG and ADW 2012).

Several benthic macroinvertebrate surveys have been conducted in the river within approximately 600 m downstream of the Project dam. A 1992 survey in this reach concluded that the site was moderately impaired, with a loss of all intolerant species and reduced numbers of mayflies, caddisflies, and stoneflies (Kosek 1993). Another qualitative macroinvertebrate survey conducted on August 21, 2012 approximately 612 m downstream of the Project had similar results, with true flies (*Chironomids*), snails (*Lymnaeidae*), and Turbellaria (flatworms) as the most dominant species and only a small number of mayflies (*Ephemeroptera*) and caddisflies (*Trichoptera*; Table 4.1.7-2). The macroinvertebrate community sampled during this survey was rated on the low end of acceptable (MDEQ 2015).

Table 4.1.7-1: Common Types of Benthic Macroinvertebrates in Michigan

Common Name	Order
Flatworms	Turbellaria
Aquatic Earth Worms	Oligochaeta
Leeches	Hirudinea
Snails	Gastropoda
Clams & Mussels	Bivalvia
Mites	Acariformes
Aquatic Sow Bugs	Isopoda
Scuds	Amphipoda
Crayfish & Shrimps	Decapoda
Mayfly Larvae	Ephemeroptera
Dragonfly & Damselfly Larvae	Odonata
Stonefly Larvae	Plecoptera
True Bugs	Hemiptera
Dobsonfly & Alderfly Larvae	Megaloptera
Water Beetles	Coleoptera
Caddisfly Larvae	Trichoptera
True Fly Larvae	Diptera

Source: Bouchard 2004

Table 4.1.7-2. Benthic Macroinvertebrates Sampled in Huron River Immediately Downstream of Project Dam on August 21, 2012

Class	Order	Family	Common name	Count	% of Total
Platyhelminthes	Turbellaria		flatworms	18	7.44
Annelida	Hirudinea		leeches	3	1.24
	Oligochaeta		worms	8	3.31
Arthropoda	Amphipoda		scuds	6	2.48
	Isopoda		sowbugs	1	0.41
Insecta	Ephemeroptera	Baetidae	mayflies	1	0.41
	Odonata	Coenagrionidae	damselflies	1	0.41
	Hemiptera	Veliidae	true bugs	2	0.83
	Trichoptera	Hydropsychidae	caddisflies	7	2.89
		Hydroptilidae		7	2.89
		Polycentropodidae		1	0.41
	Coleoptera	Haliplidae	beetles	5	2.07
		Gyrinidae		1	0.41
	Diptera	Ceratopogonidae	flies	8	3.31
		Chironomidae		149	61.57
Mollusca	Gastropoda	Hydrobiidae	snails	1	0.41
		Lymnaeidae		12	4.96
		Physidae		5	2.07
		Planorbidae		2	0.83
	Pelecypoda	Corbiculidae	bivalves	1	0.41
		Dreissenidae		3	1.24

Source: MDEQ 2015

4.1.8 **Freshwater Mussels**

Freshwater mussels are considered a conservation priority by state and federal agencies due to their role in aquatic food webs, water quality, and nutrient cycling (LHWAG and ADW 2012). Freshwater mussels, which are sedentary and found in shallow or shoreline benthic habitats, are dependent on specific freshwater fish species that act as hosts during their larval developmental stage. Mussel larvae (glochidia) are released into the water column and attach to the host (LHWAG and ADW 2012).

In support of the relicensing effort, the Licensees conducted a *Freshwater Mussel Habitat and Assessment Survey* to provide baseline information on freshwater mussels and their habitat that could be affected by Project operations. The study included an assessment of the Huron River immediately downstream of the Project (Figure 4.1.8-1) and Belleville Lake (Figure 4.1.8-2) to determine if suitable freshwater mussel habitat was present. The study also included a mussel survey in the study area to document the composition, distribution, and relative abundance of freshwater mussel species.

All mussel surveys were performed by EnviroScience between October 9 and October 13, 2023. The study documented low native freshwater mussel abundance and diversity, and no federally listed mussel species were detected within the study area. Downstream of French Landing Dam, substrate was dominated by zebra mussel shell, and the surveyed mussel community was sparse with evidence of extensive zebra mussel infestation. The shoreline areas of Belleville Lake contain limited habitat for mussels due to residential development and associated shoreline stabilization measures. The few areas found with potential suitable habitat contained little evidence of a mussel community. Only the western input of Ford Lake was found to support a small active mussel population with limited species diversity.

Downstream of the French Landing Dam a cumulative six live mussels across two species were collected (Figure 4.1.8-3). Mucket (*Actinonaias ligamentina*), with five individuals, was the dominant species with one live Mapleleaf (*Quadrula quadrula*) representing the second species collected. Five species were collected via shell material only, including Spike (*Eurynia dilatata*), Plain Pocketbook (*Lampsilis cardium*), Flutedshell (*Lasmigona costata*), Round Pigtoe (*Pleurobema sintoxia*), and Kidneyshell (*Ptychobranchus fasciolaris*). Flutedshell, Round Pigtoe, and Kidneyshell are listed as species of concern in Michigan, and all shell material from these species were categorized as weathered dead or subfossil. Table 4.1.8-1 shows the status, numbers by age class, and relative abundance of freshwater mussels downstream of the Project.

In the impoundment, seven live mussels across three species were collected (Figure 4.1.8-3). The dominant species was White Heelsplitter (*Lasmigona complanata*) with five individuals, with one live individual collected of both Giant Floater (*Pyganodon grandis*) and Paper Pondshell (*Utterbackia imbecillis*). Paper Pondshell is a species of special concern in Michigan. Four species were collected via shell material only, including Elktoe (*Alasmidonta marginata*), Spike, Plain Pocketbook, and Rainbow (*Villosa iris*). Elktoe and Rainbow are species of special concern in

Michigan, and all shell material collected from these species were categorized as weathered dead or subfossil. Table 4.1.8-2 shows the status, numbers by age class, and relative abundance of freshwater mussels in Belleville Lake.

Table 4.1.8-1 : Status, Numbers by Age Class, and Relative Abundance of Freshwater Mussels Downstream of the Project

Species	Common Name	CODE	MI Status[1]	Live	[2]D	Relative Abundance (% total)
Actinonaias ligamentina	Mucket	ACLI		5	17	83.3%
Eurynia dilatata	Spike	EUDI		0	1	0.0%
Lampsilis cardium	Plain Pocketbook	LACA		0	3	0.0%
Lasmigona costata	Flutedshell	LSCS	SC	0	1	0.0%
Pleurobema sintoxia	Round Pigtoe	PLSI	SC	0	1	0.0%
Ptychobranchus fasciolaris	Kidneyshell	PTFA	SC	0	1	0.0%
Quadrula quadrula	Mapleleaf	QUQU		1	0	16.7%
Total:				6	24	100.0%
No. of Species:				2	6	--

[1] SC = Special Concern

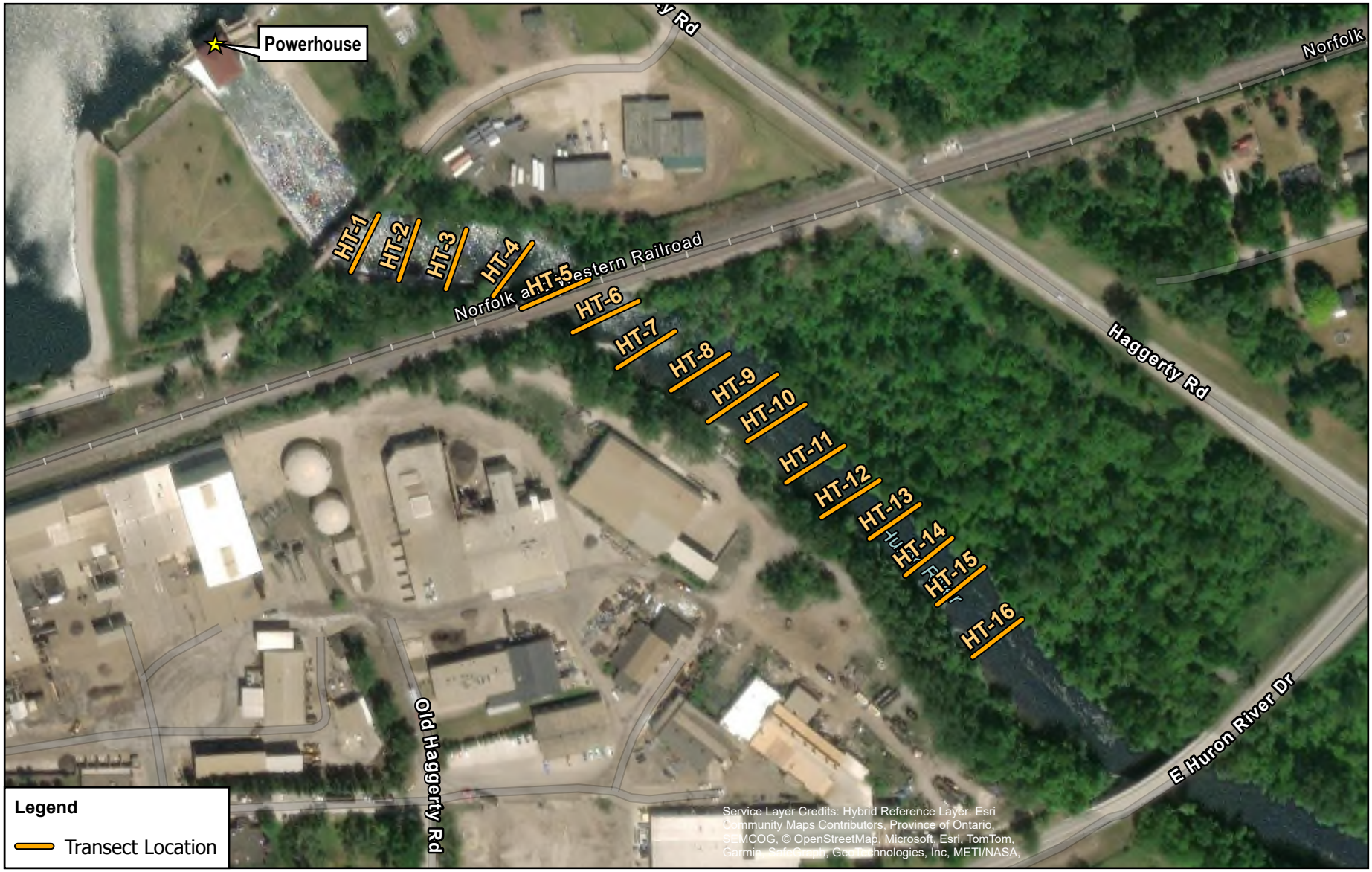
[2] D = includes weathered dead and subfossil shells. No fresh dead shell was collected.

Table 4.1.8-2: Status, Numbers by Age Class, and Relative Abundance of Freshwater Mussels in Belleville Lake

Species	Common Name	CODE	MI Status[1]	Live	[2]D	Relative Abundance (% total)
Alasmidonta marginata	Elktoe	ALMA	SC	0	3	0.0%
Eurynia dilatata	Spike	EUDI		0	1	0.0%
Lampsilis cardium	Plain Pocketbook	LACA		0	5	0.0%
Lasmigona complanata	White Heelsplitter	LSCO		5	1	71.4%
Pyganodon grandis	Giant Floater	PYGR		1	3	14.3%
Utterbackia imbecillis	Paper Pondshell	UTIM	SC	1	0	14.3%
Villosa iris	Rainbow	VIIR	SC	0	8	0.0%
Total:				7	21	100.0%
No. of Species:				3	6	--

[1] SC = Special Concern

[2] D = includes weathered dead and subfossil shells. No fresh dead shell was collected.



N

0 125 250 500 Feet

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French Landing Hydroelectric Project
FERC No. P-9951

Figure 4.1.8-1:
Downstream Mussel Survey
Transect Locations

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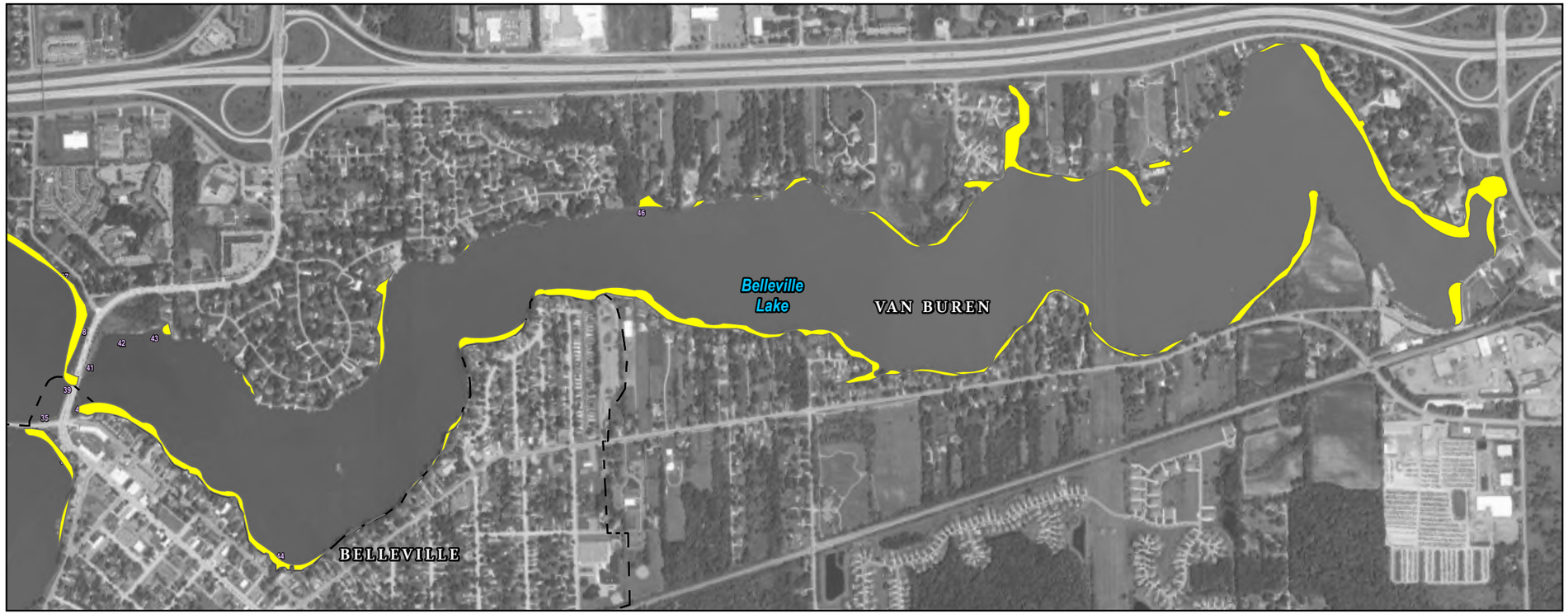

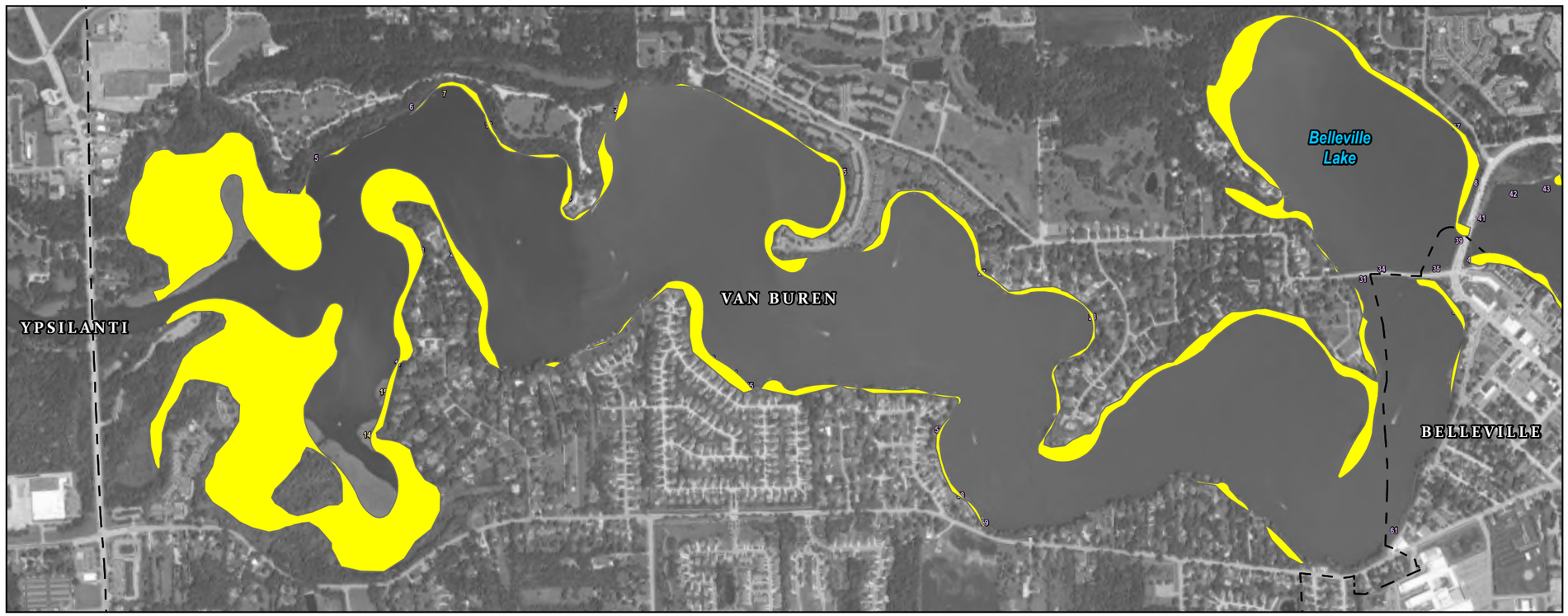

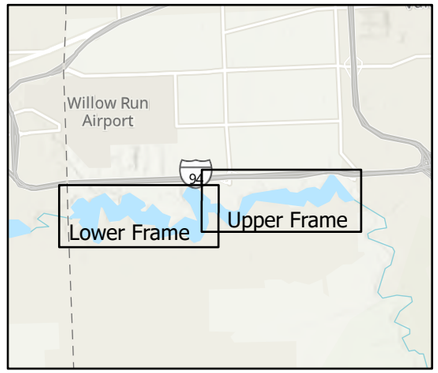

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FERC NO. 9951

Figure 4.1.8-2:
Belleville Lake Survey Zone

Legend

- Municipality Boundary
- Belleville Survey Zone (0-5ft)

Service Layer Credits: World Topographic Map: Province of Ontario, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS
World Imagery: Maxar
World Hillshade: Esri, NASA, NGA, USGS

N

0 625 1,250 2,500 Feet

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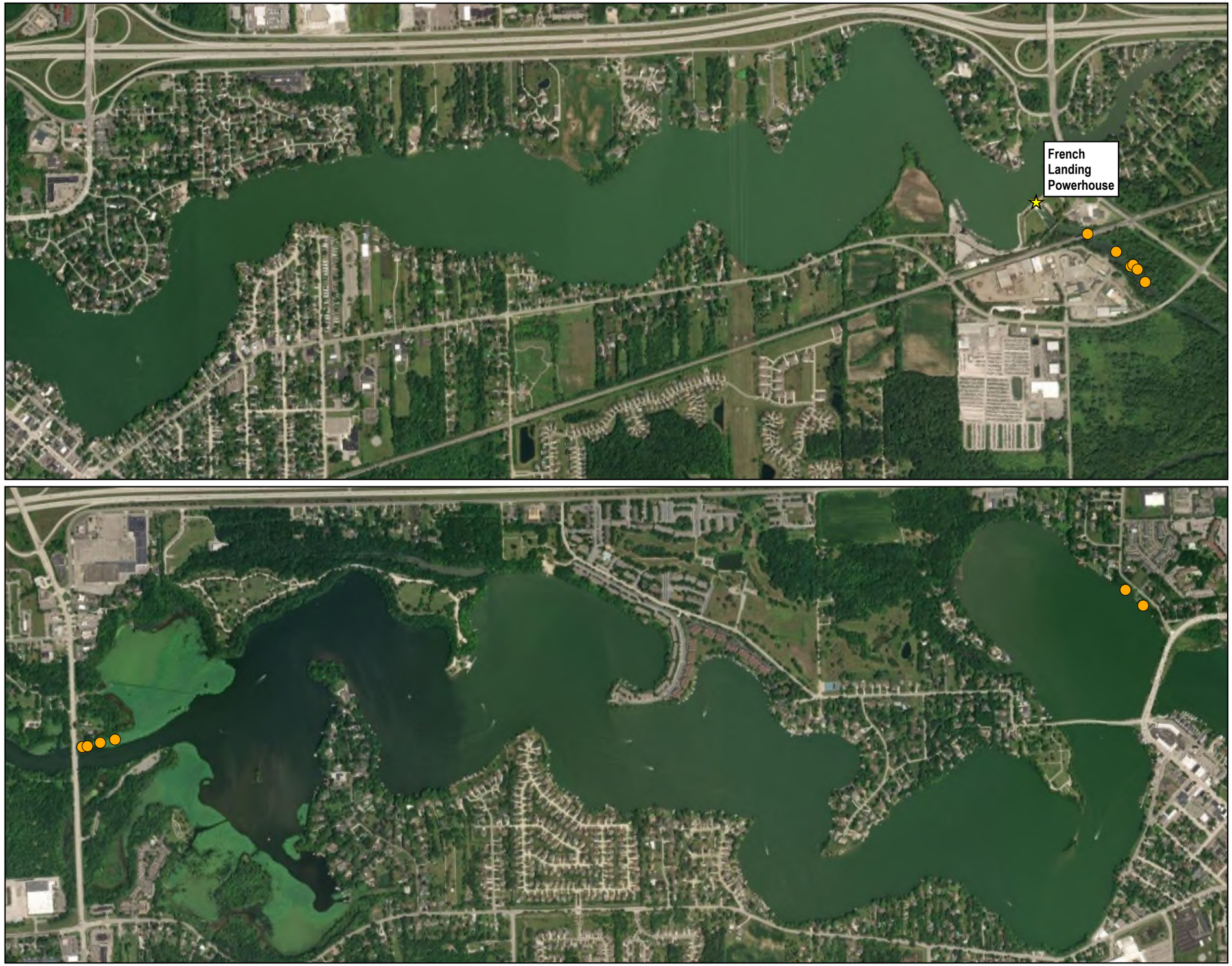

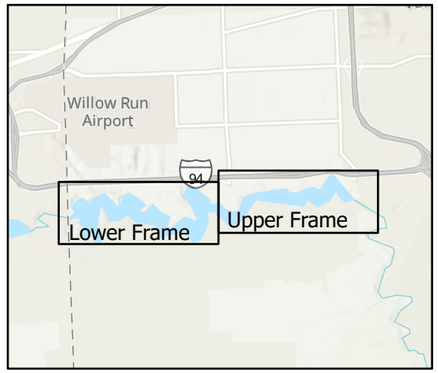

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Figure 4.1.8-3:
Live Mussels Collected
During 2023 Survey

Legend

- Live Mussel Collected
- French Landing Powerhouse

Service Layer Credits: World Topographic Map: Province of Ontario, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS
World Imagery: Maxar
World Hillshade: Esri, NASA, NGA, USGS

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0 625 1,250 2,500 Feet

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4.2 Environmental Analysis

Section 4.2.2 of FERC's SD2 presented a preliminary list of environmental issues it identified to be addressed in the NEPA review. The resource issues identified include:

Effects of continued project operation and maintenance on water quality, including dissolved oxygen and water temperature, upstream and downstream of the project dam.

As discussed in Section 3.2.1, water quality is not adversely impacted by Project operation.

Effects of continued project operation and maintenance on impingement, entrainment, and turbine mortality of resident fish species.

The Licensees conducted fish entrainment studies in 1990-91, and 1992 as required by FERC. The studies found the vast majority of fish entrained at the Project were juvenile black crappie, and turbine mortality was low. FERC issued a determination in 1998 which stated that the mortality rate found was consistent with observations at similar projects. The FERC final order determined that entrainment at the Project is unlikely to have an adverse impact on fish populations. No operational changes or mitigation measures were deemed necessary. As the Project continues to operate with no structural changes since these studies occurred, it is likely the current impact of the Project is consistent with findings from previous studies.

Effects of continued project operation and maintenance on migratory fish, including lake sturgeon, and their movements in the Huron River.

During the initial licensing, it was determined by resource agencies that the Project Dam was not targeted for fish passage as Belleville Lake is managed for cool and warmwater fish and the Huron River downstream from the Project is geared toward stocked, migratory coldwater species (specifically steelhead). As stated in Section 4.1.1.1, Lake Sturgeon do not have access to the Huron River past Flat Rock Dam, which is located approximately 16 miles downstream of the Project. Flat Rock Dam installed a denil-type fishway at the dam to facilitate fish passage at the retired hydro facility, however, this type of fishway is too small to be utilized by sturgeon. Given that the migratory species downstream of the Project either do not reach the Project (sturgeon) or do not need to be passed upstream to meet fisheries management goals (stocked steelhead), the Project is not affecting populations or fisheries management for migratory species. Further, though FERC identified the potential for cumulative effects in SD2, since the Project is not affecting populations or fisheries management for migratory species, there are no known cumulative effects.

Effects of continued project operation and maintenance on freshwater mussels.

The Licensees are proposing to continue to operate the Project in a run-of-river mode, with no change to any structural components at the Project. In addition, the *Freshwater Mussel Habitat and Assessment Survey* conducted during relicensing found no state or federally listed mussel species, and limited native freshwater mussel abundance and diversity in the Project area. Due to

the limited amount of native freshwater mussels and lack of federally listed mussel species, continued Project operation and maintenance is not anticipated to effect freshwater mussels in the Project area.

Effects of continued project operation and maintenance on the spread of aquatic nuisance species upstream of the French Landing Dam.

As noted in Section 4.1.8, zebra mussel are prevalent within Belleville Lake and downstream of the Project. Zebra mussel were introduced to Belleville Lake in 1993 and have proliferated throughout the Project area. Given that zebra mussels have already become established within the Project area and that the Project does not provide upstream fish passage, the continued operation and maintenance of the Project is likely to have minimal impact on the spread of aquatic nuisance species and actually provides a benefit by preventing the upstream passage of mobile aquatic species, if they become present downstream.

Effects of continued project operation and maintenance on rare fish and freshwater mussel species, including state listed species and state species of concern.

As stated above, no state or federally listed freshwater mussel species were identified during the mussel survey conducted by the Licensees. The Project's continued operation is not anticipated to impact rare fish and freshwater mussel species given that (1) no such species are present, and (2) the Licensees are proposing to continue to operate the Project in a run-of-river mode under its new license.

4.2.1 Agency Recommended Mitigation

MDNR filed comments on the French Landing DLA with FERC on February 25, 2025. In the letter, MDNR staff recommended that the Licensees include plans for mitigating the effects to fish and aquatic resources due to deviations from run-of-river operation. They recommended the plan include measures to avoid drawdowns, and when drawdowns are unavoidable, state measures to be taken to minimize impacts to the resources. The Licensees have provided responses to the comments received in Appendix E-1.

4.2.2 Applicant Proposed Mitigation

The Licensees are proposing to continue to operate the Project in a run-of-river mode, which minimizes water surface elevation fluctuations in Belleville Lake, and maintains discharge from the Project so that the flow in the Huron River immediately downstream from the tailrace approximates the inflows into the Project reservoir.

In addition, the Licensees are proposing to develop an Operations Compliance Monitoring Plan, as discussed in Section 3.2.4. The Operations Compliance Monitoring Plan will include measures to avoid drawdowns, and when drawdowns are unavoidable, state measures to be taken to minimize impacts to the resources.

4.2.3 **Unavoidable Adverse Effects**

As there are no proposed changes to Project operation, there are no unavoidable adverse effects anticipated due to continued Project operation.

4.3 References

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5 WILDLIFE AND BOTANICAL RESOURCES

5.1 Affected Environment

5.1.1 Regional Setting

The Project is located in the Maumee Lake Plain ecoregion. This ecoregion extends along the western shores of Lake Erie, in northwest Ohio and southeastern Michigan, and slightly into northeastern Indiana. Most of the Detroit and Toledo metropolitan areas are included in this ecoregion. It includes heavy urbanization, including both industrial and residential development. Outside of the cities, it has been altered heavily by draining and agriculture. The Maumee Lake Plain ecoregion is one of the most severely altered and degraded ecoregions in North America (Bplant, n.d.).

5.1.2 Upland Botanical Resources

Agriculture and urbanization have severely affected this region, draining and destroying approximately 80-90% of original wetlands in the area. Additionally, remaining marshes have been degraded by silt and erosion (Bplant, n.d.). Previously, natural forest cover was mostly Elm-Ash swamp forest, with American Elm (*Ulmus americana*), Green Ash (*Fraxinus pennsylvanica*), and Black Ash (*Fraxinus nigra*) as the dominant tree species. American Beech (*Fagus grandifolia*) forests existed on better-drained sites. Dolomite ridges and areas with more sand and silt supported scattered mixed oak forests, with Black Oak (*Quercus velutina*), Bur Oak (*Quercus macrocarpa*), White Oak (*Quercus alba*), and Scarlet Oak (*Quercus coccinea*) as dominant species. There were also fens along part of the Lake Erie shoreline, and scattered wet prairies (Bplant, n.d.).

Today, little forest cover remains in this area. What does remain are forests in the form of small woodlots, occurring separately from each other with some distance. There is a small amount of bottomland hardwood forest and Black Ash swamp on sites where drainage attempts were unsuccessful. Recently, Ash species have been mostly eliminated by the Emerald Ash Borer (*Agrilus planipennis*), and previously, Elm was greatly impacted by Dutch Elm Disease. Currently, bottomland forests have a very different composition than previously and the mixed Oak forests on drier sites have been almost eliminated entirely (Bplant, n.d.).

In support of relicensing, the Licensees conducted the *Botanical Resources Survey* to develop the information necessary to address potential effects of Project operation and maintenance on botanical resources within the Project boundary. The survey consisted of a desktop review of existing data and a field survey. For the desktop review, National Wetlands Inventory (NWI), National Land Cover Database (NLCD) Land Cover, USDA National Resources Conservation Service (NRCS) soil maps, and Belleville Lake bathymetry data were evaluated. In addition, the Midwest Invasive Species Information Network (MISIN) was queried, and a general information request was submitted to the Michigan Natural Features Inventory (MNFI). The USFWS Information for Planning and Consulting (IPaC) was also queried to identify any possible rare,

threatened, or endangered (RTE) species in the Project area. Information related to RTE botanical species is discussed in Section 6.1.4.

The survey found the combination of steeply sloped banks, seawalls and rip-rap, residential landscaping, and deep near-shore water limits the amount of terrestrial and wetland plant habitat along the shoreline. Due to its configuration, there are limited upland botanical resources within the Project boundary. Upland botanical resources were generally found to be developed parkland (French Landing Park and Dam Site), with dry-mesic southern forest and developed land along the shoreline boundary of the Project boundary. The developed land within the Project boundary is maintained bi-monthly from May until mid-October by lawn mowing by the Project operators. Approximately 4.7 acres of land are maintained within the Project boundary by mowing. No herbicide or chemical treatments are performed to maintain vegetation within the Project boundary. In addition, no tree trimming occurs within the Project boundary unless a safety issue arises from a hazard tree or tree branch.

A total of 116 vascular plant species were observed along the shoreline during the survey, with 53% of taxa native to Michigan. The floristic quality index (FQI) is 22.6 and 70% of species are those known to occur in ruderal or degraded areas. FQI's typically range from 10 to 65 and up. Areas with FQIs greater than 50 are rare and represent intact natural communities of significant native biodiversity important to conservation at the State level, while FQI's of 20 and below are considered to be highly degraded or derelict plant communities, or very small remnants of native vegetation (Herman et al 2001). An FQI of 22.6 indicates a degraded shoreline plant community with potential for some recovery.

Where present (e.g., unmaintained lots), the tree stratum has an average canopy cover of 70%, composed of silver and sugar maples, black walnut, mixed oaks, American beech, hackberry, northern catalpa, white willow, white mulberry, cottonwood, and tree-of-heaven. These communities are outside of the Project boundary, residing inland from the Project impoundment. The shrub layer varies from 0% to 100% cover, with dense areas occurring at wooded edges with high light exposure. Riverbank grape is common to abundant. Common forbs include jewelweed, common horsetail, bittersweet nightshade, common mullein, sweet white-clover, crown-vetch, purple loosestrife, bluegrasses, smooth brome, reed canary grass, and common reed.

Undeveloped upland vegetation along the shoreline occurs along Van Buren Park, Belleville West Boating Access Site, and neighboring properties at the west end of the Project area. It is composed of dry-mesic southern forest. The near-shore tree stratum cover is 70%, dominated by shagbark and bitternut hickory, and swamp white, red, pin, and chinquapin oaks. Red, black, and sugar maple are occasional. The shrub layer has 30% cover and includes aromatic sumac, grey dogwood, redbud, maple-leaved viburnum, and downy arrowwood. Virginia creeper is common in the herbaceous layer. Steep, open bluffs along the shoreline have a sparse layer of common juniper, Eastern red-cedar, staghorn sumac, riverbank grape, western sunflower, and little bluestem with common ruderal species such as Queen Anne's lace, ox-eye daisy, smooth brome, and Kentucky bluegrass.

5.1.2.1 Invasive Plant Species and Noxious Weeds

The field survey conducted in the summer of 2023 for the *Botanical Resources Survey* documented 13 invasive species along the Project shoreline (Table 5.1.2.1-1). Glossy buckthorn (*Frangula alnus*), autumn olive (*Elaeagnus umbellate*), common buckthorn (*Rhamnus cathartica*), and European bush honeysuckles (*Lonicera morrowii, L. X bella, L. mackii, L. tartarica*) were the most abundant species observed, although all were found with patchy density at the edges of treed areas along the shoreline. Other taxon noted were common reed (*Phragmites australis australis*), purple loosestrife (*Lythrum salicaria*), and Japanese knotweed (*Fallopia japonica*). Common reed occurs in most wetland habitat in the Project area, including the northwest corner of Belleville Lake, southwest of the French Landing Dam, in rip-rap along Denton and Belleville Road bridges, on sandy banks north of the Denton Road bridge, and scattered throughout the developed shoreline. Purple loosestrife is widespread but was typically found in small, scattered clumps. Japanese knotweed can be found in similar habitat, though it is limited to the southeast quarter of the Project area.

Table 5.1.2.1-1: Shoreline Invasive Species

Common Name	*Scientific Name*	Acreage	Average Density
Glossy Buckthorn	*Frangula alnus*	18.2	patchy
Autumn Olive	*Elaeagnus umbellata*	16.3	patchy
Common Buckthorn	*Rhamnus cathartica*	16	patchy
European Bush Honeysuckles	*Lonicera morrowii, L. X bella, L. mackii, L. tartarica*	14.8	patchy
Common Reed	*Phragmites australis australis*	4.8	patchy-dense
Japanese Knotweed	*Fallopia japonica*	1.6	patchy
Purple Loosestrife	*Lythrum salicaria*	1.1	patchy-sparse
Narrowleaf Cattail	*Typha angustifolia*	0.9	dense
Canada thistle	*Cirsium arvense*	0.07	patchy
Tree-of-Heaven	*Ailanthus altissima*	n/a	few individuals
Japanese barberry	*Berberis thunbergii*	n/a	few individuals
Oriental bittersweet	*Celastrus orbiculatus*	n/a	few individuals
Multiflora rose	*Rosa multiflora*	n/a	few individuals

Source: GLEC, 2023

5.1.3 Terrestrial Wildlife Resources

5.1.3.1 Temporal and Spatial Distribution of Wildlife Resources

The landscape in the Maumee Lake Plains ecoregion has dealt with severe alterations by artificial drainage due to agriculture and development (Bplant, n.d.). The Project area has limited terrestrial habitat due to it being bordered mostly by developed land, ranging from low to high intensity.

MDNR was consulted to search for mammal species found within Michigan and, therefore, having potential to occur within the Project area. Mammal species with the potential to occur within the Project area are included in Table 5.1.3.1-1.

Ann Arbor, MI, which is situated approximately 22 miles west of Van Buren Charter Township, MI, is one of the sites where the National Audubon Christmas Bird Count is conducted. A Christmas Bird Count conducted in 2021 in Ann Arbor was used in searching for potential bird species that may occur within the Project area. These species are listed in Table 5.1.3.1-2. Additionally, a list of reptiles and amphibians that have the potential to occur in the general Project area is included in Table 4.1.6-1.

