KANKAKEE HYDROELECTRIC PROJECT

(FERC PROJECT NO. 8632)

PRE-APPLICATION DOCUMENT

PREPARED FOR:

CITY OF KANKAKEE EST. 1853

PREPARED BY:

Stantec

JANUARY 2023

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TABLE OF CONTENTS

Section **Page**

TABLE OF CONTENTS

Section **Page**

TABLE OF CONTENTS

Section **Page**

LIST OF FIGURES

Figure **Page**

LIST OF TABLES

Table **Page**

LIST OF APPENDICES

ABBREVIATIONS AND ACRONYMS

ACHP	Advisory Council on Historic Preservation
AOI	Area of Interest
APE	Area of Potential Effect
BCC	Birds of Conservation Concern
BCR	Bird Conservation Region
BIA	Bureau of Indian Affairs
C	Degrees Celsius
CFR	Code of Federal Regulations
cfs	Cubic Feet per Second
CISEH	Center for Invasive Species and Ecosystem Health at the University of Georgia
City	City of Kankakee, Illinois
Commission	Federal Energy Regulatory Commission
CUI/CEII	Critical Energy and Infrastructure Information
CUI/PRIV	Privileged Information
CWA	Clean Water Act
DLA	Draft License Application
DO	Dissolved Oxygen
EJ	Environmental Justice
ESA	Endangered Species Act
F	Degrees Fahrenheit
FE	Federally Endangered
FERC	Federal Energy Regulatory Commission
FLA	Final License Application
FPA	Federal Power Act
ft	Feet
hp	horsepower
HPMP	Historic Properties Management Plan
hz	Hertz
IBI	Index of Biological Integrity
IDEM	Indiana Department of Environmental Management
IDENR	Illinois Department of Energy and Natural Resources (now IDNR)
IDNR	Illinois Department of Natural Resources
IEPA	Illinois Environmental Protection Agency
IESPB	Illinois Endangered Species Protection Board
ILP	Integrated Licensing Process
INHS	Illinois Natural History Survey
IPaC	Information for Planning and Consultation
JVIP	Joint Venture Implementation Plan
KRMA	Kankakee River Metropolitan Agency
KRVFPD	Kankakee River Valley Forest Preserve District
kV	Kilovolt
KVPD	Kankakee Valley Park District
kW	kilowatt
Licensee	City of Kankakee, Illinois
m	Meters
mg/L	Milligram per Liter
mm	Millimeter
MNTP	Midewin National Tallgrass Prairie
Msl	Mean Sea Level
MS4	Municipal Separate Storm Sewer System
MW	Megawatt
MWD	Moderately Well Drained
MWh	Megawatt Hours
NAWMP	North American Waterfowl Management Plan

NCP	Notice of Commencement of Proceeding
NEPA	National Environmental Policy Act
NGO	Non-Governmental Organizations
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOI	Notice of Intent to File a New License Application
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NYAS	New York Audubon Society
PAD	Pre-Application Document
PD	Poorly Drained
Pool	Kankakee Dam Reservoir
Project	Kankakee Hydroelectric Project
PURPA	Public Utility Regulatory Policies Act
RM	River Mile
rpm	Revolutions Per Minute
RTE	Rare, Threatened, or Endangered
SCADA	Supervisory Control and Data Acquisition
SCORP	State Comprehensive Outdoor Recreation Plan
SCS	Soil Conservation Service
SHPO	State Historic Preservation Office
SPD	Somewhat Poorly Drained
SWCD	Soil and Water Conservation District
TCP	Traditional Cultural Place/Property
TES	Threatened, Endangered, or Candidate Species
TIF	Tax Increment Financing
TMDL	Total maximum Daily Load
TLP	Traditional Licensing Process
UMRGLR	Upper Mississippi River & Great Lakes Region
US	United States
USACE	United States Army Corps of Engineers
USC	United States Code
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGA	United States Golf Association
USGS	United States Geological Society
V	Volt
WD	Well Drained
WQMP	Water Quality Management Plan
WWTP	Wastewater Treatment Plant

1.0 INTRODUCTION

The City of Kankakee, Illinois (City) is Licensee (Licensee or Applicant) for the 1.2-megawatt (MW) Kankakee Hydroelectric Project (Project or Kankakee Project) (Project No. 8632), located on the Kankakee River in the City of Kankakee in Kankakee County, Illinois. The Project is operated in a run-of-river mode with releases coordinated with the Illinois Department of Natural Resources (IDNR) in accordance with the original FERC License. The Kankakee Project generates electricity using flows "released" (*i.e.*, made available) by IDNR.