Species that are accustomed to development, agriculture, or wetland areas may be found year-round in the Project area. Many avian species may be present in the Project area seasonally, with some species present year-round. During the field survey conducted in the summer of 2023 for the *Botanical Resources Survey*, incidental observation of wading birds and waterfowl were occasionally seen. Blue Heron were common in shallow water along the shoreline. Several Green Heron and one Great Egret were also observed. Waterfowl were seen in small numbers throughout Belleville Lake, mostly Mallards.

5.1.3.2 Invasive Wildlife Species

MDNR has identified one mammal species, Nutria (*Myocastor coypus*), that is on the Invasive Species Watch List and may be located in the Project area. Michigan Watch List species are species that have never been confirmed in the wild in Michigan or have a limited known distribution. These species are not native and have the potential to harm human health or natural, agricultural, or silvicultural resources, and can be listed as prohibited or restricted by the State of Michigan (State of Michigan, 2022a).

Nutria (*Myocastor coypus*) are a large, herbivorous, semiaquatic rodent, approximately two feet long with yellow or orange colored front teeth. They have thick, rat-like tails covered with bristly hairs. Nutria inhabit farm ponds, drainage canals, bayous, freshwater and brackish marshes, swamps, and rivers. Their diet consists of Bulrush (*Scirpus* sp.), Cordgrass (*Spartina* sp.), roots, and rhizomes and tubers of Cattails (*Typha* sp.). Their native range is South America; however, their U.S. distribution includes freshwater marshes in coastal areas of the Gulf Coast States (State of Michigan, 2022b).

Table 5.1.3.1-1: Mammal Species with the Potential to Occur Within Project Area

Common Name	Scientific Name
Eastern Fox Squirrel	*Sciurus niger*
Eastern Gray Squirrel	*Sciurus carolinensis*
Red Squirrel	*Sciurus vulgaris*
Northern Flying Squirrel	*Glaucomys sabrinus*
Southern Flying Squirrel	*Glaucomys volans*
Least Chipmunk	*Neotamias minimus*
Eastern Chipmunk	*Tamias striatus*
Woodchuck/Groundhog	*Marmota monax*
Thirteen-Lined Ground Squirrel	*Ictidomys tridecemlineatus*
Cottontail Rabbit	*Sylvilagus* sp.
Snowshoe Hare	*Lepus americanus*
Cougar	*Puma concolor*
Gray Wolf	*Canis lupus*
Moose	*Alces alces*
Little Brown Bat	*Myotis lucifugus*
Northern Long-Eared Bat	*Myotis septentrionalis*
Evening Bat	*Nycticeius humeralis*
Hoary Bat	*Lasiurus cinereus*
Big Brown Bat	*Eptesicus fuscus*
Tri-Colored Bat	*Perimyotis subflavus*
Indiana Bat	*Myotis sodalis*
Silver-Haired Bat	*Lasionycteris noctivagans*
Red Bat	*Lasiurus borealis*
Coyote	*Canis latrans*

Source: State of Michigan, 2022a

Table 5.1.3.1-2: Bird Species Recorded During 2021 Ann Arbor, MI Bird Count

Common Name	Scientific Name
Cackling Goose	*Branta hutchinsii*
Canada Goose	*Branta canadensis*
Mute Swan	*Cygnus olor*
Trumpeter Swan	*Cygnus buccinator*
Wood Duck	*Aix sponsa*
Gadwall	Anas strepera
American Black Duck	*Anas rubripes*
Mallard	*Anas platyrhynchos*
Northern Shoveler	*Anas clypeata*
Green-Winged Teal	*Anas crecca*
Redhead	*Aythya americana*
Ring-Necked Duck	*Aythya collaris*
Lesser Scaup	*Aythya affinis*
Bufflehead	*Bucephala albeola*
Common Goldeneye	*Bucephala clangula*
Hooded Merganser	*Lophodytes cucullatus*
Common Merganser	*Mergus merganser*
Red-Breasted Merganser	*Mergus serrator*
Ruddy Duck	*Oxyura jamaicensis*
Ring-Necked Pheasant	*Phasianus colchicus*
Wild Turkey	*Meleagris gallopavo*
Pied-billed Grebe	*Podilymbus podiceps*
Great Blue Heron	*Ardea herodias*
Turkey Vulture	*Cathartes aura*
Sharp-Shinned Hawk	*Accipiter striatus*
Cooper’s Hawk	*Accipiter cooperii*
Accipiter sp.	*Accipiter* sp.
Bald Eagle	*Haliaeetus leucocephalus*
Red-Shouldered Hawk	*Buteo lineatus*
Red-Tailed Hawk	*Buteo jamaicensis*
American Coot	*Fulica americana*
Sandhill Crane	*Grus canadensis*
Ring-Billed Gull	*Larus delawarensis*
Herring Gull	*Larus argentatus*
Gull sp.	*Larinae* sp.
Rock Pigeon	*Columba livia*
Mourning Dove	*Zenaida macroura*
Eastern Screech-Owl	*Megascops asio*

Common Name	Scientific Name
Great Horned Owl	*Bubo virginianus*
Barred Owl	*Strix varia*
Northern Saw-Whet Owl	*Aegolius acadicus*
Belted Kingfisher	*Megaceryle alcyon*
Red-Headed Woodpecker	*Melanerpes erythrocephalus*
Red-Bellied Woodpecker	*Melanerpes carolinus*
Downy Woodpecker	*Picoides pubescens*
Hairy Woodpecker	*Picoides villosus*
Northern Flicker	*Colaptes auratus*
Pileated Woodpecker	*Dryocopus pileatus*
Woodpecker sp.	*Picidae* sp.
American Kestrel	*Falco sparverius*
Merlin	*Falco columbarius*
Peregrine Falcon	*Falco peregrinus*
Eastern Phoebe	*Sayornis phoebe*
Blue Jay	*Cyanocitta cristata*
American Crow	*Corvus brachyrhynchos*
Horned Lark	*Eremophila alpestris*
Black-Capped Chickadee	*Poecile atricapillus*
Tufted Titmouse	*Baeolophus bicolor*
Red-Breasted Nuthatch	*Sitta canadensis*
White-Breasted Nuthatch	*Sitta carolinensis*
Brown Creeper	*Certhia americana*
Winter Wren	*Troglodytes hiemalis*
Carolina Wren	*Thryothorus ludovicianus*
Golden-Crowned Kinglet	*Regulus satrapa*
Eastern Bluebird	*Sialia sialis*
Hermit Thrush	*Catharus guttatus*
American Robin	*Turdus migratorius*
Gray Catbird	*Dumetella carolinensis*
European Starling	*Sturnus vulgaris*
Cedar Waxwing	*Bombycilla cedrorum*
Yellow-Rumped Warbler	*Setophaga coronata*
American Tree Sparrow	*Spizelloides arborea*
Chipping Sparrow	*Spizella passerina*
Fox Sparrow	*Passerella iliaca*
Dark-Eyed Junco	*Junco hyemalis*
White-Crowned Sparrow	*Zonotrichia leucophrys*
White-Throated Sparrow	*Zonotrichia albicollis*
Song Sparrow	*Melospiza melodia*

Common Name	Scientific Name
Swamp Sparrow	*Melospiza georgiana*
Sparrow sp.	*Emberizidae* sp.
Northern Cardinal	*Cardinalis cardinalis*
Rusty Blackbird	*Euphagus carolinus*
Brown-Headed Cowbird	*Molothrus ater*
House Finch	*Haemorhous mexicanus*
Purple Finch	*Haemorhous purpureus*
Common Redpoll	*Acanthis flammea*
Pine Siskin	*Spinus pinus*
American Goldfinch	*Spinus tristis*
House Sparrow	*Passer domesticus*
Passerine sp.	*Passeriformes* sp.

Source: National Audubon Society, 2021

5.1.4 Wetlands, Riparian, and Littoral Habitat

5.1.4.1 Wetland Habitat and Vegetation

Wetlands are defined by the USFWS as "lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For the purposes of this classification, wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of the year" (USFWS, 1993).

The *Botanical Resources Survey* conducted by the Licensees included a desktop analysis of existing NWI data. The NWI delineates Belleville Lake as lacustrine (L2UBKh, L1UBHh) with a small section of riverine (R2UBH) habitat at the west end, with no submerged aquatic vegetation (SAV) or palustrine emergent marsh (PEM) mapped in the Project boundary (NWI 2018).

The field survey conducted in support of the *Botanical Resources Survey* included a shoreline boat survey and an aquatic rake toss survey. The rake-tosses were conducted at each point-intercept within the photic zone of Belleville Lake, as indicated by the yellow dots in Figure 5.1.4.1-1. The photic zone was estimated using the light penetration depth as determined by Secchi disc depth and field observations. Belleville Lake is turbid, and the Secchi disc depth was consistently around two feet. This placed the photic zone at approximately six feet in depth. The lack of submergent aquatic vegetation over six feet in depth was further verified by field observations.

The field survey observed 23 large SAV beds covering a total of 295 acres, or 23% of Belleville Lake. The SAV beds were primarily located at the west end of the Project boundary where the Huron River enters Belleville Lake (72% or 213 acres) and north of the Denton Road bridge (19%, 55 acres). These beds were not previously listed on NWI maps. Table 5.1.4.1-1 shows the approximate size of SAV beds noted during the field survey, and their composition. The survey also found PEM at the fringes of the SAV beds, which were slightly different than shown on NWI maps. PEM is concentrated in the west end of Belleville Lake, though most are outside of the Project boundary. Locations of SAV and PEM wetlands observed during the field survey are shown on Figure 5.1.4.1-2.

Of the 31 SAV species observed, 25 are native and six are non-native. The adjusted floristic quality index is 47, representative of a high-quality natural community (Herman et al 2001, Miller & Wardrop 2006). Coontail, common waterweed, leafy pondweed, Fries pondweed, sago pondweed, curly leaf pondweed, and Eurasian water-milfoil were the most commonly encountered species. Long-leaf pondweed, common bladderwort, and eel-grass are occasional. Submerged vegetation varies in cover from 10% to 100%. At the west end of the lake, floating-leaved species dominate 95 acres, about half, of the submergent marsh. White water-lily covers nearly 100% in shallow water, while in slightly deeper water (~3 ft), it is replaced by American lotus (State Special

Concern). Where American lotus becomes emerged with stalked leaves, the submergent marsh may alternately be considered PEM (Federal Geographic Data Committee 2013).

5.1.4.2 Riparian Habitat and Vegetation

The USFWS defines riparian areas as "plant communities contiguous to and affected by surface and subsurface hydrologic features of perennial or intermittent lotic and lentic water bodies (rivers, streams, lakes, or drainage ways)" (USFWS, 2020). The USFWS states that these riparian areas are typically transitional areas between an uplands and wetlands. Riparian habitat will have distinctly different vegetation than adjacent areas and/or similar species to adjacent areas but with more growth. This zone provides numerous valuable functions such as maintaining streambank stability, sediment filtration, and floodplain processes.

The riparian zone within the Project area is largely developed, ranging from low to high intensity. The results of the 2023 *Botanical Resources Survey* found the combination of steeply sloped banks, seawalls and rip-rap, residential landscaping, and deep near-shore water limits the amount of terrestrial and wetland plant habitat along the shoreline. Due to its configuration, there are limited riparian botanical resources within the Project boundary.

5.1.4.3 Littoral Habitat and Vegetation

The littoral zone extends from the shoreline area influenced by wave action to the depth where sunlight can no longer penetrate to grow aquatic plants. The size of the littoral zone varies and is largely dependent on basin morphology and accumulated sediments. Marshes and other shallow water areas that are permanently water covered can be in the littoral zone (Federal Geographic Data Committee 2013). Habitat and vegetation found within the littoral zone was discussed in Section 5.1.4.1.

5.1.4.4 Wetland, Littoral, and Riparian Wildlife

Transition zones between aquatic and terrestrial systems support many mammal, bird, reptile, and amphibious species that are dependent on wetland, littoral, and riparian habitat types to survive. Sections 4.1.6 and 5.1.3 provide additional information on wildlife that may exist in the Project Area.

5.1.4.5 Aquatic Invasive Species

Five aquatic invasive species were found in the submergent marsh (Table 5.1.4.5-1). Eurasian water-milfoil was found across 70 acres of submergent marsh, concentrated in the west end of the lake in a large SAV bed. The cover varies from sparse to dense, with most areas classified as patchy (~50% cover). Curly-leaf pondweed was found across 40 acres in sparse to patchy density, also concentrated in the west end of the Project area, though both aquatic invasive species can be found throughout Belleville Lake. Starry stonewort was documented at one point the southwest end of the Project area. Brittle naiad is also common throughout the lake, with a total cover of 36

acres, the largest population in the submergent marsh north of Denton Road. Cover is typically sparse to patchy. Locations of aquatic invasive species are depicted in Figure 5.1.4.5-1.

Table 5.1.4.1-1: Submerged Aquatic Vegetation Bed Composition

SAV Bed	Size (acres)	Dominant Species	Associate Species	Estimated Areal Cover
1	55.9	American lotus *(Nelumbo lutea)* white water-lily *(Nymphaea odorata)* common bladderwort *(Utricularia vulgaris)*	coontail *(Ceratophyllum demersum)* Eurasian water-milfoil *(Myriophyllum spicatum)* curly-leaf pondweed *(Potamogeton crispus)*	100%
2	38.2	American lotus *(Nelumbo lutea)* white water-lily *(Nymphaea odorata)* common bladderwort *(Utricularia vulgaris)* Eurasian water-milfoil *(Myriophyllum spicatum)*	curly-leaf pondweed *(Potamogeton crispus)* starry duckweed *(Lemna trisulca)* small duckweed *(Lemna minor)* greater duckweed *(Spirodela polyrhiza)*	100%
3	21.3	coontail *(Ceratophyllum demersum)* sago pondweed *(Stuckenia pectinata)*	Nuttal's waterweed *(Elodea nuttalii)* common waterweed *(Elodea canadensis)* eel-grass *(Vallisneria americana)*	50-80%
4	0.8	American lotus *(Nelumbo lutea)*		80%
5	1.3	American lotus *(Nelumbo lutea)*	curly-leaf pondweed *(Potamogeton crispus)* Eurasian water-milfoil *(Myriophyllum spicatum)*	90%
6	0.5	American lotus *(Nelumbo lutea)*		90%

SAV Bed	Size (acres)	Dominant Species	Associate Species	Estimated Areal Cover
7	95.2	coontail *(Ceratophyllum demersum)* sago pondweed *(Stuckenia pectinata)* curly-leaf pondweed *(Potamogeton crispus)* Eurasian water-milfoil *(Myriophyllum spicatum)*	starry stonewort *(Nitellopsis obtusa)* slender waterweed *(Elodea nutellii)* common waterweed *(Elodea canadensis)* eel-grass *(Vallisneria americana)* long-leaved pondweed *(Potamogeton nodosus)* Fries's pondweed *(Potamogeton friesii)* leafy pondweed *(Potamogeton foliosus)*	80-100%
8	4.4	coontail *(Ceratophyllum demersum)* sago pondweed *(Stuckenia pectinata)* common waterweed *(Elodea canadensis)*		30%
9	1.5	common waterweed *(Elodea canadensis)* leafy pondweed *(Potamogeton foliosus)*		30%
10	3.6	sago pondweed *(Stuckenia pectinata)*	leafy pondweed *(Potamogeton foliosus)*	30%
11	1.0	coontail *(Ceratophyllum demersum)*	brittle naiad *(Najas minor)*	20%
12	1.7	sago pondweed *(Stuckenia pectinata)*		10%

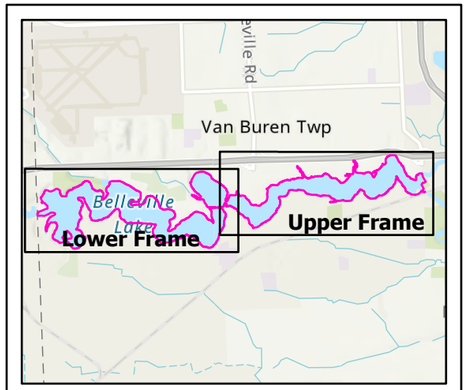
SAV Bed	Size (acres)	Dominant Species	Associate Species	Estimated Areal Cover
13	57.3	coontail *(Ceratophyllum demersum)* common waterweed *(Elodea canadensis)* brittle naiad *(Najas minor)* sago pondweed *(Stuckenia pectinata)*	water star-grass *(Heteranthera dubia)* Euasian water-milfoil *(Myriophyllum spicatum)* spiny naiad *(Najas marina)* curly-leaf pondweed *(Potamogeton crispus)* leafy pondweed *(Potamogeton foliosus)*	20%
14	0.7	curly-leaf pondweed *(Potamogeton crispus)* coontail *(Ceratophyllum demersum)*	brittle naiad *(Najas minor)*	50%
15	0.9	coontail *(Ceratophyllum demersum)* sago pondweed *(Stuckenia pectinata)*	brittle naiad *(Najas minor)*	50%
16	0.6	brittle naiad *(Najas minor)* sago pondweed *(Stuckenia pectinata)*		20%
17	0.4	brittle naiad *(Najas minor)* sago pondweed *(Stuckenia pectinata)* Fries's pondweed *(Potamogeton friesii)*		50%
18	3.3	coontail *(Ceratophyllum demersum)* sago pondweed *(Stuckenia pectinata)*	curly-leaf pondweed *(Potamogeton crispus)* long-leaved pondweed *(Potamogeton nodosus)*	50%

SAV Bed	Size (acres)	Dominant Species	Associate Species	Estimated Areal Cover
19	1.6	southern naiad *(Najas guadalupensis)* brittle naiad *(Najas minor)*	Fries's pondweed *(Potamogeton friesii)*	20%
20	0.8	sago pondweed *(Stuckenia pectinata)*		50%
21	0.8	coontail *(Ceratophyllum demersum)*		20%
22	0.8	white water-lily *(Nymphaea odorata)*		20%
23	2.7	sago pondweed *(Stuckenia pectinata)* brittle naiad *(Najas minor)*	leafy pondweed *(Potamogeton foliosus)*	50%

Table 5.1.4.5-1: Aquatic Invasive Species

Common Name	Scientific Name	Area (acres)	Average Density
Eurasian water-milfoil	*Myriophyllum spicatum*	69.8	patchy-dense
curly-leaf pondweed	*Potamogeton crispus*	40.6	patchy
brittle naiad	*Najas minor*	36	patchy
starry stonewort	*Nitellopsis obtusa*	2.9	patchy
spiny naiad	*Najas marina*	0.64	sparse

French Landing Dam



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French Landing Hydroelectric Project
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Figure 5.1.4.1-1:
Aquatic Survey Point-Intercept Locations

Legend

- Survey Area
- Point Intercept Survey Location
- Rake Toss Location (Photic Zone)
- Not Surveyed (Outside Photic Zone)

Service Layer Credits: World Topographic Map: Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community
World Hillshade: Esri, NASA, NGA, USGS, FEMA
World Imagery: Maxar

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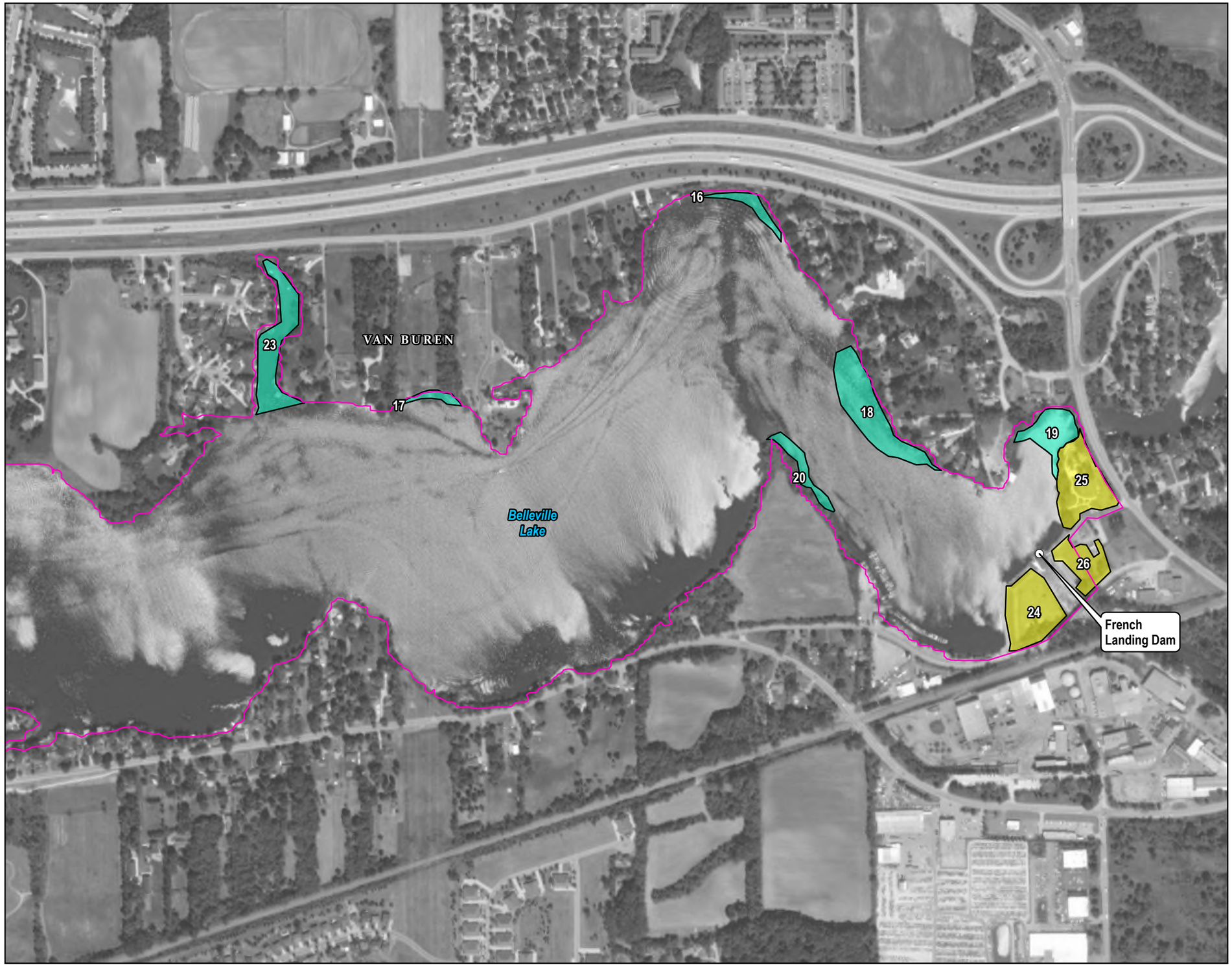

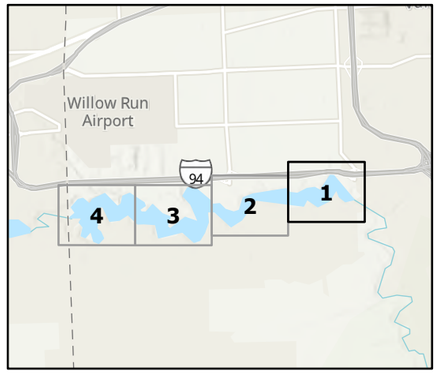

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Figure 5.1.4.1-2:
Field Surveyed Vegetation Communities
in Project Area
Map 1 of 4

Legend

- Survey Area

Vegetation Community

- Palustrine Emergent Marsh (PEM)
- Submerged Aquatic Vegetation (SAV)
- Parkland
- Municipality Boundary
- Van Buren Park

Service Layer Credits: World Topographic Map: Province of Ontario, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS
World Imagery: Maxar
World Hillshade: Esri, NASA, NGA, USGS

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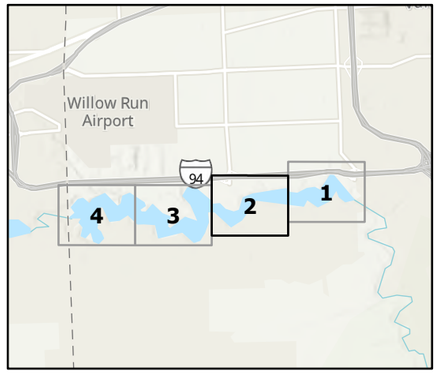

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Figure 5.1.4.1-2:
Field Surveyed Vegetation Communities
in Project Area
Map 2 of 4

Legend

- Survey Area

Vegetation Community

- Palustrine Emergent Marsh (PEM)
- Submerged Aquatic Vegetation (SAV)
- Parkland
- Municipality Boundary
- Van Buren Park

Service Layer Credits: World Topographic Map: Province of Ontario, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS
World Imagery: Maxar
World Hillshade: Esri, NASA, NGA, USGS

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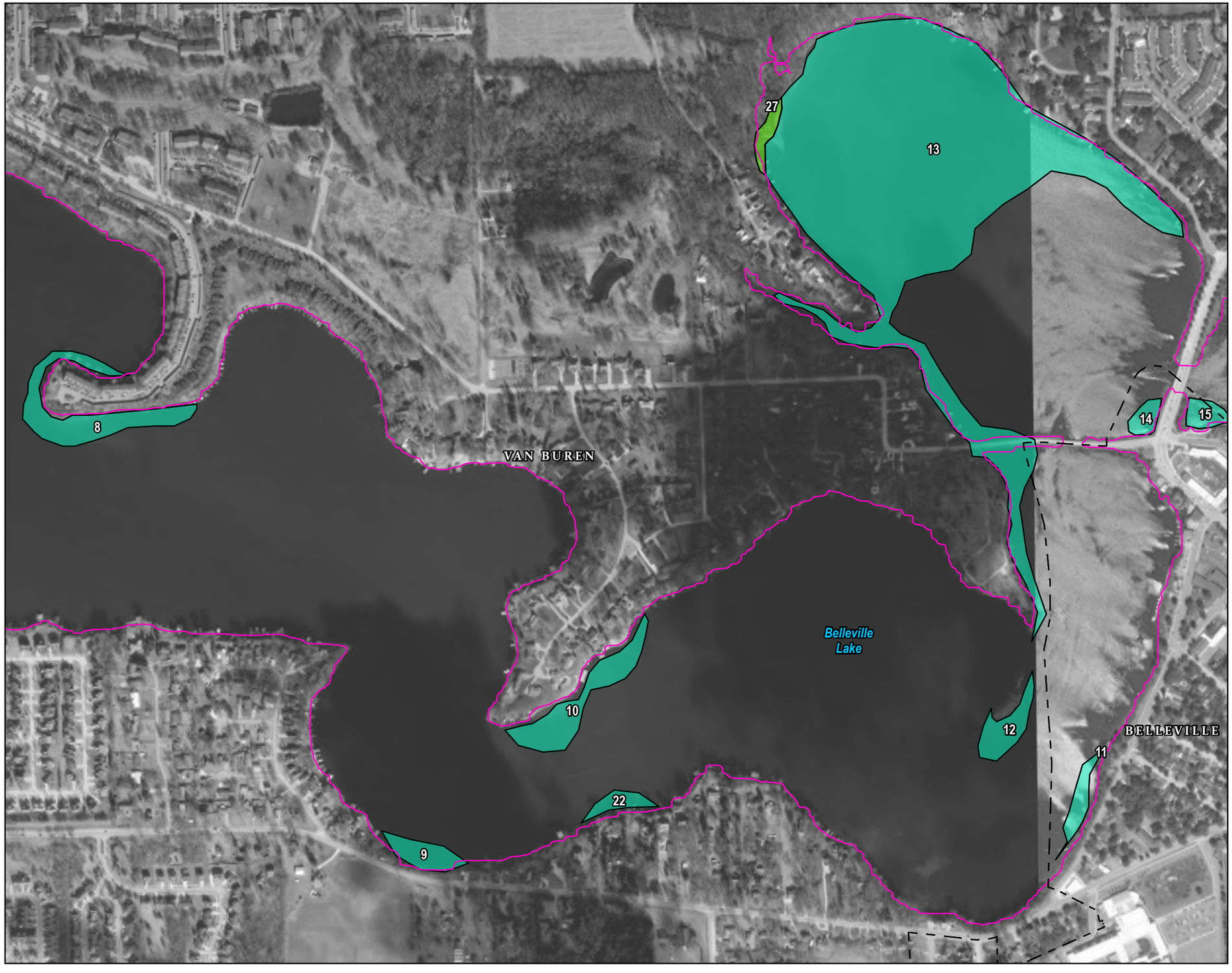

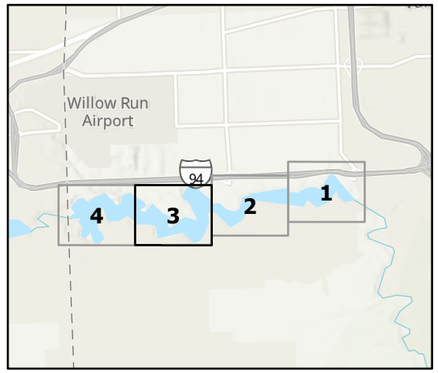

License Application
French Landing Hydroelectric Project
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Figure 5.1.4.1-2:
Field Surveyed Vegetation Communities
in Project Area
Map 3 of 4

Legend

- Survey Area

Vegetation Community

- Palustrine Emergent Marsh (PEM)
- Submerged Aquatic Vegetation (SAV)
- Parkland
- Municipality Boundary
- Van Buren Park

Service Layer Credits: World Topographic Map: Province of Ontario, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS
World Imagery: Maxar
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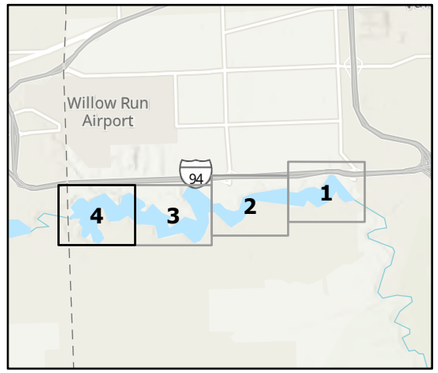

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French Landing Hydroelectric Project
FERC No. 9951

Figure 5.1.4.1-2:
Field Surveyed Vegetation Communities
in Project Area
Map 4 of 4

Legend

- Survey Area

Vegetation Community

- Palustrine Emergent Marsh (PEM)
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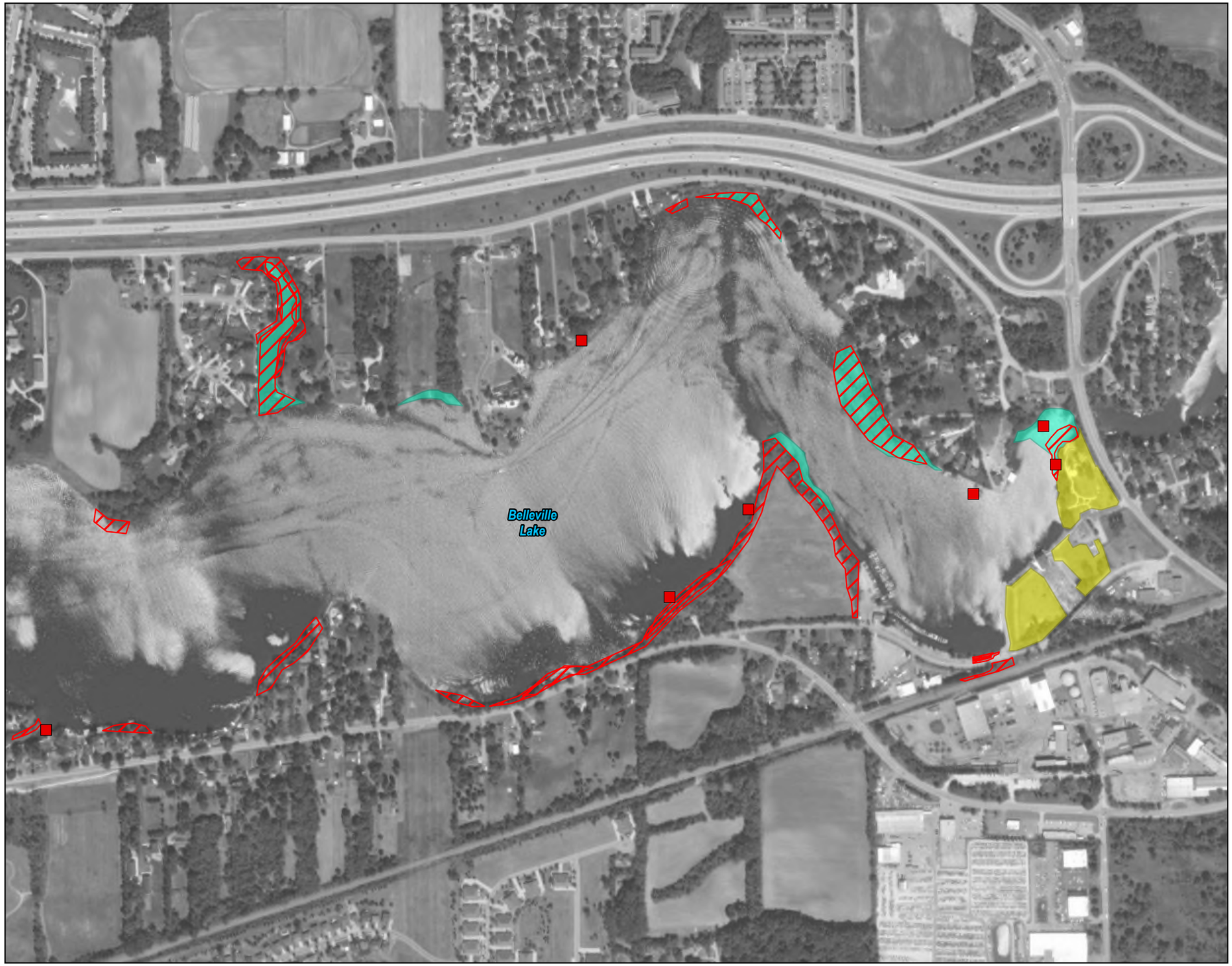

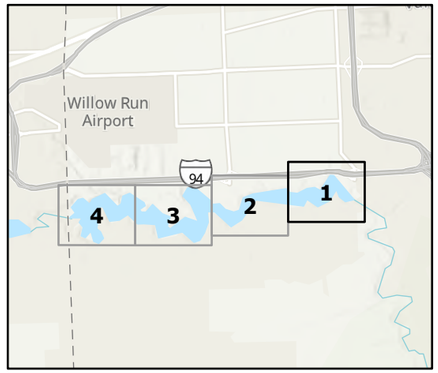

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FERC No. 9951

Figure 5.1.4.5-1:
Invasive Species Locations
Map 1 of 4

Legend

- Invasive Plant Location
- Invasive Stand

Vegetation Community

- Palustrine Emergent Marsh (PEM)
- Submerged Aquatic Vegetation (SAV)
- Parkland

Service Layer Credits: World Topographic Map: Province of Ontario, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS
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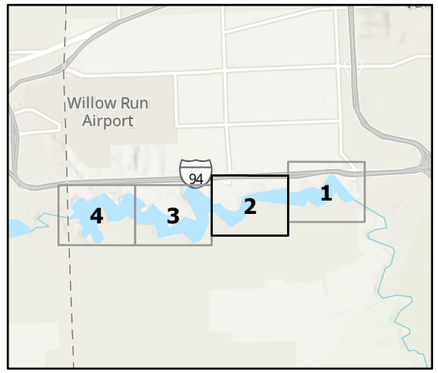

License Application
French Landing Hydroelectric Project
FERC No. 9951

Figure 5.1.4.5-1:
Invasive Species Locations
Map 2 of 4

Legend

- Invasive Plant Location
- Invasive Stand

Vegetation Community

- Palustrine Emergent Marsh (PEM)
- Submerged Aquatic Vegetation (SAV)
- Parkland

Service Layer Credits: World Topographic Map: Province of Ontario, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS
World Imagery: Maxar
World Hillshade: Esri, NASA, NGA, USGS

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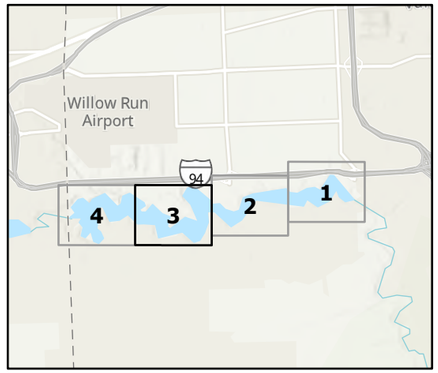
Belleville Lake



License Application
French Landing Hydroelectric Project
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Figure 5.1.4.5-1:
Invasive Species Locations
Map 3 of 4

Legend

- Invasive Plant Location
- Invasive Stand

Vegetation Community

- Palustrine Emergent Marsh (PEM)
- Submerged Aquatic Vegetation (SAV)
- Parkland

Service Layer Credits: World Topographic Map: Province of Ontario, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS
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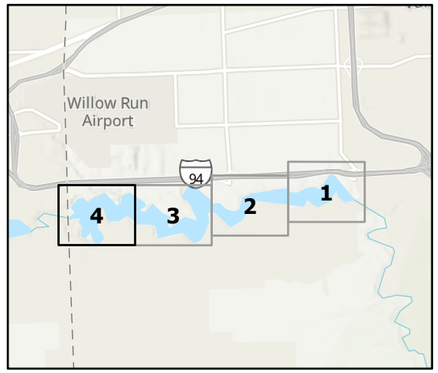

License Application
French Landing Hydroelectric Project
FERC No. 9951

Figure 5.1.4.5-1:
Invasive Species Locations
Map 4 of 4

Legend

- Invasive Plant Location
- Invasive Stand

Vegetation Community

- Palustrine Emergent Marsh (PEM)
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Service Layer Credits: World Topographic Map: Province of Ontario, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS
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5.2 Environmental Analysis

Section 4.2.2 of FERC's SD2 presented a preliminary list of environmental issues it identified to be addressed in the NEPA review. The resource issues identified include:

Effects of continued project operation and maintenance on riparian, littoral, and wetland habitat and associated wildlife.

The proposed Project boundary follows elevation 652.0 feet in all areas except in the vicinity of the dam, powerhouse, substation, and French Landing Park. As such, there is limited upland or riparian habitat within the Project boundary. The existing upland and riparian areas within the Project boundary, including the impoundment shoreline, is developed land with limited riparian and littoral habitat. The wetlands which occur within the Project boundary have been established under the current operating procedures. The Licensees are proposing to continue to operate the Project under its current run-of-river mode, where Project outflows approximate inflows. The Project impoundment has no significant storage and pond level variation is limited to naturally occurring flows. The Project operation regime prevents impacts to wildlife and botanical resources that would typically be associated with water level fluctuations. As a result, no impacts are anticipated due to continued Project operation.

Effects of continued project and maintenance on the presence and spread of terrestrial invasive species.

Terrestrial habitat for invasive animal species in the Project boundary is limited to Project facilities and French Landing Park. These areas are developed land with minimal available habitat. As discussed in Section 5.1.3.2, only one terrestrial invasive species (Nutria) which may occur in the Project area has been listed on the MDNR Invasive Species Watch List. Nutria has not been observed in the Project area and has not been confirmed in the wild in Michigan. As the Project will continue to operate under its current operating procedure with no changes to Project structures, there are no anticipated effects to the presence or spread of terrestrial invasive species due to continued Project operation.

As noted in Section 5.1.2.1 and 5.1.4.5, invasive plant species are located in areas along the shoreline and on the western end of Belleville Lake. Glossy buckthorn, autumn olive, common buckthorn, and European bush honeysuckles were the most common terrestrial invasive plant species noted, all occurring with patchy density at the edges of treed areas along the shoreline. Eurasian water-milfoil and curly-leaf pondweed were the more prevalent aquatic invasive species found in the Project area, though these plants had typically sparse to patchy coverage. The Project operates in a run-of-river mode, which minimizes fluctuations to reservoir water levels that could cause the spread of invasive plant species. Continued operation of the Project in this mode is not anticipated to spread existing invasive plant species which are located within the reservoir.

5.2.1 Agency Recommended Mitigation

MDNR filed comments on the French Landing DLA with FERC on February 25, 2025. In the letter, MDNR recommended mitigation strategies related to invasive species management at the Project. MDNR staff recommended that the Licensees work with the HRWC and the local Cooperative Invasive Species Management Area (CISMA) to develop strategies to educate property owners and Belleville Lake users about aquatic invasive species. They recommended the program should use the most up-to-date practices, such as early detection and rapid response for watchlist species. The Licensees have provided responses to the comments received in Appendix E-1.

5.2.2 Applicant Proposed Mitigation

The Licensees are proposing to continue to operate the Project in a run-of-river mode, which minimizes water surface elevation fluctuations in Belleville Lake and maintains discharge from the Project so that the flow in the Huron River immediately downstream from the tailrace approximate inflow into the Project reservoir.

To address aquatic and terrestrial invasive species, the Licensees are proposing to develop an Invasive Species Management Plan. The plan will include strategies to prevent the establishment and/or spread of invasive species due to Project operation and maintenance activities, including recreation and possible construction activities. The plan will be developed in coordination with MDNR.

5.2.3 Unavoidable Adverse Effects

As there are no proposed changes to Project operation, there are no significant unavoidable adverse effects anticipated to wildlife and botanical resources due to continued Project operation.

5.3 References

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6 THREATENED AND ENDANGERED SPECIES

6.1 Affected Environment

The Federal Endangered Species Act (ESA) was passed in 1973 and serves to protect threatened and endangered (TE) species and their habitats, as well as to promote their conservation and recovery. Species are classified as either "endangered (E)" or "threatened (T)" under the ESA. Endangered species are at risk of extinction throughout all or a considerable part of their range. Threatened species are prone to becoming endangered in the near future.

Plant and animal species in Michigan are also protected under the Endangered Species Act of the State of Michigan (Part 365 of PA 451, 1994 Michigan Natural Resources and Environmental Protection Act). Species are listed as either "endangered (E)", threatened (T)", "special concern (SC)", and "probably extirpated (X)" under Michigan's ESA. In Michigan, species that are of concern are not afforded legal status, but are listed as such because of declining or relict populations in the State. Should these species continue to decline, they would be recommended for threatened or endangered status (Michigan State University, 2009).

The vast majority of the Project boundary is water, with the exception of the vicinity of the dam, powerhouse, substation, and French Landing Park. As such, there is limited upland or riparian habitat within the Project boundary. This section presents an overview of the TE species, including wildlife, fish, and plants as well as critical and significant habitats and natural communities which may exist in the vicinity of the Project. For the purposes of this section of the license application, only those species that are federally or state-listed (i.e., Michigan) as endangered, threatened, or of special concern are discussed below.

The USFWS's IPaC and was used to conduct a search of the Project area to identify any species listed under the federal ESA as threatened or endangered that should be taken under consideration when evaluating any potential impacts of the Project (USFWS, 2024). In addition to USFWS's IPaC, the MNFI database was reviewed to identify any state-listed species which may occur in the Project area. The MNFI database provides information at a county level, rather than a site specific location for TE species.

The IPaC search conducted in April 2025 found one reptile, two mammals, one bird, one clam, one insect, and one flowering plant may be located within the Project boundary (USFWS, 2024). The list of species identified in the IPaC search that may occur in the Project boundary are shown in Table 6.1-1. These species are described in the following sections.

The MNFI search found numerous state listed species which have been observed in Wayne County. Table 6.1-2 shows listed species and their state status. Note, only species whose location is unknown in relation to the Project boundary are listed in the table. As no state listed botanical or mussel species were observed during the *Botanical Resources Survey* and the *Freshwater Mussel Habitat and Assessment Survey*, botanical and mussel species which may occur in the county are not included in the table. In addition, there were no recorded stated listed fish species

recorded during fish surveys conducted in Belleville Lake and downstream from the Project from 1982-2012 (Section 4.1.1.1), as such, no fish are shown in the table.

6.1.1 Critical and Special Status Habitats

There are no critical habitats for federally endangered species in the Project vicinity (USFWS, 2024).

6.1.2 Threatened and Endangered Fish and Freshwater Aquatic Species

Based on the results of the IPaC search, there is one federally endangered clam species that has been observed in Wayne County, the snuffbox mussel (*Epioblasma triquetra*); however, the field survey conducted in 2023 for the *Freshwater Mussel Habitat and Assessment Survey* found no snuffbox mussel in the Project area (Section 4.1.8). No other fish or aquatic wildlife species are known to occur in the Project area or were observed during relicensing studies.

6.1.3 Threatened and Endangered Wildlife Species

6.1.3.1 Reptiles

The Eastern Massasauga (*Sistrurus catenatus*) is a federally threatened snake species, likely to become endangered within the foreseeable future through a significant portion of its range. Eastern Massasaugas are small snakes with thick bodies, heart-shaped heads, and vertical pupils. The average length of an adult is approximately two feet. Adult Eastern Massasaugas are gray or light brown with large, light-edged chocolate brown blotches on the back and smaller blotches on the sides and there is a narrow, white stripe on its head. The snake's belly is marbled dark gray or black. Several dark brown rings are on its tail and its rattle is gray-yellow and horny. Young snakes have the same markings but are more vividly colored with triangular shaped heads and vertical pupils (USFWS, 2024). Eastern Massasaugas live in wet areas including wet prairies, marshes, fens, sedge meadows, peatlands, and low areas along rivers and lakes. Massasaugas also use adjacent uplands (shrubland, open woodlands, prairie) during part of the year. They often hibernate in crayfish burrows but may also be found under logs and tree roots or in small mammal burrows. Unlike other rattlesnakes, massasaugas hibernate alone. No critical habitat has been designated for this species (USFWS, 2024).

6.1.3.2 Mammal Species

The Indiana Bat (*Myotis sodalis*) and the Northern Long-Eared Bat (*Myotis septentrionalis*) are listed as federally endangered (USFWS, 2022).

Indiana Bat

The Indiana Bat is a medium-sized bat which loosely resembles the Little Brown Bat (*Myotis lucifugus*); however, it differs in coloration. It has a dull grayish chestnut fur rather than bronze,

with the basal portion of the hairs on the back a dull-lead color. This bat's underparts are pinkish to cinnamon, and its hind feet are smaller and more delicate than the Little Brown Bat. The calcar, or heel of the foot, is strongly keeled. There is a final critical habitat for this species, however, the location of the critical habitat is not available (USFWS, 2019).

The Indiana Bat was listed as endangered in 1967 due to episodes of people disturbing hibernating bats in caves in the winter, resulting in the death of large numbers of bats. Indiana Bats are vulnerable to disturbance because they hibernate in large numbers in only a few caves (the largest hibernation caves support 20,000 to 50,000 bats). Commercialization of caves, loss of summer habitat, pesticides and other contaminants, and most recently, the disease white-nose syndrome, are all additional reasons for the Indiana Bat's population decline (USFWS, 2019).

Northern Long-Eared Bat

The Northern Long-Eared Bat is a medium-sized bat about 3 to 3.7 inches in length and a wingspan of 9 to 10 inches. This bat is distinguished by its long ears, particularly as compared to other bats in its genus, Myotis. This bat was listed as endangered by the USFWS following population decline due to white-nose-syndrome. White-nose syndrome is a fungal disease affecting hibernating bats that was introduced to the east coast of North America in 2006. Named for the white fungus that appears on the muzzle and other parts of hibernating bats, white-nose syndrome is associated with extensive mortality of bats (USFWS, 2022).

The Northern Long-Eared Bat range is extensive, and spans across the northeast United States, into the northcentral United States, and north into the Canadian provinces. Northern Long-Eared Bats hibernate in caves and abandoned mine shafts during winter, and during the summer will often roost in crevices, cavities, or under exfoliating bark of tress in forested areas and in certain instances on bridges and other structures (USFWS, 2022).

6.1.3.3 Bird Species

There was one bird species, the Red Knot (*Calidris canutus rufa*), identified in the IPaC search which may occur within the Project boundary (USFWS, 2017).

Red Knot

The Red Knot is listed as endangered and is a type of shorebird known as a sandpiper. At about 10 inches in length and 4.8 ounces in weight, it is a larger sandpiper. Its wingspan is usually 20 to 22 inches. This bird has short, thick legs and a short, straight bill. The Red Knot is a dull gray color throughout most of the year, however, when in breeding its plumage displays vibrant russet red colors. Male and female Red Knots look similar. Red Knots are one of the most colorful types of sandpipers (USFWS, 2017). Red Knot populations may be particularly susceptible to climate change, which is likely to affect the arctic tundra ecosystem where the bird breeds, coastal habitats due to rising sea levels, food resources throughout the Red Knots' range, and storm and weather patterns (USFWS, 2017). The shorebird only needs to be considered if actions occur along coastal

areas during the Red Knot migratory window, which is between May 1 and September 30 (USWFS, 2017). Given that the Project is not located along a coastal area, there is no potential impact to the Red Knot as a result of the ongoing operation of the Project.

Migratory Birds

The IPaC search results also show 16 migratory birds of federal conservation concern that may potentially inhabit the Project area. Birds of Conservation Concern (BCC) and state listed birds which have been observed in Wayne County are shown in table Table 6.1.3.3-1. BCC are migratory or non-migratory bird species that are the highest conservation priorities (beyond those already designated as federally threatened or endangered) due to population trends, threats on breeding and nonbreeding grounds, and size of breeding and nonbreeding ranges. Birds which are identified as BCC species only in particular Bird Conservation Regions are listed as BCC-BCR in Table 6.1.3.3-1. The Bald Eagle (*Haliaeetus leucocephalus*) is listed as a Non-Bird of Conservation Concern. Non-Birds of Conservation Concern (Non-BCC) are birds that warrant special attention because of the Bald and Golden Eagle Protection Act or for potential susceptibilities in offshore areas from certain types of development or activities. The Bald Eagle and Golden Eagle are not federally listed but are protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

6.1.3.4 Insects

On December 15, 2020, the USFWS found that listing the Monarch Butterfly (*Danaus plexippus*) as endangered or threatened under the ESA was warranted but was precluded by work on higher priority listing actions. With this listing decision, the Monarch Butterfly became a candidate species for listing under the ESA, and its status will be reviewed each year until it is no longer a candidate. While it is not a state listed species, it is a Species of Greatest Conservation Need (SGCN) in Michigan.

In eastern North America, monarch butterflies travel north in the spring, from Mexico to Canada, over two to three successive generations, breeding along the way. The final generation in the fall makes the return trip to wintering sites in Mexico and coastal California. Unlike previous generations, which complete their life cycle in four weeks, these “super generation” monarch butterflies live for six to eight months and may travel thousands of miles to return to wintering grounds. These monarch butterflies then begin the multi-generational migration the following spring. Because monarch butterflies travel long distances, it is critical to maintain reliable sources of nectar plants for them to feed on and ample milkweed on which to lay their eggs. Because monarch butterflies are solely dependent on milkweed during the caterpillar stage, efforts to boost the number of milkweed stems are the basis for many monarch butterfly conservation plans (USFWS, 2020).

Within the Project boundary, there is limited available habitat for the monarch butterfly. Upland areas are generally maintained lawns located near Project facilities including the French Landing

Dam and French Landing Park. These areas are maintained by lawn mowing during the growing season, typically from May to mid-October. The *Botanical Resources Survey* observed some occurrences of common milkweed (*Asclepias syriaca***)** and swamp milkweed (*Asclepias incarnata*), as well as nectar rich flowering species such as boneset (*Eupatorium perfoliatum)* and joe-pye weed (*Eutrochium maculatum*) in pockets along shoreline areas. In addition, water-willow and lotus species located at the westernmost end of the impoundment may attract monarch butterflies, though no field observation of butterflies were noted during the field survey.

6.1.4 Threatened and Endangered Botanical Resources

In addition to the animal and insect species recorded within the Project area, a federally threatened and state endangered plant has also been recorded in Wayne County, the Eastern Prairie Fringed Orchid (*Platanthera leucophaea*); however, the field survey conducted for the *Botanical Resources Study* did not observe any occurrences of Eastern Prairie Fringed Orchid within the Project boundary. Although the Eastern Prairie Fringed Orchid was not observed, several state listed species were found. Fifty patches of water-willow (*Justicia americana*) were recorded during the shoreline survey, covering 10.5 acres of habitat. Water-willow is a State Threatened forb found in shallow water along rivers where it forms dense colonies (MDNR 2023a, MNFI 2023a). It is very local, found along the Huron, Raisin, and St. Joseph Rivers. The patches in the Project area are typically 3-8 feet wide and 10-20 feet in length. Water-willow occurs in most areas with viable habitat in the west half of Belleville Lake, including at the base of forested hillsides and bluffs, around docks, and among rip-rap.

In addition to water-willow, American lotus (*Nelumbo lutea*) was observed in the Project area. American Lotus is a State Special Concern species that is known to occur in southern Lower Michigan in marshes, particularly near the Great Lakes (MDNR 2023b, MNFI 2023b). The population in the Project area is well-established at the west end of Belleville Lake. There is dense (>75%) American lotus cover across 67.8 acres, and an additional 25 acres with sparse cover (<25%) co-occurring with white water-lily. The population appeared healthy with good viability, though it is impacted by boat traffic and residential dock access. A water ski course at the southwest corner of Belleville Lake cuts along the edge of the population. Potential habitat downstream of existing populations within the Project area is restricted by deep water, hardened shorelines, recreation, and development.

Table 6.1-1: Federally Listed Species Identified in IPaC Search that May Occur in the Project Boundary

Common Name	Scientific Name	Type	Federal Status	State Status
Red Knot	*Calidris canutus rufa*	Bird	E	--
Monarch Butterfly	*Danaus Plexippus*	Insect	C	SGCN
Northern long-eared bat	*Myotis septentrionalis*	Mammal	E	--
Indiana bat	*Myotis sodalis*	Mammal	E	E
Northern rifflesheIl	*Epioblasma rangiana*	Mollusk	E	E
Eastern Prairie Fringed Orchid	*Platanthera leucophaea*	Plant	T	E
Eastern massasauga	*Sistrurus catenatus*	Reptile	T	T

Source: Michigan State University, n.d., and USFWS, 2024

Table 6.1-2: State-Threatened and Endangered Wildlife Species Recorded in Wayne County, MI

Common Name	Scientific Name	Type	State Status
Mudpuppy	*Necturus maculosus*	Amphibian	SC
Pickerel frog	*Lithobates palustris*	Amphibian	SC
Small-mouthed salamander	*Ambystoma texanum*	Amphibian	E
Spotted turtle	*Clemmys guttata*	Amphibian	T
Blazing star borer	*Papaipema beeriana*	Insect	SC
Leafhopper	*Flexamia reflexa*	Insect	T
Regal fern borer	*Papaipema speciosissima*	Insect	SC
Culvers root borer	*Papaipema sciata*	Insect	T
American bumble bee	*Bombus pensylvanicus*	Insect	E
Russet-tipped clubtail	*Stylurus plagiatus*	Insect	E
Yellow bumble bee	*Bombus fervidus*	Insect	SC
Pipevine swallowtail	*Battus philenor*	Insect	SC
Laura's snaketail	*Stylurus laurae*	Insect	SC
Dukes' skipper	*Euphyes dukesi*	Insect	T
Newman's brocade	*Meropleon ambifusca*	Insect	SC
Elusive snaketail	*Stylurus notatus*	Insect	T
Red-shouldered hawk	*Buteo lineatus*	Insect	SC
Yellow banded bumble bee	*Bombus terricola*	Insect	SC
Mitchell's satyr	*Neonympha mitchellii mitchellii*	Insect	E

Common Name	Scientific Name	Type	State Status
Regal fritillary	*Speyeria idalia*	Insect	X
Swamp metalmark	*Calephelis muticum*	Insect	E
Northern amber bumble bee	*Bombus borealis*	Insect	SC
Rusty-patched bumble bee	*Bombus affinis*	Insect	E
Hoosier locust	*Paroxya hoosieri*	Insect	SC
Least shrew	*Cryptotis parva*	Mammal	T
Little brown bat	*Myotis lucifugus*	Mammal	T
Indiana bat	***Myotis sodalis***	**Mammal**	**E**
Eastern fox snake	*Pantherophis gloydi*	Reptile	T
Butler's garter snake	*Thamnophis butleri*	Reptile	SC
Eastern massasauga	***Sistrurus catenatus***	**Reptile**	**T**

Species in bold indicate species which were identified in the IPaC search of the immediate Project Vicinity
Source: Michigan State University, n.d., and USFWS, 2024

Table 6.1.3.3-1: Federal and State Listed Bird Species Recorded in Wayne County, MI

Common Name	Scientific Name	Type	Federal Status	State Status
Red Knot	***Calidris canutus rufa***	**Bird**	**E**	**--**
Osprey	*Pandion haliaetus*	Bird	--	SC
Peregrine falcon	*Falco peregrinus*	Bird	--	T
Bald eagle	*Haliaeetus leucocephalus*	Bird	Non-BCC Vulnerable	SC
Marsh wren	*Cistothorus palustris*	Bird	--	SC
Cerulean warbler	*Setophaga cerulea*	Bird	--	T
Common tern	*Sterna hirundo*	Bird	--	T
Grasshopper sparrow	*Ammodramus savannarum*	Bird	BCC-BCR	SC
Henslow's sparrow	*Centronyx henslowii*	Bird	BCC	E
Least bittern	*Ixobrychus exilis*	Bird	--	T
Black-crowned night-heron	*Nycticorax nycticorax*	Bird	--	SC
Prothonotary warbler	*Protonotaria citrea*	Bird	--	SC
Hooded warbler	*Setophaga citrina*	Bird	--	SC
Dickcissel	*Spiza americana*	Bird	--	SC
King rail	*Rallus elegans*	Bird	--	E

Common Name	Scientific Name	Type	Federal Status	State Status
Forster's tern	*Sterna forsteri*	Bird	--	T
American Golden-plover	*Pluvialis dominica*	Bird	BCC	--
Black-billed Cuckoo	*Coccyzus erythropthalmus*	Bird	BCC	--
Bobolink	*Dolichonyx oryzivorus*	Bird	BCC	--
Canada Warbler	*Cardellina canadensis*	Bird	BCC	--
Chimney Swift	*Chaetura pelagica*	Bird	BCC	--
Golden-winged Warbler	*Vermivora chrysoptera*	Bird	BCC	--
Lesser Yellowlegs	*Tringa avipes*	Bird	BCC	--
Pectoral Sandpiper	*Calidris melanotos*	Bird	BCC	--
Red-headed Woodpecker	*Melanerpes erythrocephalus*	Bird	BCC	--
Rusty Blackbird	*Euphagus carolinus*	Bird	BCC-BCR	--
Semipalmated Sandpiper	*Calidris pusilla*	Bird	BCC-BCR	--
Upland Sandpiper	*Bartramia longicauda*	Bird	BCC-BCR	--
Wood Thrush	*Hylocichla mustelina*	Bird	BCC	--

Species in bold indicate species which were identified in the IPaC search of the immediate Project Vicinity

Source: Michigan State University, n.d., and USFWS, 2024

6.2 Environmental Analysis

FERC's SD2 identified effects of continued project operation and maintenance on federally listed endangered, threatened, candidate, and proposed species, and their habitats, in the vicinity of the Project, including: (1) the federally threatened northern long eared bat, Eastern prairie fringed orchid, and eastern massasauga; (2) the federally endangered Indiana bat, northern riffleshell, snuffbox mussel, rayed bean mussel, red knot, and piping plover; and (3) the monarch butterfly, a candidate species as a resource issue.

During the *Botanical Resources Survey* incidental wildlife observations were noted during the field event. No observations of any federally listed species noted above were found during the survey and the Eastern Prairie Fringed Orchid was not observed in the Project area. Similarly, the *Freshwater Mussel Habitat and Assessment Survey* did not observe any evidence of northern riffleshell, snuffbox mussel, or rayed bean mussel during field activities, as discussed in Section 4.1.8.

There is limited habitat available within the Project boundary for the federally listed species discussed in FERC's SD2. In addition, TE species that exist in the Project area, if any, have existed under the same general temporal operating pattern for the duration of the current license. The Licensees are not proposing to expand their current vegetation management practices or perform any additional activities that could affect the limited existing monarch butterfly habitat. The continued operation of the Project is not anticipated to affect TE species that may be present in the Project area.

6.2.1 Agency Recommended Mitigation

MDNR filed comments on the French Landing DLA with FERC on February 25, 2025. In the letter, MDNR recommended that the Licensees develop plans to mitigate deviations from run-of-river operation and drawdowns to protect threatened or endangered mussel species. The Licensees have provided responses to the comments received in Appendix E-1.

6.2.2 Applicant Proposed Mitigation

The Licensees are proposing to continue to operate the Project in a run-of-river mode, which minimizes water surface elevation fluctuations in Belleville Lake and maintains discharge from the Project so that the flow in the Huron River immediately downstream from the tailrace approximates the inflow into the Project reservoir.

In addition to continued run-of-river operation, the Licensees are proposing to develop an Operations Compliance Monitoring Plan which will include strategies to minimize impacts to threatened or endangered species should a drawdown be necessary. The plan is discussed in more detail in Section 3.2.4.

6.2.3 **Unavoidable Adverse Effects**

Continued operation of the Project, as proposed, will have no significant unavoidable adverse impacts on TE species.

6.3 References

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U.S. Fish and Wildlife Service. (USFWS). 2025. IPaC Information for Planning and Consultation. https://ipac.ecosphere.fws.gov/. Date accessed 4/20/2025.

7 RECREATION AND LAND USE

7.1 Affected Environment

Recreational and non-recreational land use in the Project vicinity is dominated by developed land of varying intensities. Recreation along the Huron River and surrounding areas is abundant, including natural areas that provide activities such as hiking, bird-watching, canoeing, hunting, and fishing (HRWC, 2011). In addition, there are numerous public parks that offer day use activities playgrounds, picnicking, ice skating, basketball, tennis, and baseball. Five parks within the Huron-Clinton Metropolitan Park system border the Huron River. These parks offer additional opportunities for hiking, boating, canoeing, and picnicking (MDNR, 2002). There are numerous facilities providing recreational opportunities in the region, discussed in Section 7.1.2.

The major land uses of the river basin and within the immediate Project vicinity are discussed in Section 1.4. The Project boundary is within the Van Buren Charter Township and City of Belleville in Wayne County. Non-recreational land uses in the area include industrial, commercial, and residential. Commercial and residential development is concentrated within the central area of Belleville Lake with more dense condominium developments along the northern shore in Van Buren. Low to medium density developed land continues upland away from the Project impoundment, with some denser developed commercial plazas located near major transportation corridors, and an airport which serves freight, corporate, and general aviation located north of the Project in Van Buren and the Ypsilanti Township.

No Project lands are included in, or under study for inclusion in, the National Trails System (NPS, 2024a) or the National Wilderness Preservation System (UMont, 2024). The Project site is not located within or adjacent to any river segment that is designated as a part of, or under study for inclusion in, the National Wild and Scenic River System (NPS, 2024b).

Listed in 1982, and updated in 1995, the Huron River, from the headwaters to mouth excluding Kent Lake is included in the Nationwide Rivers Inventory (NRI) (NPS, 2024b) and is a designated State Natural River. The River is described as an all-around good river flowing through a heavily urbanized area in southeast Michigan. A pleasant slow-moving stream flowing through farmland, several cold water lakes, several metroparks, the City of Ann Arbor and the fringe of Detroit. The reach in the Project area is listed in the NRI for its outstanding fish, historic, and recreational value (NPS, 2024b).

Belleville Lake is a popular fishing destination. MDNR conducted an angler creel survey in 2005 (Braunscheidel, 2013), which found that the total boat effort was estimated at 45,875 angler hours and 11,531 trips. Shore fishing was estimated as 24,409 angler hours and 10,370 trips for a total angling effort of over 70,000 angler hours with almost 22,000 angler trips. A study of creel surveys conducted from 2000 through 2006 on 20 large, inland Michigan lakes showed Belleville Lake to have the highest fishing pressure per acre of any lake in the study. Fish catch rates were comparable to many of the lakes in the study, 0.62 fish/hr or 34.7 fish/acre for Belleville Lake compared to an average of 1.17 fish/hr or 27.5 fish/acre for the other lakes. Major fish species caught by anglers

during this creel survey (from highest to lowest numbers) included smallmouth bass, bluegill, walleye, largemouth bass, white bass, and channel catfish, for a total estimated catch of over 43,000 fish.

7.1.1 Regional Recreation Opportunities

The Project area lies within the Southeast Michigan Recreation System, which includes recreation opportunities in the counties of St. Clair, Macomb, Oakland, Livingston, Washtenaw, Wayne, and Monroe. The Southeast Michigan Council of Governments (SEMCOG) is the regional planning agency that maintains a comprehensive database of information related to recreation in the seven counties. The system includes more than 2,300 parks, covering 214,000 acres. They are connected by more than 400 miles of trails and greenways, and 450 miles of designated water trails. The resources are managed by a wide variety of stakeholders and collectively provide a critical public service to more than 4.7 million residents (SEMCOG, 2019). The amenities in southeast Michigan parks are plentiful, including playgrounds, picnic areas, paved trails, restrooms, natural areas, fishing areas, boat launches, cross country ski trails, beaches, splash pads, dog parks, campgrounds, and numerous sporting activities such as baseball, basketball, tennis, and golf.

The Project is located completely within Wayne County, which provides 151.3 miles of trails, 101.1 miles of water trails, and 28,962 acres of park land, or 16 acres per 1,000 residents. The terminus of the Project impoundment abuts Washtenaw County, which provides an additional 50.7 miles of trails, 44.8 miles of water trails, and 38,695 acres of parks, or 112 park acres per 1,000 residents (SEMCOG, 2019).

Within 15 miles of the Project impoundment (approximately a half hour drive) there are over 500 land conservation or recreational areas provided by both public agencies and private vendors (MDNR, 2019). The opportunities include parks, nature preserves, golf courses, marinas, and private clubs. In addition, there are 34 conservation easements managed by various public and private groups including Ann Arbor Greenbelt, Ann Arbor Township, City of Ypsilanti, Legacy Land Conservancy, EGLE, Pittsfield Charter Township, Southeast Michigan Land Conservancy, Superior Township, and Washtenaw County Parks and Recreation Commission. These easement areas total approximately 1,850 acres of land. Conservation and Recreation opportunities within 15 miles of the Project are depicted in Figure 7.1.1-1.

The Huron River Water Trail is a 104-mile inland paddling trail that spans 5 counties and 30 communities in Southeast Michigan. The trail has 14 portages, including a portage at the Project. From the rapids at Delhi and Dexter to the placid flat waters at the entrance to Lake Erie, the river offers a variety of paddling experiences.

Immediately downstream of the French Landing Dam are three (3) connected large parks managed by the Huron-Clinton Metropark Authority. These parks are the Lower Huron Metropark, Willow Metropark, and Oakwoods Metropark. These parks are not within the Project boundary. Recreation

sites immediately downstream of the Project are depicted in Figure 7.1.1-2. Each park has direct access to the Huron River and a user fee of $10 daily, with annual vehicle passes also available.

- **Lower Huron Metropark** provides 1,256 acres of mature woodlands, grassy meadows, and easy access to the Huron River. Amenities offered at the park include a splashpad, pool with waterslide, playgrounds, boat rental, canoeing, kayaking, camping, cross-country skiing, fishing, hiking, and sporting activities with concessions (HCMPA, 2016).

- **Willow Metropark** provides 1,532 acres of mature woodlands and scenic views of the Huron River. The park offers canoeing, kayaking, fishing, hiking, sledding, biking, picnicking, and various sporting activities with concessions. For additional fees the park also provides bike rental, boat rental, a pool, golf, and disc golf (HCMPA, 2018).

- **Oakwoods Metropark** lies south of Willow Metropark and provides 1,756 acres of well-tended trails that meander through mature woodlands, a Nature Center, fishing opportunities, and a designated monarch butterfly waystation. The park also provides biking, canoeing, kayaking, horseback riding, cross country skiing, and boat rental (for an additional fee) (HCMPA, 2018).

Immediately upstream of the Project is the Ford Lake Hydroelectric Project (FERC No. P-5334) managed by the Charter Township of Ypsilanti. The Ford Lake project area offers numerous recreational opportunities as part of the Ford Lake Park System, including fishing, canoeing, boating, picnicking, nature observation, sightseeing, and walking/jogging. The Ford Lake Park System consists of nine recreation areas, including: five developed parks adjacent to Ford Lake, an island in the middle of the lake, two undeveloped parks along the Huron River just downstream of the Ford Lake dam, and the Grove Road Overlooks (Ypsilanti, 2024). When staffed, Ford Lake Park has an entrance fee of $5, while Loonfeather, North Bay and North Hydro Park have $3 admission fees. Recreation sites immediately upstream of the Project are shown on Figure 7.1.1-2. Parks in the Ford Lake Park System include:

- **North Bay Park**: The North Bay Park is located on the north shore of Ford Lake near the Ford Ypsilanti Plant, abutting the city of Ypsilanti. It is adjacent to the Eagle Crest Golf Club. This park is staffed from mid-May through Labor Day with Park attendants and rangers. This park offers a trail/boardwalk system that provides shore angling opportunities as well as picnic areas, a playground, and open space. Access to Ford Lake is provided for sightseeing and fishing (Ypsilanti, 2024).

- **Huron River Park**: This park consists of undeveloped land with woodlands located across from the Civic Center complex with frontage along the south shore of Ford Lake. The steep slopes limit development potential (Ypsilanti, 2024).

- **Grove Road Overlooks**: These three roadside areas with benches are located along Grove Road and provide key views of Ford Lake (Ypsilanti, 2024).

- **Big Island Park**: This is an island area in the middle of Ford Lake, about two-thirds of the way upstream from the dam. The island is accessible only by boat and offers a small open space area for passive recreation (Ypsilanti, 2024).

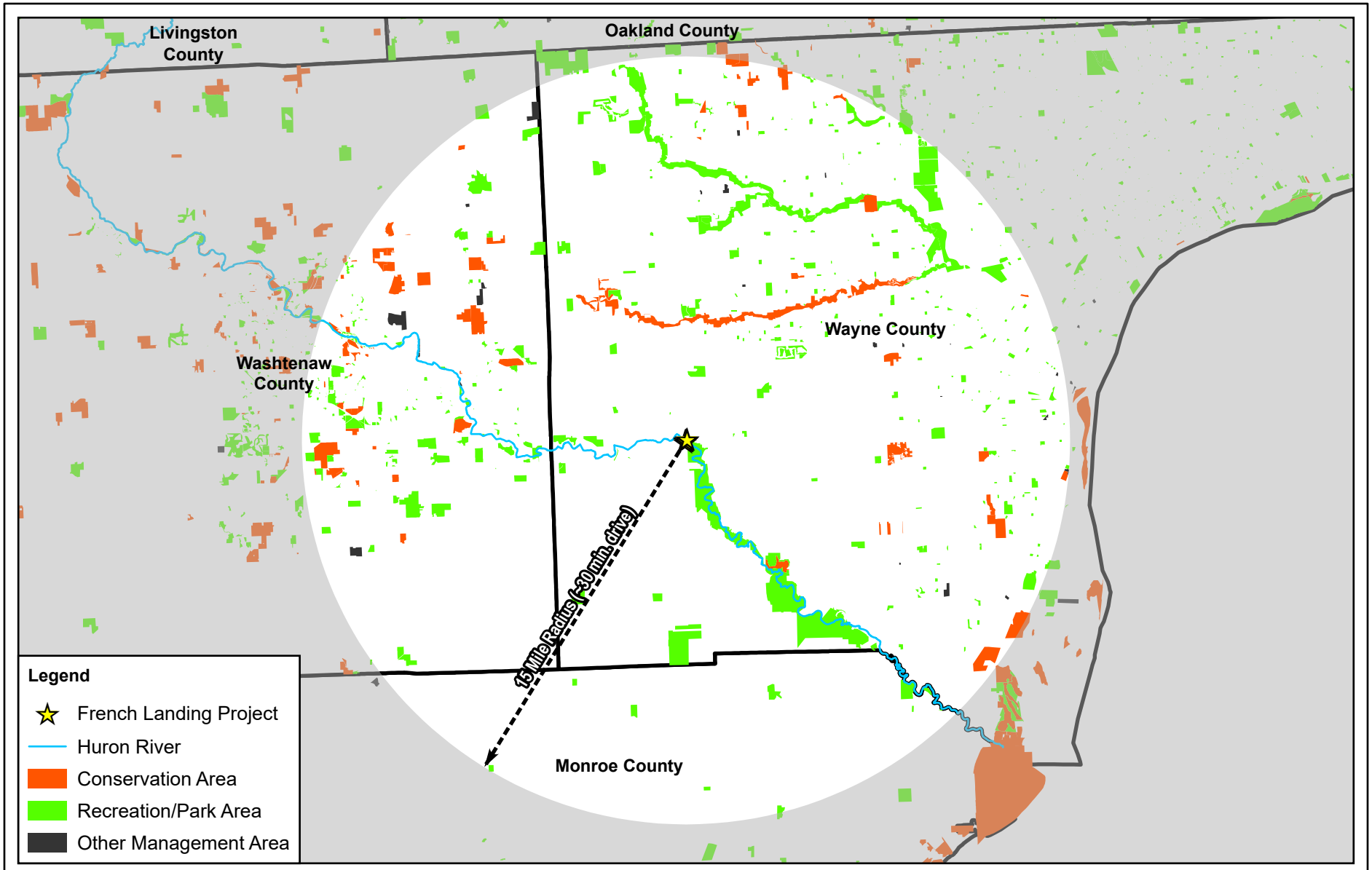
- **Loonfeather Point Park**: This park is located off Grove Road along the northern shore of Ford Lake approximately halfway up the lake from the dam. This park is staffed from mid-May through Labor Day with Park attendants and rangers. Within Loonfeather Point Park there are two picnic pavilions, a parking area, restrooms, barbecues, and a sports field on the high ground. There is a steep slope down to Ford Lake and facilities adjacent to the lake that include a playground, open space, and fishing pier (Ypsilanti, 2024).

- **Ford Lake Park**: Ford Lake Park is located off S. Huron River Drive along the southern shore of Ford Lake. This park is staffed from mid-May through Labor Day with park attendants and rangers. The boat launch at Ford Lake Park is the only public boat access to the impoundment. This is an active park, which includes picnic areas, playground equipment, tennis courts, soccer field, ball diamond, basketball court, trails, and a sand volleyball court. It also includes an office for park staff. A fishing berm and pier are located adjacent to Ford Lake Park. The western portion of the park has been left in a more natural state and includes walking trails and wildlife viewing (Ypsilanti, 2024).

- **Lakeside Park**: This park is located along the south shore of Ford Lake, just upstream from the dam and offers active play areas, picnic areas, a shelter, and fishing on Ford Lake. A portion of the park is undeveloped (Ypsilanti, 2024).

- **South Hydro Park**: This undeveloped park is located on the south shore of the Huron River across from North Hydro Park and the Ford Lake Dam. This park is secluded, with a natural setting and steep slopes leading down to the river. It is primarily used as an angler access. It has restricted vehicle access because its shared entrance drive (with a vacant site owned by Ford Motor Company) is often gated. South Hydro Park is also considered a prime fishing location (Ypsilanti, 2024).

- **North Hydro Park**: This is an undeveloped park adjacent to the Ford Lake Dam located on a bend along the north shore of the Huron River. There is a gravel parking area, and this park has a natural setting with preserved riverbank and woodlands set back from Bridge Road. North Hydro Park is considered a prime fishing location (Ypsilanti, 2024).



License Application
French Landing Hydroelectric Project
FERC No. P-9951

Figure 7.1.1-1:
Regional Recreational Opportunities

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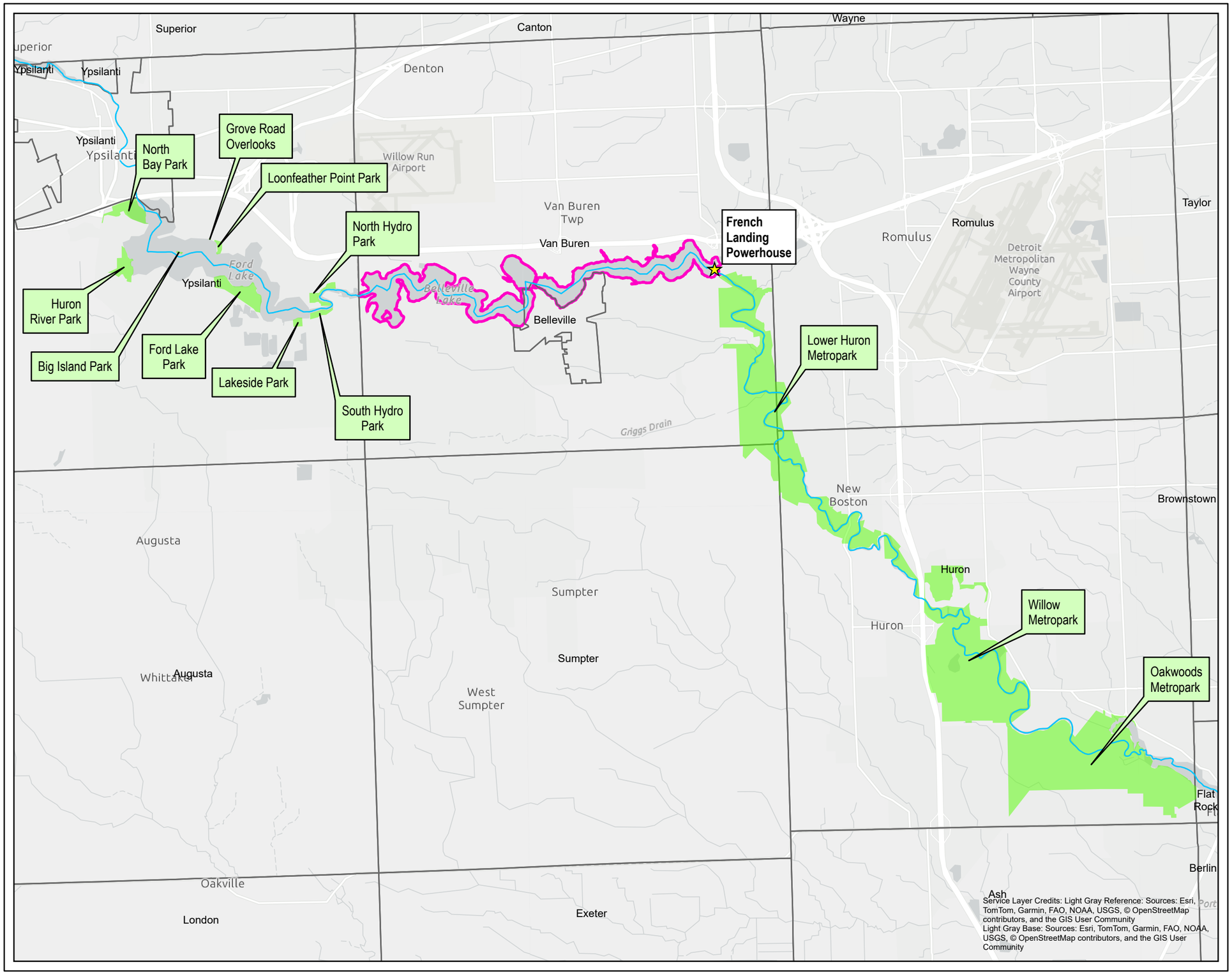

License Application
French Landing Hydroelectric Project
FERC No. P-9951

Figure 7.1.1-2:
Recreation Sites Immediately Upstream and Downstream of the Project

Legend

- French Landing Project
- Huron River
- Non-Project Recreation Area
- Municipality Boundary
- Proposed Project Boundary

N

0 3,750 7,500 15,000 Feet

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7.1.2 Existing Project Area Recreation Facilities

There is one formal Project recreation site provided by the Licensees – French Landing Park. French Landing Park lies on the easterly end of Belleville Lake near French Landing Dam and provides recreation opportunities which include a canoe portage route and tailwater fishing site. Additional formal non-Project public recreation areas that abut the Project boundary and offer lake access include Sandy's Marina, Belleville East Boating Access Site, Doane's Landing, Horizon Park, Van Buren Park, and Belleville West Boating Access Site. Project area recreation facilities are depicted in Figure 7.1.2-1.

In support of relicensing efforts, the Licensees conducted the *Recreation Facilities Inventory and Use Assessment* in the summer of 2023. The goal of the study was to assess the current condition of existing public recreation facilities within and directly adjacent to the Project boundary to determine if the facilities are meeting recreation demand in the Project area.

7.1.2.1 French Landing Park and Portage Trail

French Landing Park

As stated above, French Landing Park, as well as the associated portage route and tailwater fishing site, are the only formal Project recreation sites provided by the Licensees. The park offers a scenic view of Belleville Lake. Amenities include a kayak launch, pavilion with picnic tables, a wooden boardwalk and angler platform, restrooms, and a bike rack. There is also green space, benches, and trash receptables throughout the park. Concrete sidewalks connect the amenities throughout the park. French Landing Park and its amenities are depicted in Figures 7.1.2.1-1 through 7.1.2.1-5.

French Landing Park is accessed from Haggerty Highway. There is one paved parking area perpendicular to Haggerty Highway located near the restrooms with five delineated standard vehicle parking spaces, one of which is an Americans with Disabilities Act (ADA) designated space. There is a paved cul-de-sac off of Haggerty Highway, with paved parking perpendicular to the drive lane for 14 standard vehicles, including three ADA designated spaces near the end of the cul-de-sac.

The field survey conducted in 2023 found all amenities in good condition, with the majority of the site recently renovated as part of the Van Buren Five-Year Capital Improvement Plan. All amenities were also found to be ADA compliant, with the exception of the fishing platform which had sections that were ADA accessible, however, they were limited based on ADA requirements that 25 percent of rails be less than 34-inches.

The park is owned and maintained by Van Buren Charter Township (the co-licensee). The park is free to the public, with hours of 10:00 am to dusk Monday through Friday, and 8:00 am to dusk on weekends. The park is unstaffed.

French Landing Park Portage

The French Landing canoe portage is a Project recreation site approximately 1,150 feet in length and located adjacent to the Project dam and along the Huron River downstream of the Project. Users take out their hand carry boats on the southern shoreline of Belleville Lake approximately 415 feet from the Project Dam, indicated by a "Canoe Portage" sign visible from the water. Canoe portage signs along the informal mowed trail lead users to the Huron River and put-in location. Wooden stairs are available at the put-in location and lead down to the water with a hand railing available on one side. There is no boat preparation area or courtesy dock available to aid users when putting boats into the water.

The site is also used for informal angler access. Users fish in the impoundment from the right earthen embankment portion of the dam, which is located adjacent to the informal tailwater parking area along Edison Lake Road. The informal impoundment access is not maintained by the Licensees as a Project recreation facility.

The field survey found the trail and parking area to be in fair to good condition, with portions of the trail showing an uneven walking surface. In addition, the stairs to the downstream put-in are slanted, with a slippery surface and moss growing on them. The portage trail, portage stairs to the put-in location and the parking area are not ADA compliant. The angler site does not meet the requirements for an accessible route, however, a user in a wheelchair was observed on the earth portion of the dam during the field inventory and assessment.

The French Landing portage route is located entirely within Licensee owned land, as is the fishing and parking areas. The site is free to the public. No hours are listed at the site.

French Landing Park Tailwater Fishing Area

The French Landing Park Tailwater Fishing Area is located immediately downstream from the powerhouse along the river right shoreline (west side). Short trails extend from the informal parking area at the end of Edison Lake Road to the tailrace for shoreline fishing. Parking spaces are not delineated; however, there is space for approximately five standard vehicles perpendicular to the road.

There are several trails which branch out to multiple tailrace access points, the longest trail measuring approximately 400 feet from the parking lot to the fishing access site. The trails, which are shared with the portage route trail, are comprised of gravel and loose stone throughout. The sheet pile wall which lines the tailwater includes a retaining handrail to provide safer fishing conditions. During the survey, the trails were found to be in good condition.

There are no formal tailwater fishing access signs at the informal parking area or along the trails, however, several warning signs reading "Danger, hazardous tailrace, keep out when spillway is open" are located throughout the trail and fishing access area.

The tailwater fishing area is located entirely within Licensee owned land, as are the trails and informal parking area. The site is free to the public and has no hours listed.

7.1.2.2 Belleville East Boating Access Site (Non-Project)

Belleville East Boating Access Site is a non-Project recreation site located near the center of the eastern basin of Belleville Lake, a little less than two miles upstream of the Project dam. The facility provides access to Belleville Lake and offers a concrete boat ramp for trailered boats, angler access, a picnic table, and two restrooms. While the boat ramp extends into the impoundment, and therefore is within the Project boundary, the upland areas of the launch are all outside the Project boundary.

The entrance of the Belleville East Boating Access Site is off East Huron River Drive. The Belleville East Boating Access Site provides lighted parking for 132 vehicles. There are 120 trailered vehicle parking spaces, three of which are ADA designated parking spaces for trailered vehicles. There are 12 standard vehicle parking spaces, one of which is an ADA designated space for standard vehicles.

All amenities at the site were found to be in good condition during the field inventory. The parking area, sidewalk paths, restrooms, boat launch, and angler platform are ADA compliant, however, the picnic area and benches located near the shoreline were not found to be compliant.

The site is owned and managed by MDNR, and is open 24 hours a day. The site is staffed occasionally during the recreation season. To enter, park, and utilize the boat launch area, users must present a Michigan recreation passport. Passports vary in price depending on the type of vehicle registered and the residency of the registered vehicle. For residents of Michigan all fees are annual. Motorcycles and mopeds have a $7 annual fee, while personal vehicles have a $14 annual fee. For non-resident vehicles there is a $40 annual fee, or daily fee of $11. Towed motor vehicles have a fee of $8, provided the towing vehicle already has an annual pass. For commercial vehicles, only daily passes are provided at $20 for both resident and non-resident commercial vehicles.

7.1.2.3 Belleville West Boating Access Site (Non-Project)

The Belleville West Boating Access Site is a non-Project recreation site located at the extreme western end of the Project boundary, just downstream of the Rawsonville Road bridge. It is accessed via a two-way traffic paved driveway from Ransomville Road. The site offers one concrete boat ramp, one wooden boarding pier, a hand carry boat launch, a wooden fishing platform, multiple restroom facilities, parking for 57 vehicles including ADA compliant spaces, and several earthen informal trails which lead to the impoundment for shoreline access. The boat launch and hand carry boat launch extend into the impoundment and are therefore within the Project boundary. The upland portions of the facility are adjacent to but outside of the Project boundary.

The facility was found to be in good condition during the field inventory. The majority of the site was ADA compliant, including the restroom facilities, sidewalks, angler platform, boat launch, and parking area.

Similar to the Belleville East Boat Boating Access Site, the Belleville West Boating Access Site is owned and managed by MDNR. A valid Michigan recreation passport is required to enter, park, and utilize the boat launch area. Hours of operation are 4 a.m. to 11 p.m. The site is staffed during the recreation season.

7.1.2.4 Van Buren Park (Non-Project)

Van Buren Park is a non-Project user fee park located on the South I-94 Service Drive between Belleville and Rawsonville Roads in the Van Buren Charter Township. The site amenities include hiking trails, play structures, picnic areas, pavilions, horseshoe pits, basketball court, grills, beach area, sled hill, community garden, concession stands, and restroom facilities. Recent upgrades include a new pavilion, new streetlights at the front of the park, and park signage. As the beach area allows users to swim in the impoundment, a portion of the park lies within the Project boundary. All upland areas of the park, however, are outside of the Project boundary.

Van Buren Park is accessed from South Interstate 94 Service Drive. There are no formal parking lots in the park, with the exception of the beach area, which has a small unimproved parking area. Parking is permitted along access roads throughout the park.

Based on user surveys conducted as part of the 2022 Parks and Recreation Master Plan, the public is satisfied with the appearance, maintenance, and cleanliness of Van Buren Park. The survey found 62% of respondents were somewhat or very satisfied with their experience of the park, while 25% were either somewhat or very dissatisfied (Van Buren, 2022). The park was also evaluated for accessibility in the plan, scoring a 2 on a scale of 5, which indicates the park is somewhat accessible to people with a broad range of disabilities.

Van Buren Park is owned and managed by the Charter Township of Van Buren. Entry fees available include $5 daily passes for residents ($7 for non-residents), $15 annual passes for Van Buren/Belleville residents ($20 for non-residents), and $8 annual passes for seniors 55 and older. In addition to entry fees, pavilions can be rented ($120 resident or non-profit group, $140 non-resident or profit group, $45 school groups). The park is open 10:00 am to dusk, Monday through Friday, and Saturday and Sunday 8:00 am to dusk during the summer (Memorial Day through Labor Day). A sledding hill is open 9:00 am to sunset during the winter. The park is staffed during summer open hours; during the winter season it is unstaffed.

7.1.2.5 Horizon Park (Non-Project)

Horizon Park is a non-Project recreation site located on the shores of Belleville Lake in the city of Belleville, near the Belleville Road Bridge and Denton Road Bridge. The park features a scenic view of the lake, a picnic pavilion, Rose arbor, benches and tables, restrooms, a terraced lakeside

boardwalk, a fishing pier, boat docks, ADA accessible canoe/kayak launch, and the Belleville War Memorial. The park also hosts events throughout the summer including Lakeside Live music Thursday nights with live entertainment and food trucks. Similar to other non-Project recreation sites listed, the boat launch extends into the Project reservoir, however, the upland portions of the park are outside the Project boundary.

Horizon Park is accessed from High Street in the City of Belleville. Both on-street and off-street parking is available for Horizon Park. The paved parking lot has 20 spaces and is shared with a local restaurant.

The park is in good condition based on the site inventory. It has numerous ADA compliant amenities, including an ADA accessible canoe/kayak launch, and two ADA compliant parking spaces. The boardwalk and fishing pier provide multiple areas with ADA compliant low railings.

Horizon Park is free to the public and open year-round from dusk to dawn. The park is owned and operated by the City of Belleville, but is not staffed.

7.1.2.6 Doane's Landing (Non-Project)

Doane's Landing is a small non-Project park completed in the fall of 2006, which offers park benches, a short trail, bike racks, and a view of the lake. The park is located in the City of Belleville between the eastern and western basins of Belleville Lake, at the foot of the Belleville Bridge. Though the park offers shoreline access, fishing is prohibited. The park is located adjacent to but outside of the Project boundary. The park is accessed off Belleville Road and North Liberty Street. On-street parking is available along North Liberty Street.

The park was found to be in good condition based on the site inventory, with a sidewalk trail and clean benches. In addition, the site has curb cuts and grade requirements which are ADA compliant, as well as ADA compliant benches.

Doane's Landing does not have hours posted and is not staffed. The park is owned and managed by the City of Belleville and is free to the public.

7.1.2.7 Huron River Water Trail (Non-Project)

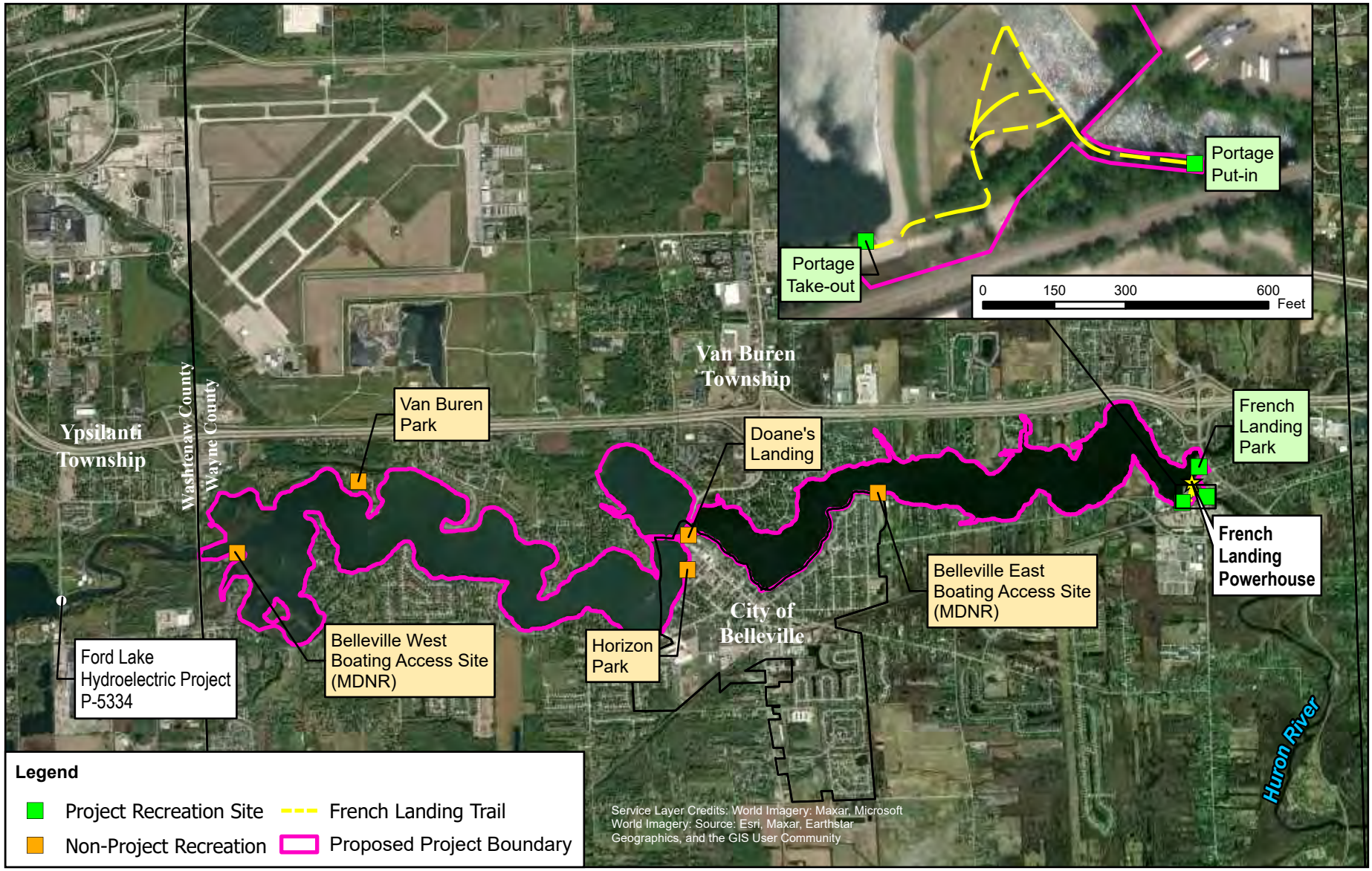
The Huron River Water Trail is a 104-mile inland paddling trail that spans 5 counties and 30 communities in Southeast Michigan. The trail begins near Proud Lake in Commerce Township in Oakland County and ends near Lake Erie, in the Lake Erie Metropark. Throughout the water trail there are 14 portages, including a portage at the Project. Along the trail are numerous outfitters that provide kayak, canoe, paddleboard, and tube rentals. Currently Argo Park and Gallup Park in Ann Arbor provide universal access launches for paddlers with disabilities. Additional universal access launches are under construction at Kensington and Hudson Mills metroparks.

The Huron River Water Trail runs throughout the Project boundary, both in the Huron River downstream of the Project, and within the entire impoundment. The Project offers a portage route to assist paddlers traversing the trail.

7.1.2.8 Iron Belle Trail (Non-Project)

The Iron Belle Trail crosses over 100 municipalities through 48 different counties. The trail is comprised of two separate trails, both which extend from Belle Isle State Park to the City of Ironwood in the Upper Peninsula of Michigan. One trail travels west across the state, from Detroit to Kalamazoo, before traveling north through Grand Rapids and to the upper peninsula, then again traveling west through Marquette before terminating at Ironwood. The second trail travels north from Detroit through Flint and along the Lake Huron shore to the Huron National Forest where it turns west until Higgins Lake. From Higgins Lake the trail travels north to Cheboygan before crossing into the upper peninsula, then traveling along the southern portion of the upper peninsula and through the Ottawa National Forest before terminating in Ironwood.

Existing portions of the trail lie upstream and downstream of the Project, with plans to develop the trail in the Project area to connect the portions in place. In the immediate Project vicinity, the Border to Border Trail runs though the City of Belleville, along East Huron River Drive near the Belleville East Boating Access Site, through Victory Park before continuing along West Columbia Avenue to the Belleville and Van Buren boundaries. This portion of the trail follows main roads and does not provide a view to Belleville Lake.



License Application
French Landing Hydroelectric Project
FERC No. P-9951

0 2,000 4,000 8,000 Feet

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Figure 7.1.2-1:
Project Area Recreation Sites

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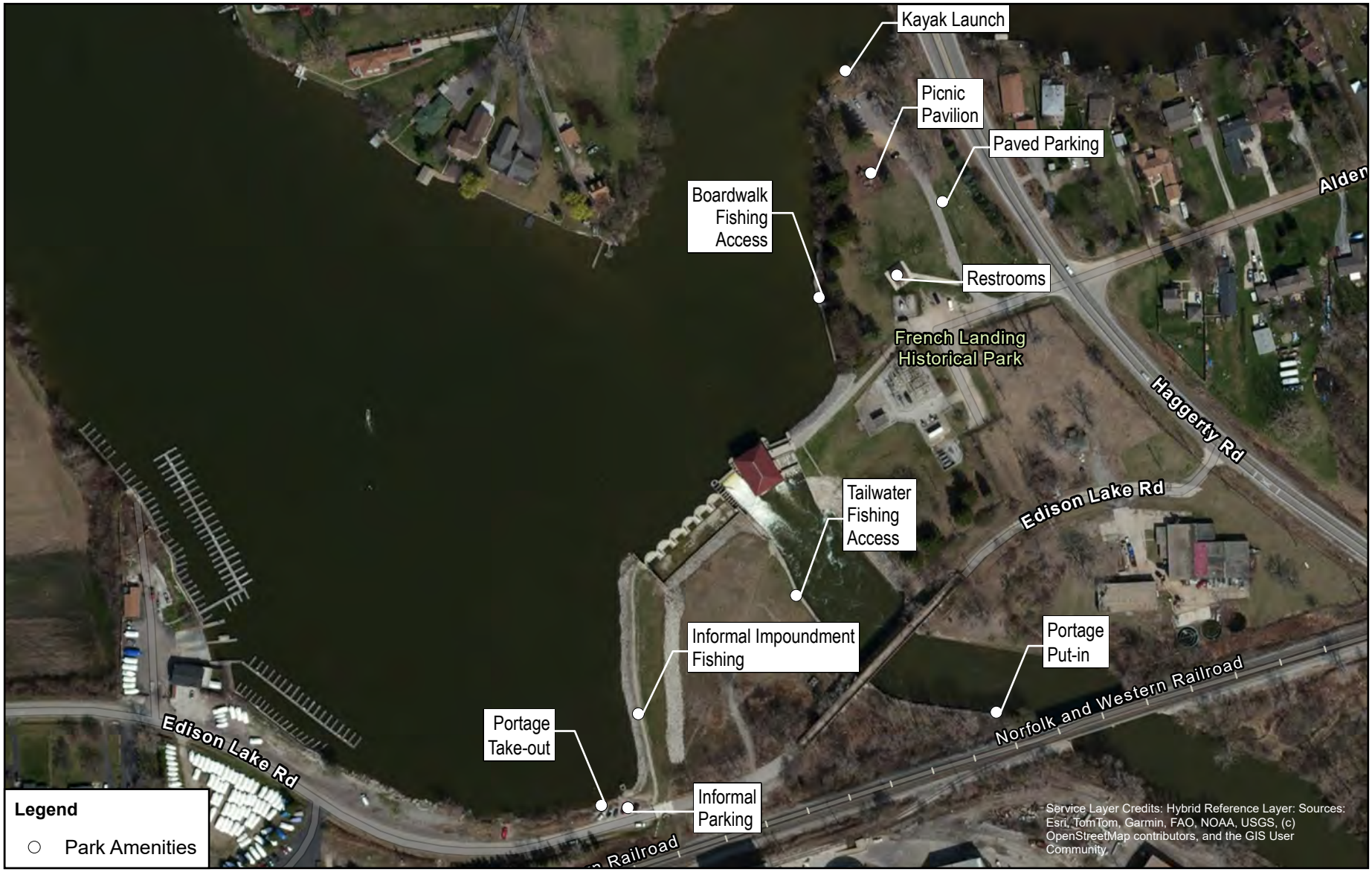

License Application
French Landing Hydroelectric Project
FERC No. P-9951

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Figure 7.1.2.1-1
French Landing Park Amenities

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Figure 7.1.2.1-2: French Landing Park Pavilion

Figure 7.1.2.1-3: French Landing Park Boardwalk

Figure 7.1.2.1-4: French Landing Park Restroom

Figure 7.1.2.1-5: French Landing Park Kayak Launch

7.1.3 Project Area Recreation Use

Point-in-time observations were conducted at French Landing Park, Belleville East Boating Access Site, and Belleville West Boating Access Site on 14 days throughout the recreation season (Memorial Day weekend through Labor Day weekend). The results of the observations were used to determine the capacity and utilization at each site.

Use over the course of the study was estimated to be approximately 21,582 recreation days. Usage was split fairly evenly across the three sites evaluated, with Belleville East Boating Access Site seeing slightly more usage (37% of recreation days in Project area) than French Landing Park (33%) and Belleville West Boating Access Site (30%). As anticipated, weekends saw more recreation days than weekdays, with 60% of recreation days being utilized on the weekend.

Boating and fishing were the most popular activities observed at the Project area recreation sites, accounting for 79% of all recreation at the three sites observed. Boating accounted for 48% of usage at the sites, while bank fishing (20%) and boat fishing (11%) were the next most popular activities. Sitting/relaxing (6%), picnicking (6%), walking (3%), biking (3%) and sightseeing/photography (2%) were also observed at the sites.

Based on parking area capacity and observations of parked cars at the recreation sites, no facility exceeded its capacity on an average weekday or weekend. The Project area was utilized at 27% of capacity on average during weekdays, with French Landing Park seeing the highest capacity utilization at 37%. Belleville West Boating Access Site was utilized at 32% of capacity, while Belleville East Boating Access Site was utilized at 23% of capacity on an average weekday. Weekend capacity utilization for the Project area was 35%, with French Landing Park utilized at 54% of capacity, Belleville West Boating Access Site at 40%, and Belleville East Boating Access Site at 30%.

All facilities evaluated as part of the *Recreation Facilities Inventory and Use Assessment* were found to be well utilized, but none had usage rates beyond their capacity. In addition, future projections found the recreation facilities evaluated will meet demand for recreation use in the future.

7.1.3.1 Recreation Use at French Landing Park

Use at French Landing Park over the study period was estimated at 7,149 recreation days. An average of 9.9 persons were observed at the park on weekdays, while 15.9 persons were observed on weekends during point-in-time observations. The average duration of recreation visit was approximated to be 2.6 hours. Numerous recreational activities were observed at the park during the study, with bank fishing being the most popular activity, accounting for 2,770 recreation days, or 39% of recreation at the park. Picnicking was found to be the next most popular activity (21% of recreational use), followed by boating (11%), biking (9%), and sitting/relaxing (7%). All other activities accounted for less than 5% of total site usage.

Of the 19 parking spaces available at the park, approximately 7.1 spots were used on average during weekdays (37% capacity), and 10.3 spots used on average during weekends (54% capacity). The highest utilization during a holiday was observed on July 4th, when 18 spots were used (95% capacity), however, the peak utilization was observed on Saturday, August 12th, when 23 spots were used (121% capacity) during what appeared to be a graduation party picnic.

7.1.4 Project Vicinity Recreation Needs Identified in Management Plan

7.1.4.1 Michigan Statewide Comprehensive Outdoor Recreation Plan

Michigan's Statewide Comprehensive Outdoor Recreation Plan (SCORP) is prepared for MDNR and provides a five-year strategic plan that shapes investment by the State of Michigan and local communities in priority outdoor recreation infrastructure and programming. It is designed to evaluate ongoing and emerging outdoor recreation trends, needs, and issues, and establish priority strategies for achieving outdoor recreation goals. The plan details the state's key outdoor recreation strategies, including fostering stewardship and conservation, improving collaboration, raising awareness, improving recreational access, providing quality experiences, enhancing health benefits, and enhancing prosperity. The SCORP does not identify any strategies specific to the Project, nor project recreation usage in the future (MDNR, 2018).

7.1.4.2 Parks and Recreation Plan for Southeast Michigan

The Parks and Recreation Plan for Southeast Michigan, developed by SEMCOG, was created to ensure that the region's recreation system meets the quality of life, health, and accessibility needs of its residents and visitors, as well as local and regional economic development and environmental priorities. This plan includes three main chapters:

1. Southeast Michigan's Recreation System – An overview of regional stakeholders, SEMCOG's role in recreation planning, and regional recreation trends.

2. Southeast Michigan Park Facts – Regional benchmarks for park acreage, recreational amenities, and a summary of the findings from SEMCOG's Access to Parks analysis.

3. Regional Policies and Actions for Implementation – An overview of each policy area, the challenges and opportunities associated with them, and highlights of regional case studies.

The plan does not identify any strategies specific to the Project area (SEMCOG, 2019).

7.1.4.3 Parks and Recreation Management Plan (Van Buren Charter Township, MI)

The Parks and Recreation Management Plan for the Van Buren Charter Township, Michigan was developed by McKenna Associates on behalf of the Township and was adopted in January 2022. The plan is developed every 5 years and provides a community description, information on administrative structure and funding, a parks and recreation inventory, basis of action plan, and an

action plan. The action plan utilized trend identification and user survey input to establish the plan. It describes recommendations for improvements and enhancement of the Van Buren Township parks and recreation facilities and programming, as well as identifying the tools needed for implementation of the plan.

The action plan offers recommendations to numerous recreation sites within the township. Recommendations specific to the Project area include:

- Van Buren Park Beach - Prevent erosion of the beach area at Belleville Lake by stabilizing the peninsula area at the southeast end of park including at the University of Michigan facility, and by restoring the slope and repairing the road down to the beach with guardrails.

- Statewide Iron Belle Trail - Seek options for the construction of the Township portion of the Iron Belle Trail, which will provide trail connections between the Township and existing regional and state-wide trails and promote better mobility and public health in the community.

In addition to the recommendations listed, the action plan provides a five-year capital improvement plan. Sites near the Project and their recommended improvements are:

- French Landing Park – Construct a new fishing pier and other amenities (constructed in 2023), repair bridge at Edison Lake Road for use of a trailhead for the Iron Belle Trail.

- Van Buren Park – Develop master plan for park, replace pavilions, construct performance venue, pave trail encircling park, replace playground, renovate basketball courts, improve restrooms, provide access for boat docking/launching and rental of recreation equipment, restore existing beach, repair road down to beach with guardrails, and stabilize the southeast portion of the peninsula.

The plan identifies a wide variety of sources to fund the improvements, including Community Development Block Grants (CDBG), MDNR, the University of Michigan (UM), the Land and Water Conservation Fund (LWCF), general funds and private funds (Van Buren, 2022).

The French Landing Project complies with the vision of the recreation management plan and is currently on schedule to complete the enhancements noted in the plan at French Landing Park.

7.1.5 Land Use and Management within the Project Vicinity

Huron River watershed land use as well as land use within 1,000 ft. of the Project boundary are discussed in Section 1.4 and depicted in Figure 1.4-1 and Figure 1.4-2. The majority of land surrounding the Project is privately owned. As previously noted, land adjacent to and within the Project boundary is primarily developed, with private residences, condominiums, commercial buildings, recreation facilities, and other open space development along the impoundment.

Management of lands outside of the Project boundary fall under the jurisdiction of the municipality in which they are located. Section 3.120 of Charter Township of Van Buren Zoning Ordinance, adopted May 16, 2017 and amended February 8, 2021, describes ordinances regulating development along Belleville Lake within the Township. The zoning ordinance defines two Belleville Shoreline Districts, Belleville Lake Shoreline District A – Single Family Residential (BLA), and the Belleville Lake Shoreline District B – Non-Single Family Residential (BLB). No improvements, modifications, alterations, or structures of any kind are permitted to be constructed, installed, or made on Township Lake property within the BLA and BLB districts (other than seasonal structures as defined by the EGLE) unless those actions comply with the regulations of the respective district, obtain the approval of the Township, and the approval of all other agencies with jurisdiction. In addition, the ordinance explicitly states, "It is understood that any facilities installed hereunder are subject to the terms of the (French Landing) FERC license" (Van Buren, 2021).

The City of Belleville Zoning Ordinance, effective July 5, 2013 and amended January 13, 2017, provides regulations for development with the city. Section 3.6 of the ordinance states "There shall not be any zoning maps to cover Belleville Lake, and all that part of the Municipality known as Belleville Lake shall not be used for any purpose other than recreation and storage of water." There are no specific regulations related to shoreline development in the ordinance, however, any development would be subject to a site plan review prior to an issuance of a building permit (Belleville, 2017).

7.1.6 Land Use and Management of Project Lands

The Licensees possess the necessary title, right or interest to operate the Project on the lands within the Project boundary. These lands are managed in accordance with federal, state, and local regulations. In general, Project operations and maintenance, along with recreation, are the primary activities that occur on Project lands.

7.2 Environmental Analysis

Section 4.5.2 of FERC's SD2 identified the adequacy of existing recreational facilities and public access at the Project to meet current and future recreational demand and the effects of continued Project operation and maintenance on recreation within the Project area as possible resource issues to be evaluated in the NEPA document.

The immediate Project area and region provides numerous recreation opportunities. The Licensees currently maintain one FERC approved Project recreation site, French Landing Park. The park provides various amenities including a fishing pier, walking path, kayak launch, and picnic tables. The Licensees also provide a portage route around the Project dam. In addition to the Project recreation site, several public recreation sites are located immediately adjacent to the Project boundary, including Belleville East Boating Access Site, Belleville West Boating Access Site, Van Buren Park, Horizon Park, and Doane's Landing. The Huron River Water Trail also runs through the Project impoundment.

The *Recreation Facilities Inventory and Use Assessment* found the Project recreation facilities were in good condition, with the exception of the portage trail, which was in fair condition. Portions of the trail had uneven walking surfaces, and stairs leading to the put-in are slanted and slippery. The study found public boat launches adjacent to the Project boundary, Belleville East and Belleville West Boating Access Site, were both in good condition. All recreation sites in the Project area are well utilized, but none exceed their capacity. In addition, all sites are projected to meet future recreation demand.

The Project will continue to operate as a run-of-river facility, thus maintaining a consistent water level in the Project impoundment. Given that water levels will remain consistent, all boat ramps will remain usable throughout the recreation season. There are no planned construction or maintenance activities which would alter existing land use within the Project boundary. As a result, continued Project operation is not anticipated to adversely impact recreation and land use resources.

7.2.1 Agency Recommended Mitigation

The U.S. National Park Service (NPS) performed a site analysis on French Landing Park and the French Landing Park portage trail in November of 2022, and subsequently submitted the analysis to the Commission on January 5, 2023. This analysis was performed prior to the completion of some of the park upgrades, however, the conditions of the portage trail were similar to conditions observed during the Licensees 2023 field inventory.

Several recommendations were submitted by NPS in the analysis including additional signage for the portage route, clearing the existing portage trail from obstacles, adding trash bins at both the upstream and downstream portage sites, updating the portage stairway, and investigating portage trail alternatives.

MDNR filed comments on the French Landing DLA with FERC on February 25, 2025. In the letter, MDNR recommended that the Licensees develop a Recreation Management Plan. MDNR recommended that the plan include discussion of all recreational facilities, including non-Project amenities, that if no longer available would hinder recreation in the Project area, and discuss plans to replace those facilities should they become unavailable, as well as evaluate the need for future expansion or improvement of recreational facilities. In addition to the Recreation Management Plan, MDNR recommended specific upgrades to the portage trail, including a complete replacement of the trail, improvement and expansion of the parking area, the addition of picnic tables and trash bins, and planting trees by the tailrace shore fishing area to provide embankment stability and shade for anglers.

The Licensees have provided responses to the DLA comments received in Appendix E-1

7.2.2 **Applicant Proposed Mitigation**

The Licensees plan to continue operating French Landing Park as it has throughout its current license and to enhance the portage route by replacing the stairs at the portage put-in and improving trail conditions along the path where concrete blocks create tripping hazards. In addition, the Licensees are proposing to develop a Recreation Management Plan in consultation with MDNR. The Recreation Management Plan will include descriptions of FERC-approved Project recreation facilities and their associated operation and maintenance schedule.

7.2.3 **Unavoidable Adverse Effects**

As there are no proposed changes to Project operation, there are no unavoidable adverse effects anticipated due to continued Project operation.

7.3 References

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8 AESTHETIC RESOURCES

8.1 Affected Environment

Single and multi-family residential land dominate the Project area, with recreation and open space land dotting the landscape. Section 1.4 examines land use in the Project vicinity and Huron River watershed. Numerous boathouses and docks can be seen throughout the impoundment, along with parks and sections of tree-lined shoreline, creating a picturesque lake view. Upstream of the Project lies Ford Lake and the Ford Lake Hydroelectric Project, whose impoundment offers similar views, being largely developed. Downstream of the Project lies the Lower Huron Metropark. The park offers over 1,000 acres of mainly forested land along both shores of the Huron River, providing scenic natural views in an otherwise developed region.

Several roads run near the Project, offering views of the impoundment, facilities, and areas below the dam. Haggerty Road, which runs along the eastern edge of Belleville Lake for a brief span, offers somewhat obstructed views to the lake and French Landing Park. Belleville Road is a north/south traveling road which crosses the impoundment and defines the East and West Belleville Lake Basins. The road is lined with decorative safety fencing, light poles, and ornaments. With wide sidewalks on both sides of the road, it offers the most easily accessible and scenic views of both basins of Belleville Lake. Denton Road begins at the intersection of Belleville Road and North Liberty Street. The small road, which runs east/west as it crosses Belleville Lake, offers similar scenic views to Belleville Road. The westernmost end of the impoundment is crossed by the Rawsonville Road Bridge. To its east, the bridge offers an expansive view of Belleville Lake and the Belleville West boat launch. On the bridge's west view lies the Huron River as it approaches Ford Lake. Wide sidewalks on both sides of the bridge provide scenic views for pedestrians. Several minor roads run alongside the Lake and offer limited views, often through the tree-lined shoreline or through residential developments.

The Project dam and powerhouse are generally not visible from most viewpoints due to tree cover and various peninsulas that jut into the lake to obscure its view. Edison Lake Road, primarily the section near Sandy's Marina, offers the clearest view of the Project, with no obstructions to block views. In addition, the French Landing Bridge trail provides a view of the French Landing Dam and Huron River. The bridge is a pedestrian only bridge that crosses the Huron River downstream of the dam.

Recreation sites located along the shores of Belleville Lake offer the best views of the impoundment, including Belleville East Boating Access Sites, Belleville West Boating Access Site, and French Landing Park. The Project powerhouse and dam are also viewable from French Landing Park, and the French Landing Park portage trail.

8.1.1 Visual Character of Project Lands and Water

Belleville Lake has a history of primarily residential development, being recognized for over a century as an ideal residential location in the Van Buren Charter Township. Areas immediately

surrounding Belleville Lake contain approximately 40% of the Townships' population and housing (Van Buren, 2020).

Belleville Lake is a calm reservoir that is widely used for boating and fishing purposes. The shoreline is developed in most sections of the impoundment. Section 2.1.4 further characterizes the Project Area shoreline.

The French Landing Dam and Project facilities, including the powerhouse, spillway, and fish passage facilities, are visible from Edison Lake Road and the French Landing pedestrian bridge in the Project Area. Figures 8.1.1-1 through 8.1.1-8 show views of Project facilities from various viewpoints.

Figure 8.1.1-1: Belleville Lake (Western End of Impoundment)

Figure 8.1.1-2: Belleville Lake (Eastern End of Impoundment)

Figure 8.1.1-3: Belleville Lake from French Landing Park Boardwalk

Figure 8.1.1-4: French Landing Park Pavilion

Figure 8.1.1-5: French Landing Dam and Powerhouse

Figure 8.1.1-6: French Landing Powerhouse and Tailrace

Figure 8.1.1-7: French Landing Powerhouse (taken from French Landing Park)

Figure 8.1.1-8: Substation taken from French Landing Park

8.1.2 **Scenic Attractions**

The Iron Belle Trail is Michigan's showcase trail that crosses over 100 municipalities through 48 different counties. Existing portions of the trail lie upstream and downstream of the Project, with plans to develop the trail in the Project area to connect the portions in place. When constructed, the trail will offer views of Belleville Lake and surrounding parks.

Additionally, Horizon Park in the City of Belleville offers scenic lake views and a short boardwalk. Van Buren Park also provides short trails that lead to lakeside views. See Section 7 for a discussion of recreational opportunities offering scenic views in the Project vicinity. There are no State or Federal Scenic Byways in the Project vicinity. Scenic attractions within a 30-40 minute drive of the Project include Lower Huron Metropark, LeFurge Woods Nature Preserve, and Belle Isle State Park.

8.2 Environmental Analysis

The Project does not impact aesthetic resources and there are no known issues pertaining to aesthetic resources at the Project.

8.2.1 Agency Recommended Mitigation

The Licensees are not aware of any agency recommended mitigation related to aesthetic resources at this time.

8.2.2 Applicant Proposed Mitigation

The Licensees are not proposing any PME measures related to aesthetic resources.

8.2.3 Unavoidable Adverse Effects

As there are no proposed changes to Project operation, there are no unavoidable adverse effects anticipated due to continued Project operation.

8.3 References

Van Buren Charter Township (Van Buren). 2020. 2020 Master Plan, Van Buren Charter Township, Wayne County, Michigan. https://cms9files.revize.com/vanburentwp/Document_Center/Department/Public%20Services/Building,%20Planning%20&%20Economic%20Development/Community%20Plans/VanBurenTwp-MASTER-PLAN-030121-FINAL.pdf. Accessed 3/9/2022.

9 CULTURAL RESOURCES

9.1 Previous Evaluations

A cultural resources survey of the Project area was conducted prior to the Environmental Assessment (EA) submitted on February 6, 1987. The survey found no properties have been identified in the area as listed on or eligible for listing on the National Register of Historic Places (National Registry or NRHP) (letter from John R. Halsey for Kathryn B. Eckert, Deputy of State, Historic Preservation Officer (SHPO), Lansing, Michigan, December 27, 1985).

In addition to the cultural resource survey conducted prior to the EA, the Licensees contacted Michigan SHPO for a proposed drawdown of the reservoir in 2019. In April 2019, a proposed temporary variance (drawdown) under article 407 was requested by the Licensees which sought permission to lower the reservoir elevation 5 feet during the month of September 2019 to allow residents the opportunity to repair their own shorelines/structures and allow volunteers to collect refuse from the exposed bottom of reservoir. In response to this plan SHPO found no historic properties would be affected within the area of potential effects in the reservoir area.

In support of relicensing, the Licensees conducted a Phase I Archaeological Survey and an Historic Architecture Survey. The surveys were conducted by TRC and the University of Wisconsin-Milwaukee (UWM) in the summer of 2023. Results of these surveys are discussed later in this section.

9.2 Historic Sites in the Project Area

9.2.1 National Register of Historic Places Near the Project

Approximately five (5) miles upstream of the end of the Project impoundment is the nearest historic district on the National Register, known as the Ypsilanti Historic District. The district is located along several blocks of each side of the Huron River in the City of Ypsilanti. It is the fifth largest historic district in the state of Michigan (Ypsilanti, 2013). The district was listed on the National Register of Historic Places on April 11, 1978, with an additional boundary change added on January 5, 1989 (NPS, 2022). The district has maintained much of its historic homes, whose architecture styles include Queen Anne, Italianate, Second Empire, Victorian, and Gothic Revival.

9.2.2 Archaeological Sites Near the Project

Based on maps from Hinsdale's "Archaeological Atlas of Michigan", there are six possible archaeological sites along the Huron River, mostly near Ann Arbor and outside of the Project boundary. Their locations are approximate, and it is presently unknown whether they still exist; however, there were five Indian villages and a mound located along the Huron River (MDNR, 2002). In addition, the Wyandots tribe had a village at Ypsilanti at one time (Hinsdale, 1944). The Potawatomi Trail, which followed the Huron River from its mouth through Wayne and Washtenaw counties passed through the Project location and through the village (Hinsdale, 1944).

9.2.3 Michigan State Historic Sites

Three sites in the Project vicinity are designated as Michigan State Historic Sites by the Michigan History Center – French Landing Dam and Powerhouse, Old Van Buren Township Hall, and Old Rawsonville Village.

In 1910 the Eastern Michigan Edison Company, now the Detroit Edison Company, purchased most of the Van Buren Township land along the Huron River for a hydroelectric plant. The French Landing Dam and Powerhouse were completed in 1925 by the Detroit Edison Company on land previously purchased in 1910. The original powerhouse was decommissioned in 1962. In 1981, the property was donated to the township, restored, and put back into service in 1988. The dam and powerhouse were designated as a Michigan State Historic Site on February 18, 1982. The dam, the largest and last in a series of five constructed on the Huron River, created Belleville Lake, with its miles of beautiful residential and recreational lakefront lots (MDNR, 2022).

Van Buren Township was organized out of Huron Township by an act of the Legislative Council of the Territory of Michigan in 1835. Township business was conducted from homes until Old Van Buren Township Hall was completed in 1875. The original plans called for a one-story structure; however, shortly after construction began, the local Grange offered to pay for a second story to be used for its meetings. In a special election, township voters accepted the proposal. As the Grange declined in popularity, the second floor became a community meeting hall, while the basement served as a jail for a short time in the 1930s. In 1952 the Grange relinquished its portion to the Van Buren Township. The building served as the township hall until 1959 (MDNR, 2022). The site was registered as a historical marker in 1973.

Old Rawsonville Village was once a thriving village. On September 13, 1823, the first land patent in Van Buren Township was given to Henry Snow for this site, which was soon known as Snow's Landing. Called Rawsonville by 1838, the community reached its peak around the time of the Civil War. It then boasted sawmills, gristmills, two cooper shops, a stove factory, several dry goods and general stores, a wagon maker and three saloons. Rawsonville's failure to attract railroad service led to its decline, by the 1880s many of its businesses and mills had closed and its residents were moving away. In 1925, the French Landing Dam was constructed on the Huron River flooding most of the remaining structures with the newly-formed Belleville Lake (MDNR, 2022). Old Rawsonville Village was registered in 1983.

9.2.4 Historic Context

9.2.4.1 Huron River Watershed Context

The earliest archaeological records of human inhabitants dates to the Paleo-Indian period, more than 10,000 years ago. These were nomadic people who followed herds of game animals. By 500 B.C. there was a change to a more sedentary lifestyle (Archaic Period) as people established camps for a season or more and agricultural practices were developed. More recently, the Huron River watershed was of prime importance to the Potawatomi people (MDNR, 1995).

The French explorer Rene-Robert Cavelier Sieur de La Salle and his party are generally credited as the first Europeans to come into the area in 1680. The explorers observed the Ouendat (Wyandot) Indians, who lived in the lower portion of the river basin and called the river “Cos-scut-e-nong sebee”, or Burnt District river, meaning the plains or oak openings, lands, or country. The explorers would develop the name Riviere aux Hurons based on their observations of the tribe (Anon, 1881), which is present on maps drawn in 1749 (Jessup, 1993). The translation to English followed when most of the settlers spoke that language.

By the 1720’s, European settlement within the watershed began in earnest. The area was considered highly desirable. The river was described as "a very rapidly flowing stream with a sand bottom" (Jessup, 1993) that made it ideal for the construction of dams to create power for saw and grain mills. This led to the clearing of land and development of agriculture in the basin.

The Potawatomi and Wyandot peoples suffered devastating losses of life from diseases brought into the region by settlers. In 1752, most of the Potawatomi died from smallpox. In 1787, the Wyandot people were struck by this illness. When whooping cough arrived in 1813, the few remaining groups were again devastated. The Wyandot who survived this moved to southern Ontario. By 1866, the Potawatomi of the Huron, now numbering less than 100 individuals, moved to Athens, south of Battle Creek. After this, except for isolated members, no North American Indians were left in the watershed (Tanner, 1986).

The river was a principal means of transportation until the 20th century. Barges travelled as far as Snow's Landing (presently Rawsonville, where Ford Dam is located). Landings were areas where people had to disembark from barges and continue travel on foot. Continuing upstream from Snow's Landing, the gradient for the next 1.5 miles (mi.) was 6.8 ft/mi (a rise of 10.2 ft in 1.5 mi.) and for 1.1 mi. upstream of that the gradient was 8.8 ft/mi, much too difficult for barges to traverse. Other landings, such as French Landing existed downstream from this point. This was also a true landing as defined above. The type of barge determined where "the landing" would be (MDNR, 1995).

The high gradient waters of the Huron system, ideal for the location of dams to generate power for mills, continued to attract more and more settlers into the watershed. The Huron River at Dexter contains 65% of the basin's drainage and drops 195 feet to Rawsonville (Russell and Leverett 1915). Saw, grist, paper, cider, and woolen mills were developed. By 1884, the use of water to produce electricity had begun, a practice that continues today. In fact, in 1914, a study proposed that it would be feasible to operate 10 dams each 21 feet high from Dexter to Rawsonville (Russell and Leverett 1915). Many of these good-gradient areas where mills were located became towns. Commerce, Milford, Delhi, Ann Arbor, and Ypsilanti are examples.

More recently, river and land uses have changed in the watershed. Urban development is replacing the agrarian development of the 18th and 19th centuries and the industrialization of the early and mid-20th century. Cities such as Ann Arbor and Ypsilanti continue to grow in population and size,

and the Detroit Metropolitan area is expanding into Livingston and western Oakland Counties (Anon 1991).

9.2.4.2 French Landing Context

Formal settlement of the 36-square mile area known today as Van Buren Charter Township dates to the year 1800, when Henry Snow is recorded as locating in the area where Rawsonville Road crosses the Huron River. This area became known informally as Snow's Landing.

In 1827, the area was formally organized as Huron Township, occupying the 144 square miles presently divided into Van Buren Charter Township, Huron Charter Township, Sumpter Township and the City of Romulus. Van Buren Township would subsequently split from Huron Township on April 6, 1835, taking its name from then-Vice President Martin Van Buren. The new township contained nearly 500 residents by this time. In 1836, a year prior to Michigan being granted statehood, Amasah Rawson filed a plat for a community named Michigan City in the Snow's Landing area. When a post office located there in 1838, the village was renamed Rawsonville (Van Buren, 2020).

Connected to the state and region by major transportation corridors, Van Buren Township continued to be an agricultural center serving southeastern Michigan through the late-19th and early 20th Centuries. As demand for electricity grew in the early years of the 20th Century, the Huron River was identified as a source of hydroelectric power. The Detroit Edison Company began purchasing lowlands along the river in the Belleville area beginning in 1910, and construction of the French Landing Dam and Powerhouse was completed in 1925.

The inundation of the Huron River created Belleville Lake, which removed about two square miles of land from active use. The lake, with its east-west orientation, created a large seam through the middle of the Township, effectively separating its northern and southern portions with a large body of water. Though the three preexisting road crossings of the Huron River (at Rawsonville, Belleville, and Haggerty Roads) were retained, a greater cultural separation between north and south began to take hold.

Belleville Lake also permanently flooded the Township's original settlement of Rawsonville. Whereas Denton and Belleville had been connected to the railroads, Rawsonville missed out on such an opportunity, and had begun to decline after 1880. The remaining portions of the village were flooded, and a Michigan Historical Marker on the northeast corner of Rawsonville Road and South Grove Street commemorates the site.

Belleville Lake immediately began drawing visitors and part-time residents from the region to Belleville and the Township. Lakefront cottages and homes were developed on the south shore of the lake from the 1930s onward, giving the area a resort-like character, and attracting residents with higher incomes. Detroit Edison ceased operating the French Landing Dam and the project was decommissioned in the 1960s. The Township was able to purchase Belleville Lake, French Landing Dam, and remaining undeveloped land on the north side of the lake in 1973 from Detroit

Edison; the latter area is now Van Buren Township Park. Since 1988, The French Landing Dam has again been used by the Township to generate electricity, which is sold back to the regional power grid.

9.2.4.3 Phase I Archaeological Survey

As part of relicensing, TRC, on behalf of the Licensees, conducted a *Phase I Archaeological Survey* in September of 2023. Results of the survey were filed as "Privileged" with the Commission as part of the initial study report (ISR).

The goal of the survey was to determine any potential effects of Project operation on known archaeological and historic resources that are included in or eligible for NRHP, and to check any eroding area for artifacts and possible site identification. For purposes of the survey, an area of potential effect (APE) was determined to be the shoreline of the impoundment and upland areas within the Project boundary. In addition to determining the APE, TRC sent an archives research request to Michigan to review the archaeological and above ground inventory files, previous archaeological survey reports, the Archaeological Atlas of Michigan (Hinsdale 1931), county histories, General Land Office (GLO) survey maps, the NRHP, the AVD/TRC database for the Project, and previous reports of relevant archaeological surveys and evaluations near or at the Project. The literature and archives review were in-person at the Michigan SHPO office.

Based on the archives review, three previously identified archaeological sites and one cemetery were found to be located within, or immediately adjacent to, the APE. The sites are further discussed below.

- Michigan City (20WN628)
    - This site, recorded by Bela Hubbard ca. 1838-1841, was described as a nineteenth century American village. Hubbard noted structures, mills, and a ford or ferry. It is believed that some of the structures noted at the time may now be under water because of the level of Belleville Lake (MISHPO 2023; Gram 1985). This site has not been evaluated for significance in terms of NRHP criteria.
- Bells Mill (20WN629)
    - This site, also recorded by Bela Hubbard ca. 1838-1841, is reported as a nineteenth century American sawmill and grist mill (MISHPO 2023; Gram 1985). This site has not been evaluated for significance in terms of NRHP criteria.
- Belleville Cemetery (20WN780)
    - Another Bela Hubbard recorded site ca. 1838-1841, is described as a nineteenth century residential dwelling (MISHPO 2023; Gram 1985). The site has not been evaluated for significance in terms of NRHP criteria.

- Hillside Cemetery
    - This Euro-American cemetery was founded in 1885 by John Wilson Clark. It is an active cemetery (Hillside Cemetery 2023). The 1819 GLO maps show the original course of the river as it traversed the area at that time; the maps show nothing of cultural significance. The 1851-1944 archaeological atlas shows the Potawatomi trail (Hinsdale 1944).

The field survey found the French Landing Hydroelectric Project shoreline is generally well protected by natural rock and armored in places with rip rap for bank stabilization. Emergent and submergent vegetation also buffer against natural wave action and boat wakes.

Three previously reported archaeological sites and one cemetery are mapped in SHPO map files as overlapping or abutting the Project shoreline. The three sites, 20WN628, 20WN629, and 20WN780, are stable and showed no exposure on inspection.

Thirteen bank exposures were noted during this shoreline survey; two are in the Hillside Cemetery property. Much of the shoreline at the Hillside Cemetery is densely vegetated except at the two areas of exposure. No artifacts or archaeological features were found at these locations. Eleven other bank exposures were inspected for artifacts and cultural features that might have been visible at the surface and face of the bank. No artifacts or cultural features were noted; therefore, an archaeological site is not being affected at those locations. No additional archaeological work was recommended for those locations.

9.2.4.4 Historic Architecture Survey

In support of relicensing, the Licensees coordinated with UWM to conduct a Phase I reconnaissance-level historic resources survey. Tasks completed in the survey included developing the APE, completing a literature review, conducting a field survey, evaluating the potential eligibility of each property surveyed, preparing a preliminary report and Section 106 submittal, and preparing a finding of effect document to provide to consulting parties.

For purposes of the survey, the APE was identical to the APE used in the Phase I Archaeology survey, however, structures located on properties adjacent the shoreline were not evaluated. Through consultation with SHPO, above-ground properties adjacent to the shoreline were not included within the APE.

The survey evaluated one historic complex and eight contributing resources. The French Landing Hydroelectric Historic Complex contains 8 contributing resources, each having their own historic function within the hydro facility. No additional properties were identified within the APE for survey during the course of current investigations.

The French Landing Hydroelectric Historic Complex is comprised of both buildings and structures, identified based on their functions within the hydroelectric system. Contributing

resources include a Substation, East Earthen Embankment, East Sector Gate, Powerhouse, West Sector Gate, Fish Ladder (abandoned), Barrel Arch Gravity Dam, and West Earthen Embankment. A caretaker's house that was located on the eastern bank was removed at an unknown date.

The French Landing Hydroelectric Historic Complex was recommended eligible for listing in the NRHP under Criterion A for its association with the history of the Van Buren Charter Township development. The construction of the hydroelectric facility, in addition to providing electrical power to surrounding homes and businesses, changed the character of the surrounding township from largely agricultural to suburban with a new emphasis on the recreational opportunities provided by the creation of Belleville Lake.

Under Criterion C, the French Landing Hydroelectric Complex was recommended eligible for listing in the NRHP for its engineering. It is an excellent example of a hydroelectric facility from the 1920s, featuring a barrel arch concrete gravity dam, original sector gates, and a four-story brick powerhouse with cast stone detailing. While the replacement of the generating unit has led to a slight loss of material integrity, the site retains its integrity of Location, Design, Workmanship, Setting, Feeling, and Association. Its significance is enhanced through its rehabilitation and continued use as a productive hydroelectric facility.

9.3 Environmental Analysis

FERC's SD2 identified effects of continued Project operation on properties that are included in or eligible for inclusion in the National Register of Historic Places as a potential site-specific resource issue to be addressed in its NEPA analysis. The Project will continue to operate under its current operating procedures and there are no proposed changes to Project structures which may be eligible for inclusion in the NRHP. The Project will continue to operate in a run-of-river mode with no changes to impoundment water levels. In addition, the majority of the impoundment shoreline is protected, limiting any possible erosion to the Project shoreline. As a result, there are no anticipated adverse impacts to cultural resources due to continued Project operation.

9.3.1 Agency Recommended Mitigation

The Licensees are not aware of any agency recommended mitigation related to cultural resources at this time.

9.3.2 Applicant Proposed Mitigation

The Licensees are not proposing any PME measures related to cultural resources.

9.3.3 Unavoidable Adverse Effects

As there are no proposed changes to Project operation or Project facilities listed as eligible for inclusion in the NRHP, there are no unavoidable adverse effects anticipated due to continued Project operation.

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10 SOCIO-ECONOMIC RESOURCES

10.1 Affected Environment

The Project is located along the Huron River within the Van Buren Charter Township and the City of Belleville in Wayne County, Michigan. The City of Ypsilanti (Washtenaw County) is the nearest city, located 11 miles to the northwest of the Project. Ann Arbor, which lies approximately 22 miles northwest of the Project in Washtenaw County is the nearest large city. The following sections summarize socioeconomic conditions in Wayne County, the Township Van Buren, Washtenaw County and nearby cities.

10.1.1 Population Patterns

Wayne County has the highest population density in the state. The 2020 U.S. census reported that approximately 1,793,561 people reside in Wayne County, giving the county a population density of 2,931 people per square mile. The county seat is the city of Detroit (population 639,111 or 4,607 people per square mile). Within the Project area, the population of Van Buren Charter Township was 30,375, with a population density of 893 people per square mile. The city of Belleville reported a population of 4,008 and a population density of 3,397 people per square mile (Census 2020).

Washtenaw County lies west of Wayne County and has a population of 372,258, with a population density of 527 people per square mile. The county seat is Ann Arbor, which has a population of 123,851 and a population density of 4,392 people per square mile. The nearest city to the Project, Ypsilanti, has a population of 20,648 with a population density of 4,392 people per square mile. Table 10.1.1-1 reports the 2020 Population Census data in the area of the Project (Census, 2020).

Table 10.1.1-2 shows the population change in the State of Michigan and the Project vicinity from 2010 to 2020 based on the U.S. Population Census. The State of Michigan experienced a population increase of 1.9% from 2010 to 2020, while the population of Wayne County decreased 1.5%. Within the Project vicinity, Van Buren Charter Township experienced a modest population increase of 5.4%, while the population of the City of Belleville remained largely unchanged, increasing by 0.4%. (Census, 2020).

10.1.2 Income and Poverty

Income distributions, poverty rates, and unemployment rates of places in the Project vicinity are shown in Table 10.1.2-1. The median household income in 2023 in the region varied to that of Michigan's median ($71,149). The Van Buren Charter Township reported median income was approximately 6% higher than the states, at $75,608, while the city of Belleville's median income was approximately 16% lower than the state, at $59,929. Wayne County's median household income of $59,521 was also 16% lower than the states median (Census, 2023a).

Poverty rates for Van Buren and Belleville were both lower than Wayne County, as shown in Table 10.1.2-1. The 2023 American Community Survey (ACS) reported poverty rates for Van Buren and

Belleville as 11% and 6% respectively, while Wayne County reported a poverty rate of 20%. The state of Michigan reported a poverty rate of 13% (Census 2023a).

Unemployment rates for Van Buren Charter Township are similar to that of Wayne County, with rates of 8.5% and 8.7% respectively. The City of Belleville reported rates higher than both Wayne County and Van Buren, with a reported rate of 10.8%. The state of Michigan recorded an unemployment rate of 5.8%. Table 10.1.2-1 shows the employment rates for the region (Census 2023a).

10.1.3 **Project Vicinity Employment Sources**

Wayne County is home to global companies Ford Motor Company and General Motors, as well as major medical centers, research universities and governmental offices. The county has the highest concentration of automotive research and technical centers in the world. Educational, health and social services, and manufacturing employed the highest number of people in Wayne County, as well as Van Buren, while educational, health and social services and transportation and warehousing employed the highest number in Belleville (Table 10.1.3-1) (Census, 2023b). The top 10 employers in southeast Michigan, which includes Monroe, Lenawee, Washtenaw, Hillsdale, Jackson, Ingham, Livingston, Oakland, Wayne and Macomb counties, as well as the distribution of industry for the municipalities in the Project vicinity are shown in Table 10.1.3-2 (Crain's).

Table 10.1.1-1: 2020 Population and Density of Places Near the Project

State/County/City	Population	Land Area (sq. mi.)	Population Density (people/mi.^{2})	Approximate Distance from Project (mi.)
State of Michigan	10,077,331	56,608.2	178.0	--
Wayne County	1,793,561	611.8	2,931.4	--
Washtenaw County	372,258	706.0	527.3	--
Van Buren Charter Township	30,375	34.0	893.3	3.1
City of Belleville	4,008	1.18	3,396.6	3.4
City of Detroit	639,111	138.7	4,606.8	25.6
City of Ann Arbor	123,851	28.2	4,391.9	23.2
City of Ypsilanti	20,648	4.3	4,811.9	11.2

Source: Census 2020, Google maps, 2022

Table 10.1.1-2: Population Change from 2010 to 2020

State/County/City	2010	2020	Percent Change
State of Michigan	9,883,640	10,077,331	+1.9%
Wayne County	1,820,584	1,793,561	-1.5%
Washtenaw County	344,791	372,258	+8.0%
Van Buren Charter Township	28,821	30,375	+5.4%
City of Belleville	3,991	4,008	+0.4%
City of Detroit	713,777	639,111	-10.5%
City of Ann Arbor	113,934	123,851	+8.7%
City of Ypsilanti	19,435	20,648	+6.2%

Source: Census 2010, Census 2020

Table 10.1.2-1: Median Household Income, Poverty Rate, and Unemployment, 2022

State/County/City	Median Household Income	Percent in Poverty	Percent of Unemployment
State of Michigan	$71,149	13%	5.8%
Wayne County	$59,521	20%	8.7%
Washtenaw County	$87,156	14%	4.4%
Van Buren Charter Township	$75,608	11%	8.5%
City of Belleville	$59,929	6%	10.8%
City of Detroit	$39,575	32%	14.1%
City of Ann Arbor	$81,089	23%	3.6%
City of Ypsilanti	$44,141	26%	7.9%

Source: Census, 2023a

Table 10.1.3-1: Industry by Occupation for the Civilian Employed Population 16 Years and over, 2023

Industry	Wayne County	Van Buren Charter Township	City of Belleville
Agriculture, forestry, fishing, hunting, mining	1,413	21	24
Construction	23,874	480	22
Manufacturing	114,122	2,407	144
Wholesale trade	12,271	298	0
Retail trade	44,007	1,410	120
Transportation & warehousing, & utilities	37,454	1,089	273
Information	7,241	246	0
Finance, insurance, real estate & rental	37,678	815	128
Professional, scientific, management, administrative, & waste management services	59,133	780	163
Educational, health & social services	112,296	2,725	246
Arts, entertainment, recreation, accommodation & food services	30,132	297	160
Other services (except public administration)	17,793	306	30
Public administration	21,737	707	29

Source: Census, 2023b

Table 10.1.3-2: Top 10 Employers of Full-time employees in Southeast Michigan (as of July 2022)

Rank	Name	Full-time employees	Business Description
1	Ford Motor Company	47,750	Automobile manufacture
2	Stellantis NV	42,444	Automobile manufacture
3	General Motors Company	38,600	Automobile manufacture
4	University of Michigan	35,620	Public University
5	Corewell Health	21,674	Healthcare system
6	U.S. Government	19,953	Federal Government
7	Henry Ford Health System	17,469	Healthcare system
8	Rocket Companies Inc.	14,109	Financial technology
9	Trinity Health Michigan	13,186	Healthcare system
10	Ascension Michigan	12,085	Healthcare system

Source: Crain's, 2023

10.2 Environmental Analysis

As a generator of electric power, an employer, a taxpayer in the region, and a provider of recreational opportunities, the Project positively contributes to the socioeconomics of the region. The Licensees are not proposing any changes to Project operations that would adversely impact socioeconomic resources near the Project.

10.2.1 Agency Recommended Mitigation

The Licensees are not aware of any agency recommended mitigation related to socioeconomic resources at this time.

10.2.2 Applicant Proposed Mitigation

The Licensees are not proposing any PME measures related to socioeconomic resources.

10.2.3 Unavoidable Adverse Effects

No unavoidable adverse impacts to socioeconomic resources are expected to occur as a result of the continued operation of the Project.

10.3 References

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11 CONSISTENCY WITH FERC RECOGNIZED COMPREHENSIVE PLANS

Section 10(a)(2) of the Federal Power Act (FPA), 16 U.S.C. § 803(a)(2)(A), requires FERC to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the Project. The federal resources agencies, as well as the State of Michigan, have prepared a number of comprehensive plans, which provide a general assessment of a variety of environmental conditions in Michigan. A list of existing FERC-approved State of Michigan and federal plans was obtained from the Commissions website as of April 2025. FERC currently lists 134 comprehensive plans for the State of Michigan. Of the 134 plans listed, 10 are potentially relevant to the Project. The Project's consistency with pertinent state and federal comprehensive plans is discussed below.

11.1.1 FERC-Approved State of Michigan Comprehensive Plans

Note: Unless otherwise noted, these plans have not been updated or updates have not been submitted to FERC for approval since their development dates noted below.

Forest Service. 2006. Huron-Manistee National Forests land and resource management plan. Department of Agriculture, Cadillac, Michigan. March 2006 (Amended January 2012).

The Huron-Manistee National Forests land and resource management plan (Huron-Manistee Plan) serves as the management plan for the Huron-Manistee National Forests, outlining goals, objectives, and practices for sustainable resource management. It emphasizes the importance of balancing ecological health with recreational and economic needs of the community. The plan includes strategies for vegetation management, wildlife habitat conservation, and mineral resource development while ensuring compliance with environmental regulations.

The Huron-Manistee Plan does not include provisions specific to the Project area, but general goals and objectives for resource management. The Project has limited upland areas that are applicable to the Huron-Manistee Plan. Upland areas within the Project boundary include project structures and project recreation facilities with no forested land. French Landing Park complies with the recreational management practices outlined in the Huron-Manistee Plan, which include providing a range of recreational opportunities, such as hiking and fishing, while maintaining the scenic integrity of the landscapes.

Michigan Department of Environmental Quality. 2002. Nonindigenous Aquatic Nuisance Species (ANS) State Management Plan Update. Prevention and Control in Michigan Waters. Lansing, Michigan.

The Nonindigenous Aquatic Nuisance Species (ANS) State Management Plan, initially called the Aquatic Nuisance Species State Management Plan, was approved in 1996 under the National Invasive Species Act and was updated in 2002. The plan outlines the collaborative efforts by various state departments, including the Michigan Department of Environmental Quality, Natural Resources, and Agriculture, to prevent and control ANS in Michigan waters.

The plan outlines a series of recommended actions guided by specific goals. These include enhancing legislation and policy coordination, developing educational materials, and establishing collaborative networks for research and monitoring. The document stresses that a coordinated approach is essential for reducing the impacts of ANS on Michigan's waters. Collaborative efforts among researchers, agencies, and stakeholders to enhance data sharing and improve management strategies are encouraged throughout the document. The document also emphasizes the need for comprehensive information and education initiatives to raise awareness about ANS among recreational boaters, aquaculture operators, and the general public.

The *Botanical Resources Study* and *Freshwater Mussel Habitat and Assessment Survey* conducted as part of the relicensing effort for the Project evaluated the presence of invasive species in the Project boundary. Findings from each study were shared with state agencies to inform the agencies of current locations and densities of invasive species. In addition to sharing research conducted, the Licensees are proposing to develop an invasive species management plan under the subsequent license. The plan will outline strategies to prevent or minimize the spread of invasive species, including ANS. As the Project is collaborating with research efforts, and is proposing to develop an invasive species management plan, it is consistent with the Aquatic Nuisance Species State Management Plan Update.

Michigan Department of Natural Resources. 1995. Huron River assessment. Special Report 16. Lansing, Michigan. April 1995 (Updated October 2002).

The Huron River assessment report is a comprehensive assessment of the Huron River, focusing on its ecological characteristics, fish communities, and management options. The assessment aims to identify opportunities for improving aquatic resources and fisheries values within the watershed, while also encouraging public involvement in management decisions. It outlines the river's geography, history, biological communities, geology, hydrology, channel morphology, land use patterns, and water quality, ultimately providing a foundation for future management strategies.

The report outlines various management options to address the identified issues, including the protection of existing habitats, rehabilitation of degraded areas, and public engagement in decision-making processes. Management of recreation, biological communities, dams and other barriers, water quality, and fisheries are discussed in the plan and applicable to the Project. Specific recommendations include improving public access to waters, protecting fishery resources by screening turbine intakes at operating hydroelectric dams and requiring hydroelectric projects to operate at run-of-river flows. As the Licensees are proposing to operate the Project in a run-of-river mode, and access to the waters is provided both in the impoundment and tailrace area, the Project is consistent with the management strategies outlined in the report.

Michigan Department of Natural Resources. 2023. Strategic Plan 2023-2029 Charting the course: Fisheries Division's Framework for Managing Aquatic Resources. 2023-2029 Fisheries Division Strategic Plan.

The MDNR Fisheries Division's Strategic Plan 2023-2029 is focused on managing and enhancing the state's aquatic resources while addressing challenges such as climate change and invasive species. The plan provides goals that emphasize providing diverse freshwater fishing and recreational opportunities supported by healthy aquatic environments.

The strategic plan includes five key goals aimed at ensuring sustainable fisheries, promoting effective communication, building partnerships, developing assessments, and fostering efficient operations. The Project impoundment and downstream reach of the Huron supports recreational and sport fishing. Continued Project operation in a run-of-river mode is consistent with the goals outlined in the strategic plan.

Michigan Department of Natural Resources. 2023. Michigan Statewide Comprehensive Outdoor Recreation Plan 2023-2027. Lansing, Michigan.

The Michigan SCORP 2023-2027 serves as a strategic framework for outdoor recreation in Michigan. It aims to shape investments in outdoor recreation infrastructure, land acquisition, and programming, while addressing ongoing and emerging trends and needs in outdoor recreation.

The SCORP is a five-year strategic plan that enables Michigan to access federal grants and guides local communities in prioritizing outdoor recreation resources. It evaluates public outdoor recreation demand and supply, identifies investment priorities, and ensures ongoing community engagement in planning.

The primary goal of the 2023-2027 SCORP is to ensure equitable access to outdoor recreation assets while promoting healthful physical activity and sustaining natural resources. Key strategies include improving collaboration among stakeholders, expanding recreational access, and enhancing the health benefits of outdoor activities.

As discussed in Section 7.1.4.1, the SCORP does not include strategies or discuss trends specific to the Project area. While the SCORP does not address the immediate area, the French Landing Project recreation facilities are consistent with the general goals outlined in the SCORP.

11.1.2 FERC-Approved Federal Comprehensive Plans

National Park Service. The Nationwide Rivers Inventory. Department of the Interior, Washington, D.C. 1993.

The NRI is a listing of free-flowing river segments in the United States that possess significant natural or cultural values. Segments on the NRI are considered eligible or potentially eligible for inclusion in the National Wild and Scenic Rivers System. The NRI serves to protect rivers from federal projects that could harm the free-flowing condition and outstanding values. In addition, the NRI is used by federal agencies for planning and environmental reviews to ensure the preservation of NRI listed rivers, and to provide information for state river assessments, ecosystem management, and recreational activities.

Belleville Lake is not listed on the NRI, however, the Huron River immediately upstream of Belleville Lake and downstream of the dam is listed. This portion of the river was listed in 1982 and updated in 1995. The River is described as an all-around good river flowing and the reach in the Project area is listed in the NRI for its outstanding fish, historic, and recreational value.

The Licensees are proposing to continue to operate the Project in a run-of-river mode, which allows the downstream Huron River to be free flowing. As such, the Project is consistent with the NRI.

U.S. Fish and Wildlife Service. 1988. Great Lake and Northern Great Plains Piping Plover Recovery Plan. Department of the Interior, Twin Cities, Minnesota. May 12, 1988.

The Great Lake and Northern Great Plains Piping Plover Recovery Plan details the status and strategies for the conservation of the Great Lakes piping plover (*Charadrius melodus*), which was listed as endangered in 1986 due to a significant decline in its habitat. The plan outlines the current population status, habitat requirements, limiting factors, recovery objectives, and strategies aimed at restoring a viable population by 2020. The Great Lakes population is isolated from other populations in North America, leading to increased vulnerability to environmental changes and demographic risks.

Piping plovers rely on sparsely vegetated beaches, cobble pans, and sand spits for breeding and raising young. Key threats include habitat destruction, human disturbance, predation, and contaminants. The recovery strategy includes increasing fecundity, protecting essential habitats, enhancing genetic diversity, and engaging in public education. Actions needed encompass habitat protection, management of breeding and wintering populations, scientific research, and development of partnerships and funding mechanisms. The plan emphasizes the importance of monitoring progress and adapting strategies as necessary.

No piping plovers have been observed in Wayne County. In addition, there is limited habitat available in the Project area that would support piping plover breeding pairs. As a result, this plan does not apply to the Project.

U.S. Fish and Wildlife Service. Canadian Wildlife Service. 1986. North American waterfowl management plan. Department of the Interior. Environment Canada. May 1986.

The North American Waterfowl Management Plan serves as a comprehensive guide for the conservation of waterfowl and their habitats across North America. By setting clear population goals and emphasizing habitat protection, the plan aims to foster cooperation among stakeholders and ensure the long-term sustainability of waterfowl species. The successful implementation of this plan requires ongoing commitment and collaboration to address the challenges posed by habitat loss and changing environmental conditions.

The Project lies outside the waterfowl habitat areas of major concern as mapped in the plan. As the Licensees propose to continue to operate the project in a run-of-river mode which limits

fluctuations to Belleville Lake water levels and supports the existing wetlands, the continued operation of the Project is consistent with the goals of the management plan.

U.S. Fish and Wildlife Service. 1988. The Lower Great Lakes/St. Lawrence Basin: A component of the North American waterfowl management plan. December 29, 1988.

This document describes strategies for the specified geographically defined management unit called joint venture areas, as defined by the North American Waterfowl Management Plan (NAWMP). The strategies in the Lowe Great Lakes/St. Lawrence Basin joint venture follow those outlines in the NAWMP, as discussed above. As described above, the Project lies outside the waterfowl habitat areas of concern, and as the Project proposed to operating in a run-of-river mode, it is consistent with the goals of the Lower Great Lakes/St. Lawrence Basin plan.

U.S. Fish and Wildlife Service. 1993. Upper Mississippi River & Great Lakes Region joint venture implementation plan: A component of the North American waterfowl management plan. March 1993.

This document outlines the Upper Mississippi River and Great Lakes Region Joint Venture Waterbird Habitat Conservation Strategy, which aims to maintain and improve habitat for waterbird populations through targeted conservation efforts. The strategy emphasizes the importance of integrating continental migratory bird priorities into local habitat recommendations, aiming to enhance the carrying capacity for priority waterbird species within the region. The document sets forth explicit habitat objectives linked to population goals for various waterbird species, recognizing the need for ongoing population estimates and habitat assessments to refine conservation strategies over time.

The Project operates in a run-of-river mode which limits fluctuations to Belleville Lake water levels. This mode of operation reduces impacts to potential habitats for waterfowl in the Project area. As a result, the Project is consistent with the goals outlined in the plan.

12 RESPONSIVENESS SUMMARY

This section summarizes the Licensee's responses to comment letters received on the Draft License Application, which was filed at FERC and distributed to stakeholders on November 27, 2024. Comment letters were received from:

- Michigan Hydro Relicensing Coalition (MHRC) on February 24, 2025
- EGLE on February 25, 2025
- MDNR on February 25, 2025

Responses to comments are included in Appendix E-1.

APPENDIX E-1: RESPONSIVENESS SUMMARY

Comment ID	Comment	Response
FERC-1	**Exhibit A** Section 4.61(c)(1)(viii) of the Commission's regulations requires that Exhibit A include the sizes, capacities, and construction materials of project facilities. Exhibit A does not provide: (1) description of the stoplog gates, including location and size; (2) description of the trashracks, including location, size, and clear bar spacing; (3) description of the plunger valve for the west spillway gate, including size and material; (4) description of the butterfly valve and sluiceway shown on sheet 3 of Exhibit F, including the sizes, capacities, and materials; (5) material of the tailrace; (6) description of the weir located in the tailrace, including size and material; (7) description of the sheet piling located on the shoreline downstream of the dam, including size and material; (8) size of the sector gates to the east and west of the powerhouse; (9) description of the abandoned fishway, including material and type/size of gate; (10) minimum hydraulic capacity of the powerhouse; (11) description of the aprons downstream of the powerhouse and arch dam, including material and size; (12) description of the arch emergency spillway, including size and crest elevation; and (13) description of the abutments of the dam, including size and material. Please include these descriptions in the final application.	Exhibit A has been updated to include descriptions of the Project facilities as requested. The butterfly valve operators and valve stems were removed years ago and the 4.5 ft. diameter concrete sluiceway is no longer operational. As such, they are not included in the Exhibit A description of Project facilities.
FERC-2	**Exhibit A** Section 4.61(c)(1)(iii) of the Commission's regulations requires that Exhibit A include a description of how the plant is to be operated. Please describe the operation of the: (1) plunger valve; (2) butterfly valve and sluiceway;	Exhibit A has been updated to include the requested information. As noted in the response to FERC-1, the butterfly valve and sluiceway are no longer operational.

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	and (3) flood control gate, including whether the valves/gates are operated manually or automatically, and under what flow/operating conditions the valves/gates are used. Please also describe the operation of the arch emergency spillway, including the flow/operating conditions when the spillway is used. Finally, please describe whether the fishway is ever used to pass flows downstream of the project and, if so, under what flow/operating conditions.	
FERC-3	**Exhibit A** Table 1-1 of Exhibit A states that the average annual outflow from the project is 630 cfs, which is greater than the stated average annual inflow of 598 cfs. Please rectify this discrepancy in the final application.	The average annual inflow to the Project is 632 cfs. Exhibit A has been updated to correct this value.
FERC-4	**Exhibit E – Aquatic Resources** Commission staff's October 6, 2022 Scoping Document lists water quality and migratory fish, including lake sturgeon, as potentially cumulatively affected resources. Exhibit E does not describe the potential cumulative effects on these resources. In the final application, please include the information required by section 5.18(b)(2)	Given that the migratory species downstream of the Project either do not reach the Project (sturgeon) or do not need to be passed upstream to meet fisheries management goals (stocked steelhead), the Project is not affecting populations or fisheries management for migratory species. Therefore, there are no known cumulative effects that would apply to these species from the operation of the Project. Section 4.2 has been updated to reflect this information.
FERC-5	**Exhibit E – Aquatic Resources** Section 5.18(b)(5)(ii)(F) of the Commission's regulations requires that Exhibit E explain how and why the proposed project would, would not, or should not comply with relevant comprehensive plans, and describe any	The information requested has been included in Section 11.

Comment ID	Comment	Response
	relevant resource agency or Indian Tribe determination regarding the consistency of the project with any such comprehensive plan. Exhibit E does not include this information. In the final application, please provide the information required by section 5.18(b)(5)(ii)(F).	
FERC-6	**Exhibit E – Terrestrial Resources** Please include an analysis of project effects on invasive plant species, and any current/proposed measures related to invasive plant species.	Section 5.2 has been updated to include analysis of invasive plant species. The Licensees proposed to develop an Invasive Species Management Plan under a subsequent license, as described in Section 5.2.2.
FERC-7	**Exhibit E – Terrestrial Resources** Please describe any current or proposed vegetation management activities at the project (e.g., regular or seasonal mowing, tree trimming and/or removal, herbicide use), including methods, total acreage of project land affected, and approximate dates when the activities typically occur.	The Project operators perform lawn mowing and vegetation management, which occurs two times a month from May to mid-October. No tree trimming occurs within the Project boundary unless a safety issue arises from a tree or tree branch. Additional details regarding vegetation management are described in Section 5.1.2.
FERC-8	**Exhibit E – Threatened and Endangered Species** Section E.6.1.3.4 states that the monarch butterfly, a species recently proposed for listing as threatened under the Endangered Species Act, may be present at the project. Please describe any suitable habitat (i.e., host plants such as milkweed species [Asclepias spp.] and other nectar-producing plants) within the project boundary that may support this species. Also, please describe whether current or proposed vegetation management has the potential to affect monarch butterfly or its habitat.	The vast majority of upland area within the Project boundary is developed, with mowed vegetation limiting possible habitat for the monarch butterfly. Shoreline along the impoundment is similarly developed, with rip-rap and other armored protection which limits potential habitat. The *Botanical Resources Survey* observed some occurrences of common milkweed (*Asclepias syriaca***)** and swamp milkweed (*Asclepias incarnata*), as well as nectar rich flowering species such as boneset (*Eupatorium perfoliatum)* and joe-pye weed (*Eutrochium maculatum*). In addition, water-willow and lotus

Comment ID	Comment	Response
		species which are located at the westernmost end of the impoundment may attract monarch butterflies. No vegetation management occurs along the impoundment shoreline or within the impoundment and the Licensees are not proposing to expand their current vegetation management practices. As such, Project operation and maintenance would not affect potential monarch butterfly habitat.
FERC-9	**Exhibit E – Recreation** As approved on August 6, 1991, the licensees are required to maintain French Landing Park as a project recreation facility. French Landing Park includes a "tailwater fishing area," but the tailwater fishing area is not described in section 7.1.2.1 of Exhibit E. In the final application, please include a figure that shows the location of the amenities in French Landing Park. Please also describe the amenities at the tailwater fishing area, including any signs or trails to the area.	Section 7.1.2.1 has been updated to include descriptions of the tailwater fishing area. In addition, Figure 7.1.2.1-1 has been added to depict locations of amenities at French Landing Park.
FERC-10	**Exhibit E – Recreation** Section E.7.1.2.1 states that anglers fish in the impoundment from the earthen portion of the dam near the portage take-out site at an "informal" angler access area, and that a natural surface parking area is available off Edison Lake Road. In the final application, please clarify if the licensees are proposing to maintain these sites as project recreation facilities in any new license issued. Please also include the "informal" angler access area and parking on Figure 7.1.2-1 of Exhibit E.	The Licensees are not proposing to maintain this informal recreation site as part of a new license.

Comment ID	Comment	Response
FERC-11	**Exhibit E – Cultural Resources** Please file documentation of consultation with the Michigan State Historic Preservation Officer, such as consultation on the area of potential effects for archaeological and architectural resources; cultural resource study results; and proposed measures.	A consultation record of correspondence with the MI SHPO is included in Appendix E-2.
FERC-12	**Exhibit F** Section 4.41(g)(1) of the Commission's regulations requires that an application include an Exhibit F that contains drawings showing all major project structures in sufficient detail to provide a full understanding of the project, including plans (overhead view), elevations (front view), profiles (side view), and sections. The Exhibit F drawings do not provide all of the information required by section 4.41(g)(1), including: (1) section view of the left earthen embankment; (2) section view of the sheet piling section; and (3) elevation (front) view of the dam, including the spillways, gates, and powerhouse intake. Please include this information in the final application.	A section view of the left earthen embankment has been added to sheet F-3. A section view of sheet piling sections and elevation view of the dam, spillways, gates, and powerhouse intake has been added to sheet F-2.
FERC-13	**Exhibit F** Section 4.41(g)(3) of the Commission's regulations requires a Supporting Design Report (SDR) demonstrating that the existing and proposed project structures are safe and adequate to fulfill their stated functions. Please include the SDR in the final application.	The SDR has been filed with this license application in Volume II as Critical Energy Infrastructure Information.

Comment ID	Comment	Response
FERC-14	**Exhibit F** Sheet 2 of Exhibit F depicts and labels two generators, and sheet 1 of Exhibit F appears to show two generators. However, the current license only includes a single generator, as described in section 2.1 of Exhibit A. Please revise Exhibit F to correct this discrepancy.	Sheets F-1 and F-2 have been revised to depict a single generator.
FERC-15	**Exhibit G** Section 4.61(h) of the Commission's regulations requires that Exhibit G include: (1) project boundary data in a geo-referenced electronic format (i.e., ArcView shapefile or similar format); (2) electronic boundary data that is positionally accurate to ±40 feet; (3) a text file describing the map projection used for the Exhibit G data; and (4) identification of all land owned by the applicant and lands to be acquired. Please include this information with the final application.	The requested information has been filed with this license application.
FERC-16	**Exhibit G** Section 4.41(h)(2) of the Commission's regulations requires Exhibit G to clearly describe the project boundary around: (1) the impoundment, using contour lines, courses, and distances, and/or lines upon or parallel to lines on a public land survey; (2) continuous features using specified distances from centerlines or offset lines of survey; and (2) noncontinuous features using contour lines, courses, and distances, and/or lines upon or parallel to lines on a public land survey. Please include this information in the final application.	The Project boundary description has been added to Exhibit G, as requested.

Comment ID	Comment	Response
FERC-17	**Exhibit G** Section 4.41(h)(4) of the Commission's regulations requires an Exhibit G map that identifies, by legal subdivision, lands owned in fee by the applicant, lands that the applicant plans to acquire in fee, and lands over which the license applicant has acquired or plans to acquire rights by other than fee title, including rights acquired or to be acquired by easement or lease. Please include this information in the final application.	All lands within the Project boundary are owned in fee by Van Buren Charter Township, the co-licensee. Parcel boundaries which define co-licensee owned land near Project facilities also define the Project boundary in that area. As the Project boundary line overlaps the parcel boundary lines they are indistinguishable on the map.
MHRC-1	**General** The license application needs to include a plan for financial assurances should hydropower become unviable at the project (become economically marginal).	Discussion related to financial assurances of the Project are provided in Exhibit H. The Licensees have no plans to decommission the Project. As stated in the Commission's Scoping Document 2 (SD2), decommissioning is not a reasonable alternative to relicensing in most cases.
MHRC-2	**Operations** The Coalition recommends that a new license should include an article that requires an operations monitoring plan that includes multiple verification measures (e.g., publicly accessible continuous monitoring, calibrated staff gage), a commitment to send discharge logs upon request, and an annual operations report that includes a summary of deviations.	The Licensees have proposed developing an Operations Compliance Monitoring Plan, which will describe how the Licensees will document compliance with the operational requirements of the license and any conditions of the water quality certification (WQC).
MHRC-3	**Fish and Aquatic Resources – Mitigation** The licensee proposes no mitigation related to fish and aquatic resources (fish, mussels, etc.). The Coalition disagrees as the continued operation of the French Landing hydropower project will have unavoidable	The comment does not indicate what unavoidable impacts to fish and aquatic resources would require mitigation. As discussed in Section 4.2, previous studies conducted at the Project indicate the Project is unlikely to have an adverse impact on fish

Comment ID	Comment	Response
	impacts to aquatic resources of the Huron River that must be mitigated.	populations. In addition, migratory fish downstream of the Project do not reach the Project due to the Flat Rock Dam. The *Freshwater Mussel Habitat and Assessment Survey* found no state or federally listed species, and limited native freshwater mussel abundance in the Project area. As the Licensees are proposing to continue to operate the Project in a run-of-river mode with no structural or operational changes, there is no anticipated adverse impact to fish or mussel species as a result of continued Project operation. As such, no additional mitigation is warranted.
MHRC-4	**Fish and Aquatic Resources – Cumulative effects** The Coalition agrees with the Commission's direction to the licensee to describe the effects of past, present, and future actions on cumulatively affected aquatic resources: the final license application needs to describe the potential cumulative effects on water quality and migratory fish, including lake sturgeon.	See response to FERC-4.
MHRC-5	**Threatened and Endangered Species – Mussels** While mussel densities and diversity were reported to be low in the study area, sensitive species are present. In addition, while few species were located in the downstream survey, evidence of the Rayed Bean mussel presence in 2018. This needs to be evaluated in the final license application.	The Licensee is proposing to continue operating the Project as a run-of-river project, which will minimize the fluctuations of the Project reservoir water surface elevation. No impacts to mussel species, should they be present, are anticipated due to continued Project operation. An Operations Compliance Monitoring Plan is being proposed by the Licensees. Drawdowns to the Project reservoir will be avoided; however, should a

Comment ID	Comment	Response
		drawdown be required, the plan will include strategies to minimize or avoid impacts to potential mussel species inhabiting the area.
MHRC-6	**Threatened and Endangered Species – Lake Sturgeon** While lake sturgeon currently do not have access to the French Landing Dam, this species may if the downstream Flat Rock Dam is removed. The final license application needs to consider this.	The environmental baseline for FERC relicensing is existing conditions (i.e., the Flat Rock Dam in place). As such, the Licensees did not evaluate a hypothetical scenario where the Flat Rock Dam would be removed.
MHRC-7	**Threatened and Endangered Species – Monarch Butterfly** The Coalition recommends that the licensee evaluate any effects of future operation of the hydropower project on the Monarch butterfly, a species proposed for listing under the Endangered Species Act (the Monarch butterfly may be present within the project area.	See response to FERC-8
MHRC-8	**Recreation and Land Use** The Coalition agrees with the direction provided by the Commission in its February 24, 2025 letter to the licensee regarding recreation (e.g., French Landing Park, informal fishing site, etc.).	See responses to FERC-9 and FERC-10
MHRC-9	**Recreation and Land Use – Recreation Management Plan** The Coalition recommends that the licensee be required to develop a recreation management plan as part of the final license application. This plan needs to address all existing recreational facilities, identification of needed	The Licensees are proposing to develop a Recreation Management Plan as discussed in Section 7.2.2.

Comment ID	Comment	Response
	improvements, and plans for operations and management over a new license term (including responsibilities).	
MHRC-10	**Recreation and Land Use** The final license application needs to include a plan for the long-term identification and management of non-native invasive species, both aquatic and terrestrial (periodic surveys, treatment of NNIS, etc.).	The Licensees are proposing to develop an Invasive Species Management Plan as discussed in Section 5.2.2.
EGLE-1	**Initial Statement** The statement, "MCL324.31506(2)(a) of the act exempts federally licensed dams such as the Project dam," is conditionally true and requires that, "…the inspection reports are provided to the department." For clarification, "the department" refers to EGLE, and the licensee should submit safety inspection reports to the Dam Safety Unit. Please reflect this conditional requirement in the Final License Application (FLA).	The Licensees will provide inspection reports to the EGLE Dam Safety Unit. The Initial Statement has been updated accordingly.
EGLE-2	**Exhibit E – E 3.1.1 Water Quantity** The water quantity section discusses inflows to the project, as calculated via modified USGS gage data. However, there is no presentation of a water budget or indication of water loss due to the continued operation of the project. While FERC-regulated projects are exempt from water withdrawal permits unless a diversion is present, it would be prudent to quantify the water loss from the impoundment for the purpose of the National Environmental Policy Act (NEPA) document as a means of measuring environmental impact. Loss of water from the project's continued operation should be balanced	The Project is operated in a run-of-river mode where inflow equals outflow. There are no water diversions or other consumptive uses associated with the Project. As discussed in Section 3.1.1.3, the approximate average annual rate of evaporation from Belleville Lake is approximately 4.8 cfs, which is less than 1% of the mean annual daily flow at the Project.

Comment ID	Comment	Response
	against the need to generate. To this end, EGLE recommends adding a section describing water lost due to project operation, including evaporative losses. If such an effort requires an additional study, EGLE requests this study be completed for the following reasons: 1. The cumulative impacts of water loss from the numerous dams on the Huron River have an unknown impact on downstream fisheries. 2. There may be concerns regarding the nexus of water quality, namely the concentration of pollutants and nutrients within the impoundment, which could further impact the designated uses of the Huron River. We assumed that this information would be available from flow information and therefore did not specifically request this information during comments on the Scoping Document.	
EGLE-3	**Agency Recommended Mitigation** Throughout the DLA, run-of-river operation is presented as a proxy for the need to mitigate impacts to water quality. Conversely, the continued operation of the project in run-of-river mode negatively impacts the water quality and exposes those using the impoundment for recreation to frequent cyanobacteria blooms and occasional harmful algal blooms (HABs). While cyanobacteria blooms have been present for at least the last 35 years, residents and the public remain uncertain about the safety of recreation in and on the waters. Run-of-river operation can help mitigate erosion and create a	There is no nexus between run-of-river hydroelectric generation and cyanobacteria blooms. The environmental baseline in FERC relicensing is existing conditions, which in this case means dam and impoundment in place. The French Landing Dam has existed for 100 years, well before the development of the French Landing Hydroelectric Project in its current form. Algal blooms and dense aquatic vegetation beds that are found throughout the impoundment are the result of nutrient loading from upstream sources or other factors that have no nexus to Project operations.

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	more natural flow regime downstream, but it does not eliminate the need for further mitigation.	
EGLE-4	**Agency Recommended Mitigation** The water quality is stated to improve downstream of the project. Indeed, the monitoring station FL-3 shows significant improvement in violations of the DO standard compared to the upstream site FL-1. However, these improvements are limited to DO and water temperature and come at the cost of water loss to evaporation, exacerbated water quality in the 7-mile-long impoundment from internal and external nutrient loads, and high nutrient concentrations downstream.	As noted in the comment and demonstrated by the results of the *Water Quality Study* that was conducted for this relicensing, water quality improves as it exits the Project as compared to what enters Belleville Lake. The primary drivers negatively impacting impoundment water quality are associated with upstream sources, nutrient loading, and large dense aquatic vegetation beds found throughout the impoundment – none of which have a nexus to Project operations. Water loss due to evaporation has no nexus to Project operations and is found to be negligible when compared to the total volume of water that passes through the Project. As discussed in Section 3.1.1.3, the approximate average annual rate of evaporation from Belleville Lake is approximately 4.8 cfs, which is less than 1% of the mean annual daily flow at the Project. Impoundment nutrient loads and high nutrient concentrations downstream of the Project that are noted in the comment also have no nexus to Project operations.
EGLE-5	**Agency Recommended Mitigation** EGLE recommends that the licensee explicitly acknowledge the negative impacts of continued project	The Licensees have acknowledged and evaluated potential impacts associated with the continued operation of the Project throughout Exhibit E and have

Comment ID	Comment	Response
	operation on the Huron River and propose mitigation measures to offset these impacts.	proposed commensurate protection, mitigation, and enhancement measures to address such impacts. The issues raised by EGLE in their comments (i.e., nutrient loading, evaporation, cyanobacteria blooms) have no nexus to Project operations.
MDNR-1	**General** The final license application (FLA) should include a plan for financial assurance should hydropower become unviable or if the co-licensee structure is dissolved. MDNR believes that the Commission cannot reasonably "give equal consideration to the purposes of energy conservation, the protection, mitigation of damage to, and the enhancement of fish and wildlife (including related spawning grounds and habitat), the protection of recreational opportunities, and the preservation of other aspects of environmental quality" without considering the entire life cycle of a hydroelectric project and evaluating the financial means to address issues that arise during and beyond the license period. This is especially critical given that the Project is 100 years old and will likely require repairs and upgrades to account for changing land use and environmental conditions.	Exhibit H provides financial assurances of continued Project operation.
MDNR-2	**Operations** The Licensees are not proposing any changes to operations. MDNR concurs with continued run-of-river operations where instantaneous inflow approximately equals instantaneous outflows at all times. The new license should include an article that requires an Operations Monitoring Plan with multiple verification	The Licensees are proposing to continue to operate the Project in a run-of-river mode where inflow equals outflow. The Licensees are also proposing to develop an Operations Compliance Monitoring Plan to document compliance with license and WQC requirements under a subsequent license.

Comment ID	Comment	Response
	measures, such as a headwater and tailwater continuous monitoring devices and a publicly viewable calibrated staff gage. There should also be a requirement to send discharge logs upon request and to provide an annual operations report that evaluates compliance and includes a summary of deviations.	Regarding the use of the term "instantaneous", the Commission has previously found, "[r]un-of-river mode is defined as the release of outflows from the project to approximate inflows. Because of the inherent lag times associated with the passive release of stream flows from an elevation-stabilized impoundment, precise instantaneous matching of outflows to inflows is not practical at the project."[1] Furthermore, FERC notes that "[b]ecause precise instantaneous matching of outflows to inflows is not practicable at the projects, run-of-river mode is a more accurate and realistic description of existing and proposed project operations."[1] [1] Federal Energy Regulatory Commission (FERC). 2019. Final Environmental Assessment for Hydropower Licenses – Piedmont Hydroelectric Project, P-2428-007, Upper Pelzer Hydroelectric Project, P-10254-026, Lower Pelzer Hydroelectric Project, P-10253-032, South Carolina. October 2019.
MDNR-3	**Geology and Soils** The Licensees are not proposing mitigation measures for geology and soils. MDNR recommends that the Licensees work with Huron River Watershed Council (HRWC) to develop strategies and methods to educate property owners and Belleville Lake users about shoreline stewardship. HRWC conducted a Community Engagement Survey that queried Belleville residents about priority issues in Belleville Lake. The results of the survey indicated interest in erosion mitigation strategies and shoreline best management practices, specifically along High Street and at Hillside Cemetery.	Due to the Project's run-of-river mode of operation, shoreline erosion, if any, is not caused by Project operations. Therefore, shoreline erosion related recommendations have no nexus to Project operations. However, the Van Buren Township website currently provides shoreline management guidelines for the public to reference. The documents include guidance on shoreline erosion, best engineering practices for soft engineering shorelines, landscaping for wildlife and water quality, aquatic buffer strips, and potential impacts to water quality.

Comment ID	Comment	Response
		The Licensees believe these resources are sufficient to educate the public about shoreline stewardship.
MDNR-4	**Water Resources** The Licensees are not proposing any mitigation measures for water resources. MDNR supports the mitigation measures recommended by Michigan Department of Environment, Great Lakes, and Energy (EGLE; Submittal no. 20250225-5211). MDNR will work with the Licensees and EGLE throughout the Section 401 Water Quality Certification process.	Refer to responses to EGLE comments above.
MDNR-5	**Fish and Aquatic Resources** The Licensees are not proposing any mitigation measures for fish and aquatic resources. The DLA states that "the Project's continued operation is not anticipated to impact rare fish and freshwater mussel species given that (1) no such species are present, and (2) the Licensees are proposing to continue to operation the Project in a run-of-river mode under its new license" (pg. E-105). The Licensees must protect aquatic resources regardless of whether the affected species is rare. MDNR recommends that the Licensee include plans for mitigating the effects of deviations from run-of-river, such as outages and construction in the FLA. The plan should measures to avoid drawdowns (e.g., using cofferdams to isolate work area). When drawdowns are unavoidable, there should be a plan to minimize impacts (e.g., duration, extent, timing).	See response to MHRC-5.

Comment ID	Comment	Response
MDNR-6	**Fish and Aquatic Resources** The DLA indicates that the "Belleville Lake is managed for cool and warmwater fish and the Huron River downstream from the Project is geared toward stocked, migratory coldwater species (specifically steelhead)" (pg. E-104). The FLA should revise this statement to clarify that while MDNR stocks these species, it does not mean that these are the only species of interest. There are many cool and warmwater species downstream of the Project. The FLA should also account for future conditions, as there are discussions underway to modify the downstream Flat Rock Dam that may allow additional species from Lake Erie to migrate further up the Huron river (e.g., Lake Sturgeon).	The FLA has been revised to include non-migratory resident fish species when discussing the downstream fisheries. Regarding Flat Rock Dam, see response to MHRC-6.
MDNR-7	**Terrestrial Resources** The Licensees are not proposing any mitigation measures for aquatic invasive species. MDNR recommends that the Licensees work with HRWC and the local Cooperative Invasive Species Management Area (CISMA) to develop strategies and methods to educate property owners and Belleville Lake users about aquatic invasive species. The Community Engagement Survey described above indicated interest among respondents regarding aquatic invasive species awareness and mitigation, specifically installing signage and equipment at boat launches to promote boat cleaning techniques. Invasive species management programs should use most up-to-date practices, such as early detection and rapid response for watchlist species. When in coordination with local CISMA, these measures can be very effective.	As discussed in Section 5.2.2, the Licensees are proposing to develop an Invasive Species Management Plan to mitigate the spread of invasive plant species due to Project operation and maintenance.

Comment ID	Comment	Response
MDNR-8	**Threatened and Endangered Species** The Licensees are not proposing any mitigation measures for threatened and endangered species. While mussel densities and diversity were low in the study area, there are sensitive species present. As stated above, MDNR recommends including plans to mitigate the effects of deviations from run-of-river and drawdowns in the FLA.	See response to MHRC-5.
MDNR-9	**Recreation and Land Use** The Licensees are proposing to continue to operate the French Landing Park and French Landing Park Portage Trail recreation sites. The DLA states that proposed mitigation measures regarding the portage trail and "beyond operating the [French Landing] park" will be discussed in the FLA. MDNR recommends that a Recreation Management Plan be included in the FLA. This plan should include a description of all existing recreational facilities, including nonproject recreational amenities that, if no longer available, would significantly hinder recreation within the project area. There should be a plan to replace any recreational facilities currently operated by other entities that are deemed indispensable (e.g., boat launches, parks that provide shore fishing access). This is critical as boating was identified by the Community Engagement Survey as one of the most popular recreational uses of Belleville Lake. The plan should also include an evaluation of the need for future expansion or improvement of recreational facilities and reference the Van Buren Charter Township Parks and Recreation Master Plan. Specific recommendations related to French Landing Park Portage Trail includes a	The Licensees are proposing to develop a Recreation Management Plan for Project recreation facilities and to repair the portage trail. Please refer to Section 7.2.2 for details on specific PME's related to recreation at the Project.

Comment ID	Comment	Response
	complete replacement and upgrade of the portage, improvement and expansion of the parking area, the addition of picnic tables and trash bins, and the planting of trees by the tailrace shore fishing area to provide embankment stability and shade for anglers.	

APPENDIX E-2: SHPO CONSULTATION

GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
MICHIGAN STRATEGIC FUND
STATE HISTORIC PRESERVATION OFFICE

QUENTIN L. MESSER, JR.
PRESIDENT

January 31, 2023

AARON LIBERTY
FEDERAL ENERGY REGULATORY COMMISSION
888 FIRST STREET NE
WASHINGTON DC 20426

RE: ER23-235 French Landing Hydroelectric Relicensing Project, 12100 Haggerty Road, VanBuren Township, and Belleville, Wayne County (FERC)

Dear Mr. Liberty:

The State Historic Preservation Officer (SHPO) received your request for comment under Section 106 of the National Historic Preservation Act of 1966, as amended. We have reviewed the proposed Area of Potential Effects (APE) for this undertaking and offer the following comments:

- The APE depicted in the Application for SHPO Section 106 Consultation differs from the Project Boundary identified in the April 2022 Pre-application Document (PD). This boundary is shown in several figures presented in the PD (e.g., Figure 4.8.3-1, PDF page 142, document page 131). In our view, if the undertaking concerns the entire Project Boundary, it is necessary for the entire project boundary to be encompassed in the APE. FERC should consider the effects of continual operation of the hydroelectric facility on historic along the Belleville Lake impoundment and Huron River. For instance, will fluctuations in water levels affect historic structures on the impoundment, or will possible erosion reveal submerged archaeological deposits? In many hydroelectric relicensing undertakings, the agency considers effects to structures and archaeological sites surrounding an impoundment in addition to hydroelectric facility itself.

If you have any questions, please contact Scott Slagor, Cultural Resource Protection Manager, at 517-285-5120 or by email at slagors2@michigan.gov. For questions on archaeological resources, please contact Amy Krull, Federal Projects Archaeologist, at 517-285-4211 or email at krulla@michigan.gov. **Please reference our project number in all communication with this office regarding this undertaking.** Thank you for this opportunity to review and comment, and for your cooperation.

Sincerely,

Scott E. Slagor

Scott E. Slagor
Cultural Resource Protection Manager

AK:SES

Copy: Melissa Sonnleitner, STS Hydropower
Elizabeth Miller, Historic Preservation Consultant

ELIZABETH L. MILLER
4033 TOKAY BOULEVARD
MADISON, WISCONSIN 53711
(608)354-5016
elmillerwi@gmail.com

February 16, 2023

Scott Slagor, Cultural Resource Protection Manager
State of Michigan, Michigan Strategic Fund, State Historic Preservation Office
300 North Washington Square
Lansing, MI 48913

RE: ER23-235
French Landing Hydroelectric Relicensing Project, 12100 Haggerty Road, Van Buren Township and Belleville, Wayne County (FERC)
Revised Proposal for APE for Cultural Resources Studies (historic architectural survey and Phase I archaeological survey)

Thank you for your letter of January 31, 2023. In response I propose that the Area of Potential Effects (APE) for both cultural resource studies (historic architectural survey and Phase I archaeological survey) coincide with the project boundary (map attached).

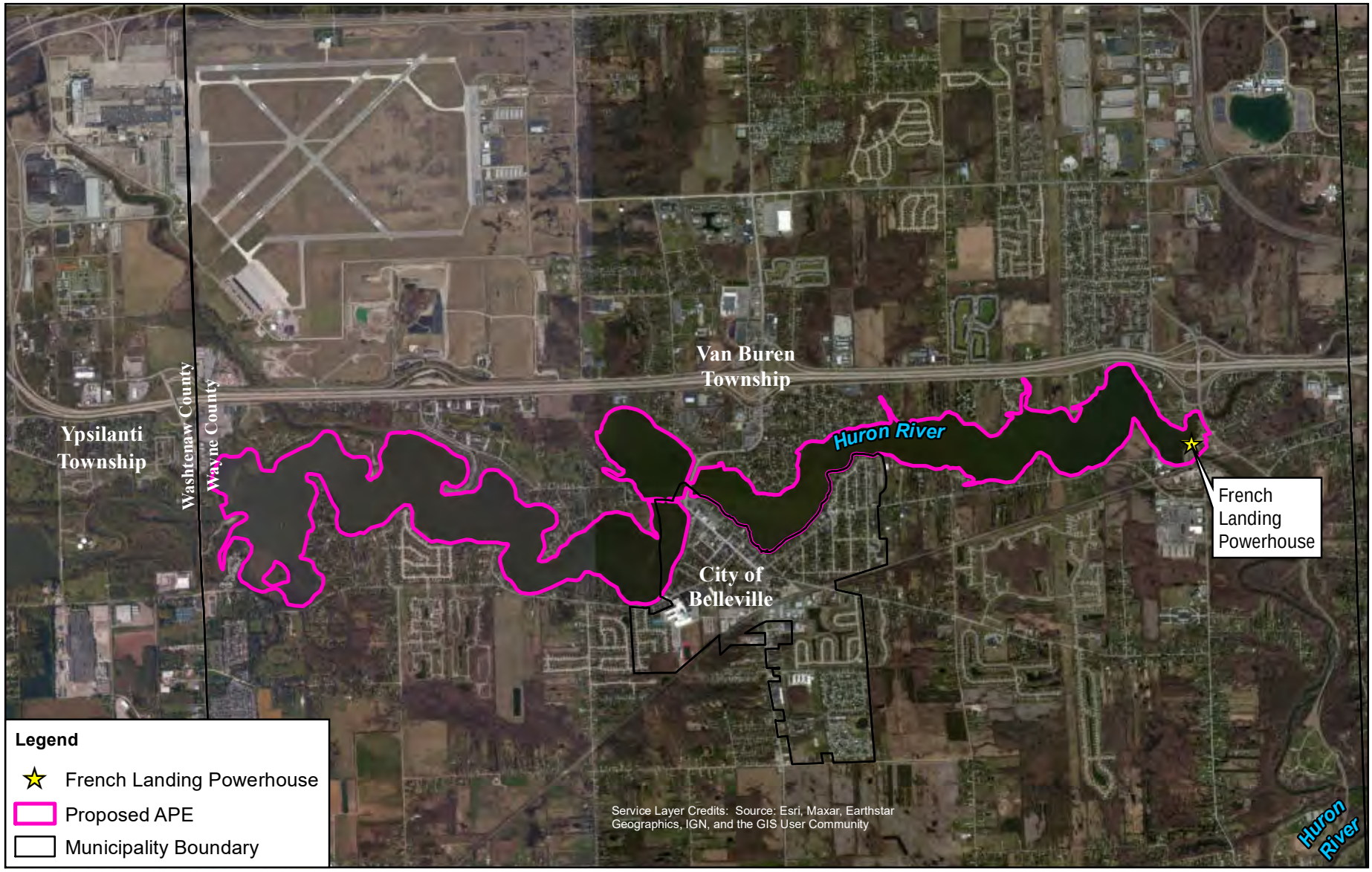
Setting the APE to coincide with the project boundary will encompass any historic architectural and archaeological resources that could potentially be affected by this project (study plans attached). The work program French Landing Hydroelectric Facility project ER23-235 is limited to relicensing. There will be no changes in operation, ground disturbing activities, modifications to existing structures or construction of new structures. Therefore, what properties adjacent to or within the project boundary currently experience as a result of the presence and operation of the French Landing Hydroelectric Facility will not change. The viewshed will also remain the same; there will be no new visual intrusions. Setting the APE to coincide with the project boundary is also consistent with FERC's study requests as delegated to STS Hydropower by letter dated August 29, 2022 (attached, page 14, footnote 5).

On behalf of the project team (listed below and copied on this letter), I respectfully request your concurrence for setting the APE for both the historic architectural survey and the Phase I archaeological survey to coincide with the project boundary.

Sincerely,

Elizabeth L. Miller, Historic Preservation Consultant

cc: Aaron Liberty, Federal Energy Regulatory Commission
Melissa Rondou, STS Hydropower
Allen P. Van Dyke, AVD Archaeological Services
Tim Sullivan, Gomez and Sullivan Engineers, DPC



Revised Study Plan
French Landing Hydroelectric Project
FERC No. P-9951

N

0 2,000 4,000 8,000 Feet

Proposed Area of Potential Effect (APE) for French Landing Project

Path: D:\EagleCreek\GIS\maps\french_landing\RSP\cultural_ape.mxd

6.5 Cultural Resources

FERC requested that the Licensees conduct an historic architectural survey and Phase I archaeological survey (collectively, "Cultural Resources Studies") to determine the potential effects of Project operation on archaeological and historic resources that are included in or eligible for the National Register of Historic Places (National Register or NRHP). FERC noted that the survey and study reports, as well as identification of the Area of Potential Effect (APE), should be developed after consultation with the Michigan State Historic Preservation Officer (SHPO), any federally listed tribes that have an active interest in the Project[4], and other interested parties.

Goals and Objectives

The goal of the Cultural Resources Studies is to determine the potential effects of Project operation on archaeological and historic resources that are included in or eligible for the NRHP. The specific objectives of the Cultural Resources Studies are to:

1. identify the APE, which will include, at a minimum, the lands enclosed by the Project boundary including both in-water and on-shore Project lands and facilities and lands or properties outside the Project boundary where Project operations or other Project-related activities may cause changes in the character or use of historic properties, if any historic properties exist;

2. after consultation with the Michigan SHPO and interested Tribes, conduct a Phase I field inventory within the APE to locate any resources that may be listed in or eligible for listing in the National Register;

3. assess the National Register-eligibility of historic resources, including the Project itself, within the APE;

4. evaluate the potential effects the Project would have on historic properties; and

5. assess the condition of the area where any historic sites are located for shoreline stability and evidence of erosion.

Known Resource Management Goals

As noted by FERC, pursuant to section 106 of the National Historic Preservation Act (Section 106), the licensing of the Project would be a federal undertaking and a license issued by the Commission would permit activities that may "…cause changes in the character or use of historic properties, if any such historic properties exist…" (see 36 CFR part 800.16(d) of the regulations implementing section 106). The Commission must, therefore, comply with Section 106, which requires the head of any federal department or independent agency having authority to license an undertaking to take into account the effect of the undertaking on historic properties. In the case of the Project, assessment of historic properties would be conducted in consultation with the Commission, the Michigan SHPO, any tribes which express an interest in the project, and other interested parties.

[4] Per FERC's study request letter, the tribes which have expressed interest in the Project during initial tribal consultation include the Hannahville Indian Community, the Forest County Potawatomi Community of Wisconsin, Miami Tribe of Oklahoma, and the Pokagon Band of Chippewa Indians.

The overarching goal is to protect historic resources while carrying out the Project. Specific goals are to identify resources that are eligible for listing in the National Register; to evaluate the potential effects of the Project on those historic resources; and to take into account the effects on historic resources in the course of the Project. If historic resources are identified and would be adversely affected by proposed operation or maintenance of the Project or from Project-related activities, adverse effects will be avoided, lessened, or mitigated through the development of an Historic Properties Management Plan (HPMP) in compliance with the "Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines" (*Federal Register*, September 29, 1983, Vol. 48, No. 190, 44716-44740) and FERC's and the Advisory Council on Historic Preservation's "Guidelines for the Development of Historic Properties Management Plans for FERC Hydroelectric Projects," (issued May 20, 2002).

Background and Existing Information

The PAD provides information on archaeological and historic resources identified during previous cultural resources surveys conducted in the 1980's. However, because the existing information is over 35 years old, there may be unknown historical or archeological sites that may be affected by Project operation and maintenance for the Project, or the Project itself may be eligible for the National Register. Due to the potential for cultural resources, a Phase I archaeological and architectural survey of the Project's APE is needed to determine the presence of any archaeological or historic sites within the Project's APE. If any historic properties are identified, the nature and extent of potential effects and measures to avoid, lesson, or mitigate adverse effects, can be properly determined.

The PAD notes that the French Landing Dam and Powerhouse property was designated a Michigan State Historic Site on February 18, 1982. The PAD further states that a cultural resources survey of the Project area was conducted prior to the Environmental Assessment submitted for the previous FERC licensing in February 1987. That survey found no properties identified in the area as listed in or eligible for listing in the National Register of Historic Places. In addition, the Licensees contacted Michigan SHPO for a proposed drawdown of the reservoir in 2019. In April 2019, a proposed temporary variance (drawdown) under article 407 was requested by the Licensees which sought permission to lower the reservoir elevation 5 feet during the month of September 2019 to collect refuse from the exposed bottom of the reservoir. In response to this plan, Michigan SHPO found no historic properties would be affected within the APE in the reservoir area.

Project Nexus

Section 106 requires that federal agencies take into account the effect of proposed undertakings on any district, site, building, structure, or object that is included in or eligible for the National Register. Operation and maintenance of Project facilities could adversely affect historic properties through ground-disturbing activities and cause other indirect adverse effects on historic properties.

A cultural resources survey would provide information on potential cultural resources located within the APE. The subsequent report would provide information on cultural resources that would be potentially eligible for the National Register and any potential effects on historic properties. If there would be an adverse effect on historic properties, an HPMP, would be necessary to avoid, lessen, or mitigate for adverse effects. If an HPMP is needed for the Project, the draft and final HPMP should be filed with the preliminary licensing proposal and the final license application, respectively.

6.5.1 **Historic Architectural Survey**

Methodology

The Phase I reconnaissance-level historic resources survey consists of the following tasks: developing the APE (Task 1); literature review (Task 2); field survey (Task 3); evaluate the potential eligibility of each property surveyed (Task 4); prepare a preliminary report and Section 106 submittal (Task 5); and prepare finding of effect document to provide to consulting parties (Task 6).

Task 1: Developing the APE

The APE for the Project will be developed in consultation with the Michigan SHPO and interested Tribes. The Michigan SHPO and interested Tribes will also be consulted on the methods and techniques of how the survey should be conducted, and anticipated effects (direct and indirect) on historic resources. Once the APE is defined, a request will be made to the Michigan SHPO for concurrence with the APE before field survey is conducted. The APE defined via this task will also be used for the Phase I Archaeological Survey discussed in Section 6.5.2.

Task 2: Literature Review

A literature review will be carried out to identify previously surveyed historic resources in the APE and to establish a historical context for evaluating the eligibility of resources identified in the field survey. As part of this task, copies of information that the Michigan SHPO maintains about any previously surveyed resources will be obtained.

Task 3: Field Survey

The field survey will be reconnaissance level. Properties within the APE that are 50 years old or older, have some potential for historical or architectural significance, and retain integrity to their period of significance will be photographed and recorded.

Task 4: Evaluate Potential Eligibility of Properties Surveyed

As part of the evaluation of the eligibility of properties surveyed, research will be conducted to develop the history and potential significance of each resource surveyed. Sources will include but are not limited to: the Michigan SHPO, the Michigan History Center, the Historical Society of Michigan, the Belleville Area Museum, and online resources such as Newspapers.com and Ancestry.com. For each resource surveyed, the research will be reviewed and integrity assessed as part of evaluating eligibility for the National Register. If the Michigan SHPO requires, a Determination of Eligibility will be prepared for the French Landing Dam and Powerhouse.

Task 5: Prepare Preliminary Report and Section 106 Submittal

The preliminary report will consist of all the components of the Section 106 submittal, in addition to the Determination of Eligibility (if SHPO requires it). These components are listed in Michigan SHPO's, "Instructions for the Application for SHPO Section 106 Consultation Form." All components will be completed in compliance with this document and all guidance documents attached or linked by the Michigan SHPO, as well as any guidance communicated by the Michigan SHPO during the course of the survey. Prior to sending the Section 106 submittal to the Michigan SHPO, the Michigan SHPO will be consulted on what properties are and are not considered eligible for the National Register. Interested Tribes

will be sent a copy of the preliminary survey report for their review. After the Section 106 submittal is sent to the Michigan SHPO, concurrence will be requested on what properties are or are not considered eligible for the National Register, and what, if any, adverse effects may occur on historic properties as a result of Project operation and/or maintenance, or Project-related activities.

Task 6: Prepare Finding of Effect Document

The Finding of Effect document will be prepared in compliance with Michigan SHPO's "Instructions for the Application for SHPO Section 106 Consultation Form," page 10. It will provide: a description of the Project, specifying the federal involvement, and its APE, including photographs, maps, and drawings, as necessary; a description of the steps taken to identify historic properties; a description of the affected historic properties, including information on the characteristics that qualify them for the National Register; a description of the Project's effects on historic properties; an explanation of why the criteria of adverse effect were found applicable or inapplicable, including any conditions or future actions to avoid, minimize, or mitigate adverse effects; and copies or summaries of any views provided by consulting parties and the public. The Finding of Effect document will be sent to all consulting parties.

Consistency with Generally Accepted Scientific Practice

The proposed methods are based on FERC's Study Requests for the French Landing Hydroelectric Project, P-9951 (August 2022). All tasks will be carried out in compliance with Michigan SHPO's, "Instructions for the Application for SHPO Section 106 Consultation Form" and all guidance documents attached or linked by the Michigan SHPO, as well as any guidance communicated by the Michigan SHPO during the course of the survey.

Deliverables and Schedule

Developing the APE, literature review, field survey, and evaluating the potential eligibility of properties surveyed will take place from March 1 through June 1, 2023. Preparing the preliminary report and Section 106 submittal, and preparing the finding of effect document will follow between June 1 and October 1, 2023.

Cost and Level of Effort

The anticipated cost for completion of the historic resource survey is between $15,000 and $20,000.

6.5.2 **Phase I Archaeological Survey**

Methodology

The Phase I archaeological survey consists of the following tasks:

- Task 1: develop the APE
- Task 2: literature and archives research
- Task 3: field survey
- Task 4: assess the NRHP potential NRHP of archaeological sites.
- Task 5: prepare a draft report.

Task 1: Develop the APE

See discussion in Section 6.5.1, Task 1.

Task 2: Literature and Archives Research and Review

Archaeological site files maintained at the Michigan SHPO and previously published and unpublished archaeological reports will be reviewed for updated information on known cultural resources within and/or near the APE. This review will be carried out to identify already reported archaeological sites in the field and gather updated information on them in the field.

Task 3: Field Survey

The field survey will be a Phase I Archaeological Survey, which will incorporate the techniques of surface collection (also called pedestrian survey), shovel testing as deemed necessary - to be determined in consultation with the SHPO archaeologist - and interviews with residents who might be aware of unreported cultural resources. The archaeologist will have obtained known site locations through archives research prior to fieldwork. Archaeologists will also inspect any areas of erosion for artifacts. A GPS tablet and geode with submeter accuracy will be used to record and photograph the location of any archaeological finds. Any cultural material discovered will be processed in the lab (cleaning, identification, cataloging, preliminary analysis, and photography of diagnostic and/or representative artifact types) and prepared for curation at an approved location in Michigan.

Task 4: Assess the NRHP Potential of Archaeological Sites

This assessment of the NRHP potential of any archaeological sites discovered is not the same as a Phase II evaluation of the site for NRHP significance, since the latter is not necessary unless the resource is affected by operation of the Project. This assessment involves getting as much information about what is found at the site as can be accomplished in a traditional Phase I survey (i.e., artifacts, setting, current and probable past land use, potential for buried artifacts or features) and an idea of the size of the artifact spread, while still in the field. If the archaeologist recommends a Phase II evaluation for NRHP significance the recommendation will be considered in consultation with the SHPO and client.

Task 5: Prepare Draft Report

The draft report will be a standard Phase I Archaeological Survey report and will follow the Michigan SHPO *Draft State Archaeological Documentation Standards* (Revised September 2, 2022) or the *MDOT Work Specifications for Archaeological Site Location* reporting guidelines. The report will include a description of the APE, results of the literature and archives search, results of fieldwork, analysis of artifacts and sites discovered, interpretation of the sites in a larger cultural context, and a recommendation on how to treat any archaeological sites found by the survey.

Consistency with Generally Accepted Scientific Practice

The proposed method is based on FERC's Study Requests for the French Landing Hydroelectric Project, P-9951 (August 2022). All tasks will be carried out in compliance with Michigan SHPO's, *Draft State Archaeological Documentation Standards* (Revised September 2, 2022) and all guidance documents attached or linked by the Michigan SHPO, as well as any guidance communicated by the Michigan SHPO during the survey.

Deliverables and Schedule

Developing the APE, literature review, and field survey will take place from March 1 through June 1, 2023. Preparing the preliminary report will follow between June 1 and October 1, 2023.

Cost and Level of Effort

The anticipated cost for completion of the archaeological survey as defined above, prior to consultation with FERC and SHPO, is between $15,000 and $30,000.

Outlook

RE: ER23-235 French Landing Hydro - Area of Potential Effect

From Slagor, Scott (LEO) <SlagorS2@michigan.gov>
Date Mon 5/8/2023 11:11 AM
To Kelly Jo Blaubach <kjblaub@uwm.edu>
Cc Melissa Rondou <melissa.rondou@eaglecreekre.com>; AVanDyke@trccompanies.com <AVanDyke@trccompanies.com>; Dan Gonzalez <dgonzalez@gomezandsullivan.com>; Richard Wynn Edwards IV <wedwards@uwm.edu>

Hi Kelly,

Yes your assessment is correct. In the past, relicensing projects have surveyed all properties along the impoundment. Often relicensing results in a cultural resources management plan. If there is concerns that this is too much for a relicensing, I'm happy to discuss further with the 106 team and project team.

Scott Slagor (he/him)
Cultural Resource Protection Manager
State Historic Preservation Office
300 N. Washington Square
Lansing, MI 48913
Office: 517.335.9840 Direct: 517.285.5120
michigan.gov/shpo

Get the latest news with the SHPO and MEDC Community Development newsletters!

From: Kelly Jo Blaubach <kjblaub@uwm.edu>
Sent: Friday, May 5, 2023 9:03 AM
To: Slagor, Scott (LEO) <SlagorS2@michigan.gov>
Cc: Melissa Rondou <melissa.rondou@eaglecreekre.com>; AVanDyke@trccompanies.com; dgonzalez@gomezandsullivan.com; Richard Wynn Edwards IV <wedwards@uwm.edu>
Subject: ER23-235 French Landing Hydro - Area of Potential Effect

Hello,

UWM-Cultural Resource Management has been contracted to complete the architecture/history survey for the FERC relicensing of the French Landing Hydroelectric Project in Wayne County, Michigan. We are requesting some clarification regarding the appropriate APE for our survey work. Previous communications on this issue between SHPO and the former A/H consultant are attached (letters dated January 31, February 16, and April 7, 2023). Following the consultant's request for a revised APE, SHPO specifies in the first paragraph of the April 7 letter that the "shoreline" is included in the APE. UWM-CRM understands that this APE will include both the determined-eligible Belleville Road Bridge and the French Landing Dam and Powerhouse. However, can you clarify whether

“shoreline” includes those structures such as boathouses/docks that may extend into the waterway, and – by extension – the residential properties to which those boathouses/docks belong?

As the previous consultant proposed in the February 16 letter, the project at French Landing is limited to relicensing with no changes to operations, ground disturbing activities, or structural modifications. It seems there would be no potential for properties along the shoreline to be affected by the relicensing project, and therefore no need to include those types of resources within the area of potential effect.

If you think it’s necessary to set up a meeting to clarify the APE for this project, UWM-CRM and the project team would be happy to discuss. Following clarification, UWM-CRM will be able to provide refined mapping that will more clearly identify the APE boundary, as requested by the SHPO in the April 7 letter.

Thank you,
Kelly Blaubach

UWM-CRM 2023-0383

Kelly Blaubach, M.A.

Architectural Historian, Cultural Resource Management

Archaeological Research Laboratory Center

University of Wisconsin-Milwaukee

PO Box 413

Milwaukee, WI 53201
Office (414) 229-3078 | Direct (414) 251-7361

Outlook

Fw: ER23-235 French Landing Hydro - Area of Potential Effect

From Kelly Jo Blaubach <kjblaub@uwm.edu>
Date Mon 11/13/2023 1:41 PM
To Dan Gonzalez <dgonzalez@gomezandsullivan.com>; Melissa Rondou <melissa.rondou@eaglecreekre.com>; Tim Sullivan <timsullivan@gomezandsullivan.com>; Van Dyke, Allen <AVanDyke@trccompanies.com>; Richard Wynn Edwards IV <wedwards@uwm.edu>

Please see below: UWM-CRM's consultation call with the MI SHPO in July of 2023 regarding the project APE.

UWM-CRM 20XX-XXXX

Kelly Blaubach, M.A.
Architectural Historian, Cultural Resource Management
Archaeological Research Laboratory Center
University of Wisconsin-Milwaukee
PO Box 413
Milwaukee, WI 53201
Office (414) 229-3078 | Direct (414) 251-7361

From: Kolokithas, Kathrine (LEO) <KolokithasK1@michigan.gov>
Sent: Wednesday, August 2, 2023 9:26 AM
To: Kelly Jo Blaubach <kjblaub@uwm.edu>; Slagor, Scott (LEO) <SlagorS2@michigan.gov>
Cc: Richard Wynn Edwards IV <wedwards@uwm.edu>
Subject: RE: ER23-235 French Landing Hydro - Area of Potential Effect

Good morning,
It was nice to chat with you both as well. That all sounds good, please do not hesitate to reach out if you have any questions.

Thank you,

Katie Kolokithas
Survey Coordinator
State Historic Preservation Office
300 N. Washington Square
Lansing, MI 48913
Office: 517.335.9840 Cell: 517.285.9248
michigan.gov/shpo

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From: Kelly Jo Blaubach <kjblaub@uwm.edu>
Sent: Thursday, July 27, 2023 4:58 PM
To: Slagor, Scott (LEO) <SlagorS2@michigan.gov>
Cc: Richard Wynn Edwards IV <wedwards@uwm.edu>; Kolokithas, Kathrine (LEO) <KolokithasK1@michigan.gov>
Subject: Re: ER23-235 French Landing Hydro - Area of Potential Effect

Hi Katie and Scott,

Thanks again for meeting with us today to discuss the French Hydro Relicensing APE and associated survey requirements. As discussed, the APE for the architecture/history survey will be identified as the lands enclosed by the project boundary and any resources therein that are over 40 years old and possess a sufficient level of integrity. This will involve a complete survey of the French Landing Hydro Facility, documenting the facility as a complex or district containing multiple resources. UWM-CRM will be sending a more detailed APE map to SHPO in the near future.

Thank you and let me know if I can provide any additional information.

Kelly Blaubach

UWM-CRM 2023-0383

Kelly Blaubach, M.A.
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Archaeological Research Laboratory Center
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From: Slagor, Scott (LEO) <SlagorS2@michigan.gov>
Sent: Tuesday, July 25, 2023 3:41 PM
To: Kelly Jo Blaubach <kjblaub@uwm.edu>
Cc: Richard Wynn Edwards IV <wedwards@uwm.edu>; Kolokithas, Kathrine (LEO) <KolokithasK1@michigan.gov>
Subject: RE: ER23-235 French Landing Hydro - Area of Potential Effect

I'm looping in our above-ground Survey Coordinator to this conversation, Katie Kolokithas.

We do not have availability tomorrow morning, but we do have time on 7/27 from 11-12, and 1-3 EST. Do any times in those windows work for you?

Scott Slagor (he/him)
Cultural Resource Protection Manager
State Historic Preservation Office
300 N. Washington Square
Lansing, MI 48913
Office: 517.335.9840 Direct: 517.285.5120
michigan.gov/shpo

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From: Kelly Jo Blaubach <kjblaub@uwm.edu>
Sent: Tuesday, July 25, 2023 4:37 PM
To: Slagor, Scott (LEO) <SlagorS2@michigan.gov>
Cc: Richard Wynn Edwards IV <wedwards@uwm.edu>
Subject: Re: ER23-235 French Landing Hydro - Area of Potential Effect

Above ground only, please

UWM-CRM 20XX-XXXX

Kelly Blaubach, M.A.
Architectural Historian, Cultural Resource Management
Archaeological Research Laboratory Center
University of Wisconsin-Milwaukee
PO Box 413
Milwaukee, WI 53201
Office (414) 229-3078 | Direct (414) 251-7361

From: Slagor, Scott (LEO) <SlagorS2@michigan.gov>
Sent: Tuesday, July 25, 2023 3:36 PM
To: Kelly Jo Blaubach <kjblaub@uwm.edu>
Cc: Richard Wynn Edwards IV <wedwards@uwm.edu>
Subject: RE: ER23-235 French Landing Hydro - Area of Potential Effect

Hi Kelly Jo,

Are you wanting to discuss above-ground survey or below ground survey, or both?

Scott Slagor (he/him)
Cultural Resource Protection Manager
State Historic Preservation Office
300 N. Washington Square
Lansing, MI 48913
Office: 517.335.9840 Direct: 517.285.5120
michigan.gov/shpo

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From: Kelly Jo Blaubach <kjblaub@uwm.edu>
Sent: Tuesday, July 25, 2023 2:49 PM
To: Slagor, Scott (LEO) <SlagorS2@michigan.gov>
Cc: Richard Wynn Edwards IV <wedwards@uwm.edu>
Subject: Re: ER23-235 French Landing Hydro - Area of Potential Effect

CAUTION: This is an External email. Please send suspicious emails to abuse@michigan.gov

Hi Scott,

Following up on our communication a couple months ago, Rick and I at UWM-CRM would like to set up a phone call to discuss the APE and survey requirements with you. Do you have any availability tomorrow morning (Wednesday AM, 7/26) or anytime on Thursday (7/27)? Next week would also work just fine, I understand this is short notice.

Thank you,

Kelly

UWM-CRM 2023-0383

Kelly Blaubach, M.A.
Architectural Historian, Cultural Resource Management
Archaeological Research Laboratory Center
University of Wisconsin-Milwaukee
PO Box 413
Milwaukee, WI 53201
Office (414) 229-3078 | Direct (414) 251-7361

From: Slagor, Scott (LEO) <SlagorS2@michigan.gov>
Sent: Monday, May 8, 2023 10:11 AM
To: Kelly Jo Blaubach <kjblaub@uwm.edu>
Cc: Melissa Rondou <melissa.rondou@eaglecreekre.com>; AVanDyke@trccompanies.com <AVanDyke@trccompanies.com>; dgonzalez@gomezandsullivan.com <dgonzalez@gomezandsullivan.com>; Richard Wynn Edwards IV <wedwards@uwm.edu>
Subject: RE: ER23-235 French Landing Hydro - Area of Potential Effect

Hi Kelly,

Yes your assessment is correct. In the past, relicensing projects have surveyed all properties along the impoundment. Often relicensing results in a cultural resources management plan. If there is concerns that this is too much for a relicensing, I'm happy to discuss further with the 106 team and project team.

Scott Slagor (he/him)
Cultural Resource Protection Manager
State Historic Preservation Office
300 N. Washington Square
Lansing, MI 48913
Office: 517.335.9840 Direct: 517.285.5120
michigan.gov/shpo

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From: Kelly Jo Blaubach <kjblaub@uwm.edu>
Sent: Friday, May 5, 2023 9:03 AM
To: Slagor, Scott (LEO) <SlagorS2@michigan.gov>
Cc: Melissa Rondou <melissa.rondou@eaglecreekre.com>; AVanDyke@trccompanies.com;

dgonzalez@gomezandsullivan.com; Richard Wynn Edwards IV <wedwards@uwm.edu>
Subject: ER23-235 French Landing Hydro - Area of Potential Effect

Hello,
UWM-Cultural Resource Management has been contracted to complete the architecture/history survey for the FERC relicensing of the French Landing Hydroelectric Project in Wayne County, Michigan. We are requesting some clarification regarding the appropriate APE for our survey work. Previous communications on this issue between SHPO and the former A/H consultant are attached (letters dated January 31, February 16, and April 7, 2023). Following the consultant's request for a revised APE, SHPO specifies in the first paragraph of the April 7 letter that the "shoreline" is included in the APE. UWM-CRM understands that this APE will include both the determined-eligible Belleville Road Bridge and the French Landing Dam and Powerhouse. However, can you clarify whether "shoreline" includes those structures such as boathouses/docks that may extend into the waterway, and – by extension – the residential properties to which those boathouses/docks belong?
As the previous consultant proposed in the February 16 letter, the project at French Landing is limited to relicensing with no changes to operations, ground disturbing activities, or structural modifications. It seems there would be no potential for properties along the shoreline to be affected by the relicensing project, and therefore no need to include those types of resources within the area of potential effect.
If you think it's necessary to set up a meeting to clarify the APE for this project, UWM-CRM and the project team would be happy to discuss. Following clarification, UWM-CRM will be able to provide refined mapping that will more clearly identify the APE boundary, as requested by the SHPO in the April 7 letter.

Thank you,
Kelly Blaubach

UWM-CRM 2023-0383

Kelly Blaubach, M.A.
Architectural Historian, Cultural Resource Management
Archaeological Research Laboratory Center
University of Wisconsin-Milwaukee
PO Box 413
Milwaukee, WI 53201
Office (414) 229-3078 | Direct (414) 251-7361

Outlook

EXTERNAL EMAIL -Re: French Landing Cultural Studies SHPO Submittal

From Kelly Jo Blaubach <kjblaub@uwm.edu>
Date Fri 3/8/2024 5:20 PM
To Melissa Rondou <melissa.rondou@eaglecreekre.com>; Richard Wynn Edwards IV <wedwards@uwm.edu>
Cc Tim Sullivan <timsullivan@gomezandsullivan.com>; Dan Gonzalez <dgonzalez@gomezandsullivan.com>

Hello all,

The 106 application has been submitted to SHPO.

Have a good weekend,
Kelly Blaubach

UWM-CRM 2023-0383

Kelly Blaubach, M.A.
Architectural Historian, Cultural Resource Management
Archaeological Research Laboratory Center
University of Wisconsin-Milwaukee
PO Box 413
Milwaukee, WI 53201
Office (414) 229-3078 | Direct (414) 251-7361

From: Melissa Rondou <melissa.rondou@eaglecreekre.com>
Sent: Friday, March 8, 2024 3:26 PM
To: Kelly Jo Blaubach <kjblaub@uwm.edu>; Richard Wynn Edwards IV <wedwards@uwm.edu>
Cc: Tim Sullivan <timsullivan@gomezandsullivan.com>; Dan Gonzalez <dgonzalez@gomezandsullivan.com>
Subject: Re: French Landing Cultural Studies SHPO Submittal

Kelly and Rick,
Will you please acknowledge receipt of the email Dan sent along with the attachment a few minutes ago and also send us a follow up confirmation that the report was submitted to SHPO?
Thank you,

Melissa Rondou | Licensing and Compliance Manager
Affiliates of Eagle Creek Renewable Energy
Desk: 920-293-4628 ext. 347
Mobile: 920-279-4804
Email: melissa.rondou@eaglecreekre.com

From: Dan Gonzalez <dgonzalez@gomezandsullivan.com>
Sent: Friday, March 8, 2024 3:11 PM
To: Kelly Jo Blaubach <kjblaub@uwm.edu>
Cc: Richard Wynn Edwards IV <wedwards@uwm.edu>; Tim Sullivan <timsullivan@gomezandsullivan.com>; Melissa Rondou <melissa.rondou@eaglecreekre.com>
Subject: French Landing Cultural Studies SHPO Submittal

Good Afternoon,

We have filed the historic structures and archaeology reports with FERC, thank you for all your efforts with the studies and working with us to meet the ILP deadline. I have attached a version for you to submit with SHPO as we cannot submit to them. Let me know if there are any changes needed to the attached Section 106 application and attachments.

Thanks,
Dan

Dan Gonzalez
Upcoming Out of Office 3/28 – 4/4
GIS Specialist | Licensing Specialist
Gomez and Sullivan Engineers, DPC
1961 Wehrle Dr, Ste 12 | Williamsville, NY 14221
O: (716) 250-4960 | D: (716) 402-6797 | C: (716) 258-1068
dgonzalez@gomezandsullivan.com

Outlook

EXTERNAL EMAIL -Re: ER23-235 French Landing Hydro Relicensing

From Melissa Rondou <melissa.rondou@eaglecreekre.com>
Date Thu 9/19/2024 11:38 AM
To Richard Wynn Edwards IV <wedwards@uwm.edu>; Dan Gonzalez <dgonzalez@gomezandsullivan.com>; Van Dyke, Allen <AVanDyke@trccompanies.com>

Thank you for forwarding the email from Scott Slagor. I am unaware if FERC responded.
I am copying Dan Gonzalez and Al VanDyke on this reply to ask if they know.

Melissa Rondou | Senior Licensing and Compliance Manager
Affiliates of Eagle Creek Renewable Energy
Desk: 920-293-4628 ext. 347
Mobile: 920-279-4804
Email: melissa.rondou@eaglecreekre.com

From: Richard Wynn Edwards IV <wedwards@uwm.edu>
Sent: Thursday, August 29, 2024 11:32 AM
To: Melissa Rondou <melissa.rondou@eaglecreekre.com>
Subject: FW: ER23-235 French Landing Hydro Relicensing

Hi Melissa,

I just realized that you weren't cc'd on this email from two weeks ago – do you know if FERC responded and if Section 106 has been approved?

Thanks,
Rick

Richard W. Edwards IV, Ph.D., RPA
Principal Investigator | Research Program Manager, Cultural Resource Management
Archaeological Research Laboratory Center
University of Wisconsin-Milwaukee
PO Box 413
Milwaukee, WI 53201
Direct (414) 251-6138 | Mobile (414) 625-0884

From: Slagor, Scott (LEO) <SlagorS2@michigan.gov>
Sent: Tuesday, August 13, 2024 8:30 AM

To: aaron.liberty@ferc.gov; Richard Wynn Edwards IV <wedwards@uwm.edu>; alandyke@trccompanies.com
Subject: ER23-235 French Landing Hydro Relicensing

Hi all,

I owe you an apology for our delayed response with this project. The Michigan SHPO is still very paper reliant- all digital files are printed and passed around for review. We received the Sec. 106 application for this project on 3/8/24. It got buried on a desk and only recently found. Before I spend time reviewing the materials, Would FERC still like our evaluation of the project? Or has the agency moved on without us?

Thank you,

Scott Slagor (he/him)
Cultural Resource Protection Manager
State Historic Preservation Office
300 N. Washington Square
Lansing, MI 48913
Office: 517.335.9840 Direct: 517.285.5120
michigan.gov/shpo

Get the latest news with the SHPO and MEDC Community Development newsletters!

GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
MICHIGAN STRATEGIC FUND
STATE HISTORIC PRESERVATION OFFICE

QUENTIN L. MESSER, JR.
PRESIDENT

April 7, 2023

AARON LIBERTY
FEDERAL ENERGY REGULATORY COMMISSION
888 FIRST STREET NE
WASHINGTON DC 20426

RE: ER23-235 French Landing Hydroelectric Relicensing Project, 12100 Haggerty Road, VanBuren Township, and Belleville, Wayne County (FERC)

Dear Aaron Liberty:

The Michigan State Historic Preservation Office (SHPO) have received your request for review of the revised Area of Potential Effects (APE) for the above-cited undertaking at the location noted above. SHPO understands the APE to include the shoreline and also the submerged impoundment area. This APE appears to be appropriate, however, refined mapping, which details the APE boundary in relationship to the shoreline, is needed for clarity.

According to SHPO records, several previously recorded archaeological sites correspond with the APE. Based on the archaeological sensitivity of the area, we agree with the assessment that a Phase I archaeological survey is needed for the terrestrial portion APE. Prior to the initiation of archaeological fieldwork, SHPO archaeologists request to review the archaeological survey plan. The Phase I archaeological survey must be conducted by a professional archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards (36 CFR Part 61). An archaeological report must be submitted to SHPO following the completion of the survey. Please note, SHPO does not accept the results of archaeological research that was conducted when the ground was frozen and/or snow covered.

At this time, it is the opinion of SHPO archaeologists that an underwater archaeological survey is not necessary for the submerged portion of the APE. However, in the event of future pool-level fluctuations, we recommend that consideration be given to an underwater cultural resources survey.

Regarding survey of architectural resources. The methodology notes "properties that are within the APE that are 50 years old or older, have some potential for historical or architectural significance, and retain integrity to their period of significance will be photographed and recorded." Generally, the historic significance of a property must be known in order to evaluate its integrity, therefore, one cannot determine the integrity of a resource solely by a field visit. Properties should be surveyed and evaluated based on age and historic context. Because the licensing period is so long, we recommend surveying properties 40 years old or older, rather than 50, so the study will have longevity and be useful for the agency and SHPO in future consultations. Please note that SHPO Staff determined the French Landing Dam and Powerhouse eligible in 1982, and the Bellville Road Bridge over the Huron River eligible in 1993. With a determinations now decades old it is necessary to provide updated photos, survey documents, and analysis for these resources. If you would like to discuss details of the architectural

survey in-depth, SHPO staff would welcome a meeting.

Subsequent project information can be submitted through online through our Additional Information Portal.

Please note that the Section 106 review process cannot proceed until we are able to consider the information requested above. This letter does not clear the project. If you have any questions, please contact Scott Slagor, Cultural Resource Protection Manager, at 517-285-5120 or by email at slagors2@michigan.gov or Amy Krull, Federal Projects Archaeologist at 517-285-4211 or by email at krulla@michigan.gov. **Please reference our project number in all communication with this office regarding this undertaking.** Thank you for your cooperation.

Sincerely,

Scott E. Slagor
Cultural Resource Protection Manager,
for Martha MacFarlane-Faes
Deputy State Historic Preservation Officer

AK:SES

Copy: Melissa Sonnleitner, STS Hydropower
Elizabeth Miller, Historic Preservation Consultant
Allen P. Van Dyke, AVD Archaeological Services
Tim Sullivan, Gomez and Sullivan Engineers, DPC

EXHIBIT F
GENERAL DESIGN DRAWINGS AND SUPPORTING DESIGN REPORT

April 2025

FRENCH LANDING HYDROELECTRIC PROJECT
(FERC NO. 9951)

APPLICATION FOR NEW LICENSE
FOR MAJOR PROJECT LESS THAN 10-MW – EXISTING DAM

EXHIBIT F
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FRENCH LANDING HYDROELECTRIC PROJECT
(FERC NO. 9951)

APPLICATION FOR NEW LICENSE
FOR MAJOR PROJECT LESS THAN 10-MW – EXISTING DAM

EXHIBIT F
GENERAL DESIGN DRAWINGS AND SUPPORTING DESIGN REPORT

1 EXHIBIT F DRAWINGS

The General Design Drawings show overall plan views, elevation, and sections of the principal project works in sufficient detail to provide a full understanding of the French Landing Hydroelectric Project (Project). In accordance with 18 C.F.R. Part 388, the Licensees are submitting the General Design Drawings for the Project as Critical Energy Infrastructure Information (CEII).

Therefore, in conjunction with filing this License Application, the Exhibit F General Design Drawings listed below are being filed with the Federal Energy Regulatory Commission (FERC) in Volume 2 of the application under separate cover.

Sheet No.	Title
Sheet 1	Project Plan and Flood Control Gate Sections
Sheet 2	Enlarged Plan
Sheet 3	Project Sections

Exhibit F-1: Project Plan and Flood Control Gate Sections

This figure constitutes Critical Energy Infrastructure Information (CEII) in accordance with 18 C.F.R. § 388.113(c) and has been removed from the public version of this License Application.

This material is contained in Volume 2 – CEII, the non-public version filed with the Commission.

Procedures for obtaining access to CEII may be found at 18 C.F.R. § 388.11.

Exhibit F-2: Enlarged Plan

This figure constitutes Critical Energy Infrastructure Information (CEII) in accordance with 18 C.F.R. § 388.113(c) and has been removed from the public version of this License Application.

This material is contained in Volume 2 – CEII, the non-public version filed with the Commission.

Procedures for obtaining access to CEII may be found at 18 C.F.R. § 388.11.

Exhibit F-3: Project Sections

This figure constitutes Critical Energy Infrastructure Information (CEII) in accordance with 18 C.F.R. § 388.113(c) and has been removed from the public version of this License Application.

This material is contained in Volume 2 – CEII, the non-public version filed with the Commission.

Procedures for obtaining access to CEII may be found at 18 C.F.R. § 388.11.

2 SUPPORTING DESIGN REPORT

18 C.F.R. § 4.41(g)(3) requires that an applicant for a new license file with FERC a Supporting Design Report (SDR) when the applicant files a license application. The purpose of the SDR is to demonstrate that the existing structures are safe and adequate to fulfill their stated functions. An SDR that fulfills the requirements and intent of 18 C.F.R. § 4.41(g)(3), has been developed for the Project and is included in Appendix F-1.

APPENDIX F-1: FRENCH LANDING HYDROELECTRIC PROJECT SUPPORTING DESIGN REPORT

This appendix constitutes Critical Energy Infrastructure Information (CEII) in accordance with 18 C.F.R. § 388.113(c) and has been removed from the public version of this License Application.

This material is contained in Volume 2 – CEII, the non-public version filed with the Commission.

Procedures for obtaining access to CEII may be found at 18 C.F.R. § 388.11.

EXHIBIT G
PROJECT MAPS

April 2025

FRENCH LANDING HYDROELECTRIC PROJECT
(FERC NO. 9951)

APPLICATION FOR NEW LICENSE
FOR MAJOR PROJECT LESS THAN 10-MW – EXISTING DAM

EXHIBIT G
PROJECT MAPS

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APPLICATION FOR NEW LICENSE
FOR MAJOR PROJECT LESS THAN 10-MW – EXISTING DAM

EXHIBIT G
PROJECT MAPS

1 PROJECT MAPS

The following map defines the location of the French Landing Hydroelectric Project (Project), principal features, and Project boundary:

Sheet No.	Title
G-1	Project Boundary Detail Map

The Project boundary map has been prepared in accordance with the requirements of 18 Code of Federal Regulations (CFR) §§ 4.39 and 4.41(h) and applicable Federal Energy Regulatory Commission (FERC) guidance.

The current Project boundary encompasses approximately 1,327 acres including Belleville Lake, French Landing Dam, the powerhouse, transmission facilities, Huron River in the tailrace area, and a portion of French Landing Park. The existing Project boundary follows the contour level of 655.0 feet (National Geodetic Vertical Datum of 1929 (NGVD29))[1], except near the dam, powerhouse, tailrace, and recreation area, where it instead follows metes and bounds.

As part of this license application, the Licensees are proposing to modify the Project boundary in several locations. These modifications include expanding the boundary to include the portage trail, the northern portion of French Landing Park, and all Project facilities including the entirety of the right embankment, stop log structure, and entirety of the impoundment up to elevation (El.) 652.0. The Licensees are also proposing to remove land not needed for Project operation, including land adjacent to French Landing Park and land surrounding the impoundment above elevation 652.0 feet. The proposed modifications are shown in Figure G.1-1 and described in detail below.

The current Project boundary does not include the portion of the portage trail leading to the put-in location. The Licensees propose to expand the Project boundary to include the entirety of the French Landing portage trail. The current Project boundary excludes an approximately 255-foot portion of the portage trail downstream of the outlet channel to the portage put-in. The proposed expansion will add approximately 0.2 acres of upland land to the Project boundary. This land is

[1] All elevations herein refer to the National Geodetic Vertical Datum of 1929 (NGVD29).

necessary to fully enclose the portage trail, which is a Project recreation site. The Licensees have pre-existing ownership rights in fee to the proposed expansion.

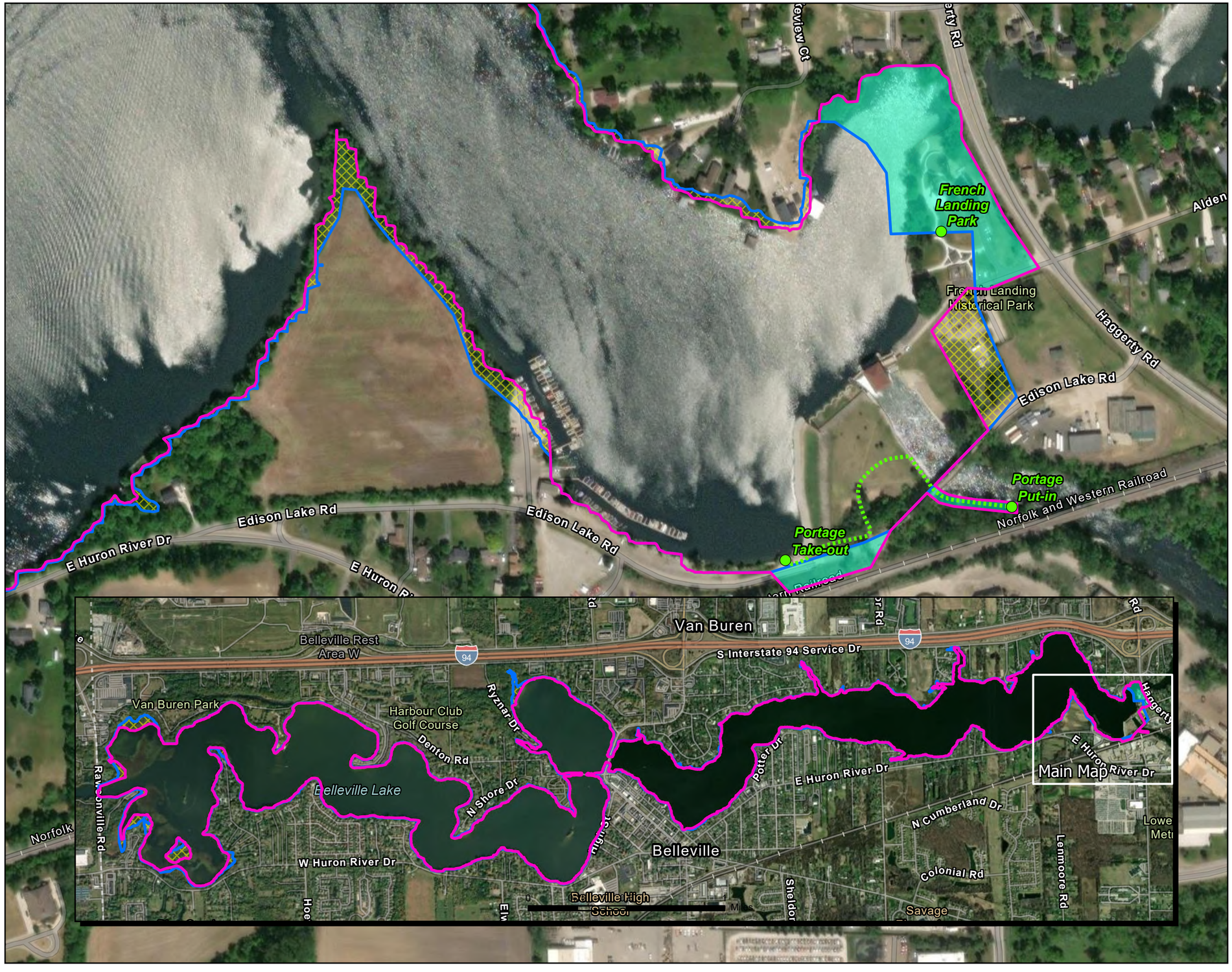
A large portion of French Landing Park, including the parking area, picnic pavilion, and kayak launch, are excluded from the current Project boundary. To fully enclose all Project recreation facilities, the Licensees are proposing to add 2.2 acres to the Project boundary. This land, which includes the amenities listed above, is owned in fee by the co-licensee Charter Township of Van Buren (Van Buren).

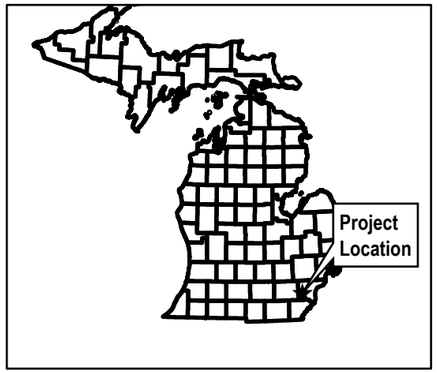
The current Project boundary also excludes Project facilities, including the stop log structure, a portion of the right embankment, and a portion of the impoundment. The portion of land to be added for the right embankment and stop log structure is located at the end of Edison Lake Road, where the stop logs provide temporary freeboard protection of the road crossing during extreme flood conditions. This small area adds 0.5 acres of land to the Project boundary. The portion of the impoundment to be added to the Project boundary is located adjacent to the north section of French Landing Park. Following El. 652.0 in this area will add 2.1 acres of watered land to the Project boundary. These areas are needed for continued Project operation.

The Licensees are proposing to remove land adjacent to French Landing Park, east of the tailwater area. This land is not owned by the Licensees and contains a substation owned by DTE Energy. The land is not needed for Project operation and removes 1.2 acres from the Project boundary.

As noted above, the current Project boundary follows elevation 655.0 feet, which is the boundary for Van Buren ownership in Belleville Lake; however, the crest elevation of the arch spillway is El. 652.0 feet. As such, any land above this elevation is not needed for Project operation. Removing the extra upland areas along the Belleville Lake shoreline removes 50.9 acres from the Project boundary.

The total acreage of the proposed Project boundary, after all modifications, is 1,280 acres. All land within the proposed Project boundary is owned by Van Buren Charter Township, the co-licensee.





License Application
French Landing Hydroelectric Project
FERC No. 9951

Figure G.1-1:
Proposed Project Boundary Modifications

Legend

- Project Recreation Site
- Project Portage Trail
- Proposed Project Boundary
- Current Project Boundary

Project Boundary Modifications

- Proposed to be Added
- Proposed to be Removed

Service Layer Credits: World Imagery: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
Hybrid Reference Layer: Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

N

0 150 300 600 Feet

Path: D:\EagleCreek\GIS\maps\french_landing\FL_FLA\exhibit_g_fla\exhibit_g_fla.aprx

Index Map

Legend

- Project Boundary
- 12 — Project Boundary Point (see Exhibit G text for metes and bounds description)
- Reference Point
- Project Recreation Site
- Project Trail
- Non-Project Recreation Site
- Project Recreation Area
- Buried Transmission Line
- Waterbody
- River/Creek
- Municipality Boundary
- County Boundary

The licensee has acquired rights in fee to all lands necessary for construction, maintenance, and operation of the project.

Coordinate System:
NAD83 State Plane
Michigan South Zone (feet)
Horizontal Datum:
NAD 1983
Vertical Datum:
NGVD 1929

7° 16' W
+/- 0° 23'
MN TN
Declination changing by 0° 1' E per year

I HEREBY STATE THAT THE PROJECT BOUNDARY DELINEATION FOR THE FRENCH LANDING HYDROELECTRIC PROJECT (FERC NO. P-9951) AS SHOWN ON THIS EXHIBIT "G" DRAWING IS DEVELOPED WITHIN REASONABLE ACCURACIES AS REQUIRED IN 18CFR4.41 TO THE GEOGRAPHIC LOCATION BASED ON A GRAPHICAL POSITIONING IN REFERENCE TO USGS QUADRANGLE MAPPING WITHIN +/-40 FEET. THE FRENCH LANDING HYDROELECTRIC PROJECT DOCUMENTED PROJECT BOUNDARY LINE WAS ADJUSTED AND OR ROTATED TO BEST FIT WITH THE USGS QUADRANGLE MAP FEATURES GRAPHICALLY AND WAS NOT FIELD SURVEYED.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
JEFFREY M. JOPCHAK
LAND SURVEYOR
No. SU075366
42982

04/28/25

EXHIBIT G - PROJECT BOUNDARY
FRENCH LANDING HYDROELECTRIC PROJECT
FERC PROJECT NO. P-9951

STS Hydropower, LLC
7315 Wisconsin Avenue, Suite 1100W
Bethesda, Maryland 20814

0 300 600 1,200 1,800 2,400 Feet

EXHIBIT G-1 — 1 inch equals 600 feet — 1:7,200

Path: D:\EagleCreek\GIS\maps\french_landing\FL_FLA\exhibit_g_fla\exhibit_g_fla.aprx

Project Boundary Description

Line ID	NAD83 State Plane Michigan South		Direction	Distance (ft)	Notes
	Northing (ft)	Easting (ft)			
1	261074.6	13373835.6	S42°47'15"E	82.58	Point of Beginning
2	261014.0	13373891.7	N73°10'19"E	262.17	
3	261089.9	13374142.6	N28°10'38"E	128.35	
4	261203.0	13374203.2	N44°12'18"E	159.41	
5	261317.3	13374314.4	S50°59'34"E	46.99	
6	261287.7	13374350.9	S75°41'59"E	45.99	
7	261276.4	13374395.4	S84°03'31"E	194.16	
8	261256.3	13374588.6	N0°19'08"W	28.24	
9	261284.5	13374588.4	N77°18'12"W	257.23	Follows Shoreline in between points 8 and 9.
10	261341.0	13374337.5	N44°12'19"E	234.66	
11	261509.3	13374501.1	N29°43'50"W	349.31	
12	261812.6	13374327.8	N40°11'45"E	170.47	
13	261942.8	13374437.9	S86°59'39"E	62.99	
14	261939.5	13374500.8	N67°05'18"E	168.27	
15	262005.0	13374655.8	N33°57'52"W	193.48	
16	262165.5	13374547.7	N27°00'50"W	106.6	
17	262260.4	13374499.3	N29°23'53"W	158.55	
18	262398.6	13374421.4	S23°52'09"W	1,447.82	Follows Elevation 652.0' to point of beginning

EXHIBIT H
DESCRIPTION OF PROJECT MANAGEMENT AND NEED FOR PROJECT POWER

April 2025

FRENCH LANDING HYDROELECTRIC PROJECT (FERC NO. 9951)

APPLICATION FOR NEW LICENSE FOR MAJOR PROJECT LESS THAN 10-MW – EXISTING DAM

EXHIBIT H DESCRIPTION OF PROJECT MANAGEMENT AND NEED FOR PROJECT POWER

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LIST OF ABBREVIATIONS AND DEFINITIONS

CEII	Critical Energy Infrastructure Information
cfs	cubic feet per second
Commission	Federal Energy Regulatory Commission
DTE	Detroit Edison
EAP	Emergency Action Plan
FERC	Federal Energy Regulatory Commission
FPA	Federal Power Act
Licensees	STS Hydropower, LLC and Van Buren Charter Township
MISO	Midcontinent Independent System Operator
Project	French Landing Project
STS	STS Hydropower, LLC

FRENCH LANDING HYDROELECTRIC PROJECT (FERC NO. 9951)

APPLICATION FOR NEW LICENSE FOR MAJOR PROJECT LESS THAN 10-MW – EXISTING DAM

EXHIBIT H DESCRIPTION OF PROJECT MANAGEMENT AND NEED FOR PROJECT POWER

1 INTRODUCTION

The French Landing Hydroelectric Project (Project) is an existing hydroelectric project owned by, and licensed to, STS Hydropower, LLC (STS) and the Van Buren Charter Township (collectively the Licensees).[1] STS is an independent power producer and, as such, does not provide electric service to any particular group or class of customers. The Project generates renewable power that is currently sold to Detroit Edison (DTE).

18 C.F.R. § 16.10(a) requires all applicants for a new license to provide certain information that pertains to an applicant's plans and ability to operate and maintain the Project. Such information required by 18 C.F.R § 16.10(a) is provided in Section 2 of this exhibit. Furthermore, 18 C.F.R. § 16.10(b) requires information to be provided by an applicant who is an existing licensee. The required information in 18 C.F.R. § 16.10(b) is provided in Section 3 of this exhibit.

2 INFORMATION TO BE SUPPLIED BY ALL APPLICANTS

2.1 Plans and Ability of Owners of French Landing Dam to Operate and Maintain the Project

2.1.1 Plans to Increase Capacity or Generation

Not applicable. The Licensees have no current plans to increase the capacity or generation of the Project.

2.1.2 Plans to Coordinate the Operation of the Project with Other Water Resource Projects

The Project is operated in accordance with the terms of the current Federal Energy Regulatory Commission (FERC or the Commission) license, which requires it to operate in a run-of-river mode. Daily inflow to the Project impoundment relies upon the upstream Ford Lake Project (FERC No. 5334), which also operates in a run-of-river mode. Due to the regulated nature of the Huron River, under typical operating conditions, inflow to the Project impoundment is relatively stable throughout each day. The Licensees are proposing to operate the Project consistent with how it has

[1] Although STS and Van Buren Charter Township are co-licensees, STS is the managing entity responsible for the day-to-day management and operation of the Project.

operated over the course of its current license. As a result, there will be no change to the Project impoundment or downstream flows.

2.1.3 Plans to Coordinate the Operation of the Project with Other Electrical Systems

STS is an independent power producer that sells electricity to DTE. DTE is a diversified energy company based in Detroit, Michigan. DTE's electric company serves 2.3 million customers in southeast Michigan

2.2 Need for Electricity Generated by the Project

2.2.1 The Reasonable Costs and Availability of Alternative Sources of Power

If a new license for the Project is not granted, the services that the Project provides would need to be provided by other sources, likely to be fossil-fired generating units. Fossil-fired generating units have fuel and other costs that are significantly higher than those of the Project. Hydropower represents the lowest variable cost resource among power supply alternatives, which allows hydropower assets such as the Project to bid energy into the market at lower prices than alternative resources. The loss of low-variable cost resources such as the Project would result in upward pressure on the clearing prices in the market, which would ultimately be paid by electric consumers in the DTE service region.

In addition, the Project generates renewable power without the emissions of air pollutants or greenhouse gasses produced by fossil fuel plants. This is an increasingly important fact as the country shifts to a carbon-free grid.

2.2.2 Increase in Costs if the Licensee is not Granted a License

If the Licensees are not granted a license, the Project would cease to provide affordable and clean electricity to the market. This would result in an unquantified increase in costs being passed to electric consumers in Michigan.

2.2.3 Effects of Alternative Sources of Power

2.2.3.1 Effects on Licensee's Customers

This section is not applicable since STS is a wholesale supplier.

2.2.3.2 Effect on Licensee's Operating and Load Characteristics

This section is not applicable as STS is an independent power producer and, as such, does not maintain a separate transmission system which could be affected by replacement or alternative power sources.

2.2.3.3 Effect on Communities Served by the Project

See the discussion above in Sections 2.2.1 and 2.2.2 regarding the loss of the Project's generation. Because the Licensees cannot predict with any certainty the actual type or location of a potential alternative facility providing replacement power, they cannot specifically discuss potential effects of any particular community. However, costs associated with replacing the services provided by the Project would be significantly more than the projected cost of operating the Project under a new license.

2.3 Need, Reasonable Cost, and Availability of Alternative Sources of Power

STS is an independent power producer and, as such, does not have an obligation or need to prepare load and capability forecasts in reference to any particular group or class of customers. For the region, those obligations and tasks remain within the scope of services provided by the Midcontinent Independent System Operator (MISO).

2.4 Effect of Power on Licensee's Industrial Facility

This section is not applicable to STS, which does not own industrial facilities.

2.5 Need of Indian Tribe Licensee for Electricity Generated by the Project

This section is not applicable to STS.

2.6 Impacts on the Operations and Planning of Licensee's Transmission System

Because STS is an independent power producer and does not own the local transmission system, this section is not applicable. STS maintains a single-line diagram for the Project (Appendix H-1).

2.7 Statement of Need for Modifications

The Licensees are not proposing any changes to the Project facilities or operation.

2.8 Consistency with Comprehensive Plans

Section 10(a)(2) of the Federal Power Act (FPA) requires the Commission to consider the extent to which a project is consistent with federal and state comprehensive plans for improving, developing, and conserving waterways affected by the Project. In accordance with Section 10(a)(1) of the FPA, the list of Commission approved federal and state comprehensive plans was reviewed to determine applicability to the Project. The federal resources agencies, as well as the State of Michigan, have prepared a number of comprehensive plans, which provide a general assessment of a variety of environmental conditions in Michigan. The Project's consistency with pertinent state and federal comprehensive plans is discussed in Exhibit E.

2.8.1 **FERC-Approved State of Michigan Comprehensive Plans**

Note: Unless otherwise noted, these plans have not been updated or updates have not been submitted to FERC for approval since their development dates noted below.

Forest Service. n.d. Huron-Manistee National Forests land and resource management plan. Department of Agriculture, Cadillac, Michigan.

Michigan Department of Environmental Quality. 1996. Non-indigenous aquatic nuisance species, State management plan: A strategy to confront their spread in Michigan. Lansing, Michigan.

Michigan Department of Natural Resources. 1995. Huron River assessment. Special Report 16. Lansing, Michigan. April 1995.

Michigan Department of Natural Resources. 2023. Strategic Plan 2023-2029 Charting the course: Fisheries Division's Framework for Managing Aquatic Resources. 2023-2029 Fisheries Division Strategic Plan.

Michigan Department of Natural Resources. 2023. Michigan Statewide Comprehensive Outdoor Recreation Plan 2023-2027. Lansing, Michigan.

2.8.2 **FERC-Approved Federal Comprehensive Plans**

National Park Service. The Nationwide Rivers Inventory. Department of the Interior, Washington, D.C. 1993.

U.S. Fish and Wildlife Service. 1988. Great Lake and Northern Great Plains Piping Plover Recovery Plan. Department of the Interior, Twin Cities, Minnesota. May 12, 1988.

U.S. Fish and Wildlife Service. Canadian Wildlife Service. 1986. North American waterfowl management plan. Department of the Interior. Environment Canada. May 1986.

U.S. Fish and Wildlife Service. 1988. The Lower Great Lakes/St. Lawrence Basin: A component of the North American waterfowl management plan. December 29, 1988.

U.S. Fish and Wildlife Service. 1993. Upper Mississippi River & Great Lakes Region joint venture implementation plan: A component of the North American waterfowl management plan. March 1993.

2.9 **Financial and Personnel Resources**

STS is an affiliate of Eagle Creek Renewable Energy, LLC, who has considerable experience operating not only the Project but other hydroelectric and water storage projects as well. The Project has a full complement of operations personnel who perform all necessary day-to-day functions related to Project operations and maintenance. On-site staff are fully qualified to handle all aspects of Project operation and maintenance. All personnel receive training commensurate

with their responsibilities in an ongoing effort to improve their ability to operate the Project in the safest and most efficient manner possible.

2.10 Notification of Affected Land Owners

The Licensees do not propose to expand Project lands associated with this license application beyond property currently owned by Van Buren Charter Township.

2.11 Applicant's Electricity Consumption Efficiency Improvement Program

This section is not applicable given that STS is an independent power producer.

2.12 Identification of Indian Tribes Affected by the Project

There are no Indian tribes affected by the Project. The federally recognized Indian tribes likely to be interested in the relicensing are included on the current distribution list for the Project.

3 INFORMATION TO BE PROVIDED BY AN APPLICANT WHO IS AN EXISTING LICENSEE

3.1 Measures Planned to Ensure Safe Management, Operation, and Maintenance of the Project

The Project is operated locally, with staff operating the Project 8 hours a day on weekdays. At all other times the Project is monitored remotely. When not staffed, operators are on call and respond to alarms from the powerhouse within 15 minutes. The local operators perform general inspections at least once daily, including visual inspections of the powerhouse and spillway structures. Daily forms are created during the inspections on a report form, which also records water levels and discharges, and mechanical equipment observations and maintenance. The forms are reviewed weekly by a supervisor, and the supervisor is notified immediately if any unusual condition is observed.

Operation of the generating equipment is accomplished using an automatic controller located in the powerhouse. The controller has an alarm system that allows for human intervention if a problem develops with the dam or generating equipment. When an alarm is activated, the operator is notified through a pager or by telephone. Alarms included in the system are water level alarms for maximum, minimum, and rate of change, as well as generation equipment failures. In addition to alarms for operators, an audible siren is located at the powerhouse to alert recreationists of a sudden increase in discharge prior to the startup of the turbine or operation of a sector gate.

The Licensees have a sound compliance history for the Project. Additionally, Part 12 inspections are conducted by FERC's Chicago Regional Office on a regular basis. STS completes all necessary corrective actions to address comments and recommendations arising from FERC inspections in a timely manner.

The dam is inspected annually by STS's Engineering and Operations staff, as well as after floods in the Project vicinity. In addition, routine repairs are performed as needed. STS maintains an Emergency Action Plan (EAP) for the Project. STS maintains and annually verifies the accuracy of the EAP contact list to be used in the event of a dam failure at the Project. STS's staff reviews the EAP at least annually, and there is annual EAP training for Project personnel.

3.1.1 Existing and Planned Operation of the Project During Flood Conditions

Operators use the gated spillway to route inflows and maintain reservoir levels when inflows exceed the hydraulic capacity of the powerhouse, which is approximately 880 cubic feet per second (cfs). Inflows which exceed the gated spillway discharge capacity are routed over the ungated auxiliary spillway. When flow events exceed 4,500 cfs, at least one Project operator is on-site 24 hours per day. Normal staffing hours are resumed when flows are reduced below the 4,500 cfs threshold.

3.1.2 Warning Devices Used to Ensure Downstream Public Safety

The Licensees provide multiple visual checks and audible warning devices to alert the public prior to any flow release changes made at Project facilities. Information and warnings about hazards are displayed to the public through signage places around the Project facilities, upstream, and downstream, and along the shorelines. Warning devices at the Project include:

- Danger Warning Signs
- Power and Communication Lines
- Audible Devices
- Lights
- Beacons
- Buoys (installed May and removed in October, weather permitting)
- Verbal Announcements

The Licensees are required to file a Public Safety Plan with the Commission to provide notification procedures that will alert the proper personnel and organizations so that properly trained personnel can effectively support public safety. The Public Safety Plan is reviewed annually and updated when necessary. The most recent Public Safety Plan for the Project was filed with FERC on February 7, 2023.

3.1.3 Proposed Changes Affecting the Existing Emergency Action Plan

The Licensees do not propose any modifications to the EAP as a result of issuance of a new license for the Project.

3.1.4 Existing and Planned Monitoring Devices

The Licensees have deployed headwater and tailwater level transducers/gages to monitor water levels in the impoundment and tailwater area. The transducers/gages are monitored and logged at least daily by Project operators and are recorded every 10 minutes through an automated computer system. More readings are logged during periods of high flows.

Additional information regarding dam safety and monitoring devices is classified as Critical Energy Infrastructure Information (CEII) and can be found in the Project's Dam Safety and Surveillance Monitoring Plan and Reports, which have been filed with the Commission's Chicago Regional Office.

3.1.5 Project's Employee and Public Safety Record

There have been no Project-related deaths or serious injuries to members of the public within the Project boundary during the past 5 years. No accidents attributable to Project operations have occurred within the period of recordkeeping for the facility.

3.2 Current Operation of the Project

A description of the Project operation is contained in Exhibit A of this License Application.

3.3 Project History

A brief history of Project milestones is provided below:

- 1924-25 – Original construction
- 1946 – Tailrace modifications
- 1960's – Hydropower decommissioned
- 1970 – Physical Model Study of spillway hydraulics
- 1973 – Ownership transfer
- 1974 – Spillway gate brace system construction
- 1980's – Major project-wide rehabilitation
- 1987 – Current license issued
- 1988 – STS Hydropower operations lease agreement
- 1988 – Project comes back online
- 1997 – Right spillway gate valve repairs and concrete access deck overlay
- 2009-10 – Right embankment raise and spillway gate maintenance
- 2014 – Spillway gate maintenance
- 2020 – Right embankment upstream slope and crest armoring
- 2021 – Spillway dewatering system rehab and miscellaneous repairs

3.4 **Lost Generation Due to Unscheduled Outages**

Table 3.4-1 lists the record of unscheduled outages and related lost generation during the last five years (2020-2024).

Table 3.4-1. French Landing Project Unscheduled Outages and Lost Generation, 2020-2024

Unit	Date / Time Unavailable	Date / Time Available	Estimated MWh lost	Reason for Unit Unavailability
1	2/6/2020 1:00 AM	2/9/2020 1:00 AM	113.0	PLC issue
1	3/30/2020 12:00 AM	3/30/2020 12:00 AM	18.2	Utility Outage
1	6/23/2020 12:00 AM	6/23/2020 12:00 AM	1.7	Utility Trip
1	7/20/2020 12:00 AM	7/21/2020 12:00 AM	42.9	Utility Outage
1	8/8/2020 12:00 AM	8/8/2020 12:00 AM	4.7	Breaker Panel work
1	8/15/2020 12:00 AM	8/31/2020 12:00 AM	140.6	Exciter Issue
1	9/1/2020 12:00 AM	10/9/2020 12:00 AM	712.7	Exciter Issue
1	4/6/2021 12:00 AM	4/8/2021 12:00 AM	51.5	Water leak on Electrical Panel
1	4/20/2021 12:00 AM	4/21/2021 7:00 PM	37.7	Utility Outage
1	8/8/2021 12:00 AM	8/8/2021 12:00 AM	27.2	Utility Outage
1	11/9/2021 12:00 AM	11/11/2021 12:00 AM	22.0	Utility Outage
1	12/11/2021 12:00 AM	12/11/2021 5:00 PM	16.0	Utility Outage
1	12/23/2021 9:00 AM	6/30/2023 10:00 AM	12,200.3	Turbine runner and ball bearing shaft work
1	7/2/2023 7:00 AM	7/7/2023 2:37 PM	116.8	New flow meter for middle guide bearing
1	8/3/2023 12:00 AM	8/9/2023 10:00 AM	79.6	Solenoid failure on the governor
1	9/12/2023 8:00 AM	9/13/2023 8:00 AM	9.6	Dewatered to check recent repair
1	12/3/2023 1:00 AM	12/4/2023 10:00 AM	23.7	Bearing oil flow sensor trip - filter needed cleaned.
1	12/28/2024 1:00 AM	1/1/2025 12:00 AM	61.9	Chiller for cooling generator bearing stopped working
1	1/14/2025 1:00 AM	1/31/2025 12:00 AM	221.4	Oil pump relay tripping the unit

3.5 Licensee's Record of Compliance

The Project has a good record of compliance with the terms and conditions of the existing license. A review of the Licensees' records indicates no violations of the terms and conditions of the license. In addition, the Licensees have not received any communication from the Commission indicating possible non-compliance.

3.6 Actions Affecting the Public

The Licensees generally allow public access to the Project impoundment and the surrounding Project lands. The Licensees will, however, restrict public access to specific areas that pose a threat to public safety. The Licensees provide public recreation access at French Landing Park, which allows access to the impoundment and tailwater area in multiple locations and provides numerous recreation opportunities. A full description of these opportunities and associated recreational facilities provided by the Licensees is contained in Exhibit E of this application.

Generation at hydropower facilities generally offsets the need for increased operation at existing baseload facilities, such as oil or coal-fueled generation plants. Fossil-fueled plants produce atmospheric pollutants that must be controlled at significant costs. The avoided cost of air pollution, therefore, is a public benefit of hydroelectric generation.

The Licensees' regard for public safety is demonstrated by its active program of installing warning signs and safety devices at the Project (Section 3.1.2), and its regular review of its internal Project safety plans.

3.7 Ownership and Operating Expenses That Would Be Reduced if the License Were Transferred

The current Licensees are applying for a long-term license to continue to maintain and operate the Project. Additionally, there is no competing application to take over the Project. Because there is no proposal to transfer the Project license, this section is not applicable to the Project.

3.8 Annual Fees for Use of Federal or Native American Lands

This section is not applicable to the Project since no Federal or Native American Lands are present in the Project area.

APPENDIX H-1: SINGLE LINE DIAGRAM

This appendix constitutes Critical Energy Infrastructure Information (CEII) in accordance with 18 C.F.R. § 388.113(c) and has been removed from the public version of this License Application.

This material is contained in Volume 2 – CEII, the non-public version filed with the Commission.

Procedures for obtaining access to CEII may be found at 18 C.F.R. § 388.11.