The Project is currently licensed by the Federal Energy Regulatory Commission (FERC or Commission) under the authority granted to FERC by Congress through the Federal Power Act (FPA), 16 United States Code (USC) §791(a), et seq., to license and oversee the operation of non-federal hydroelectric projects on jurisdictional waters and/or federal land. The features associated with the FERC-licensed Project include a 440-foot-long and ten-foot-high concrete dam topped by a two-foot-high inflatable rubber dam, an intake and tailrace connected to a concrete powerhouse with three turbine generating units, generator leads, step-up transformer, a 2.4-mile-long transmission line extending from the powerplant to the Kankakee River Metropolitan Agency (KRMA) Wastewater Treatment Plant (WWTP) in Kankakee, recreational facilities, and appurtenant facilities. The dam, powerhouse, intake, tailrace, step-up transformer, recreational fishing and picnic facilities, and a portion of the transmission line are located on lands owned by IDNR and leased to the Licensee. There are no federal lands within the FERC Project boundary.

The Project was issued an original, 40-year license by the Commission on May 27, 1988. The current license expires on April 30, 2028. In accordance with FERC's regulations at 18 Code of Federal Regulations (CFR) §16.9(b), the Licensee must file an application for a new license with FERC no later than April 30, 2026.

In support of preparing an application for a new license, the Licensee has requested use of the Commission's Traditional Licensing Process (TLP) rather than the Integrated Licensing Process (ILP). As demonstrated herein, there is a large amount of existing information available about resources at the Project site. The Project is largely within property owned by IDNR and leased to the City for hydropower production purposes. The Project operates in a run-of-river mode, pursuant to original FERC license and an Operating Agreement between the Licensee and the IDNR. The existing turbines-generators, which are currently non-operational, will be repaired or replaced in 2024 or 2025. The Licensee proposes continued operation of the Project in essentially the same manner during the next license term and, therefore, does not anticipate new or significant impacts to resources. Based upon the information described above, the Licensee has requested that the Commission grant use of the TLP.

1.1 AUTHORIZED AGENTS

The individual authorized to act as an agent for the Licensee during the process of applying for a new license is:

Zachary Newton
Sewer Services Operations Manager
City of Kankakee
Kankakee Environmental Services Utility
295 North Harrison Avenue
Kankakee, IL 60901
Phone: 815-933-0454

1.2 BACKGROUND

The Project was issued an original, 40-year license by the Commission on May 27, 1988. The current license expires on April 30, 2028. In accordance with FERC's regulations at 18 Code of Federal Regulations (CFR) §16.9(b), the Licensee must file an application for a new license with FERC no later than April 30, 2026.

The Project is located on the Kankakee River (river mile 124 downstream of its headwaters near South Bend, Indiana), in the City of Kankakee, Illinois.

Commercial operation of the Project commenced in April 1991. On August 24, 1995, the Commission issued an order approving as-built exhibits for the Project. These exhibits reflected as-built conditions, which included changes in the number of generating units, capacity of the generating units, and location of the transmission line.

The Kankakee Project turbine-generator units are currently non-operational. The Licensee is working to repair or replace these units in 2024 or 2025. In addition, the Licensee proposes to continue, as previously, to provide Project electricity to the KRMA WWTP, as well as to provide a new connection the City's Stone Street Wastewater Lift Station (which feeds the KRMA WWTP) to offset electrical use and associated pumping costs at this City facility. To make this connection a new 12.5 kV overhead transmission line (on 40 to 45-foot-tall wood poles) is proposed that would tap into the existing Project Primary Transmission Line and run along a residential street for approximately 600 feet before terminating at a transformer in the existing Stone Street Wastewater Lift Station. This new transmission line would be added to the existing FERC Project boundary.

1.3 DOCUMENT ORGANIZATION

In preparing the Pre-Application Document (PAD), FERC's regulations require that an applicant exercise due diligence in obtaining and including existing, relevant and reasonably available information about the Project and related resources.

This PAD provides FERC, federal and state agencies, Native American tribes, local governments, non-governmental organizations (NGO), businesses, members of the public, and others interested in the Project relicensing (i.e., these parties are collectively referred to as "relicensing participants") with summaries of existing, relevant, and reasonably available information. This information, which was (and remains) in the Licensee's possession at the time the PAD was filed, is related to the Project and potentially affected resources. In addition, the PAD presents the Licensee's preliminary proposal for gathering additional information that may be needed to meet the information requirements for issuance of the new license. The PAD sections and appendices satisfy the requirements set forth in 18 CFR §5.6(d).

In this regard, the Licensee has thoroughly inventoried its own files for relevant information about the Project. They have also mailed a questionnaire (see **Appendix A**) to request information and data about the Project and nearby environmental resources. Responses to the questionnaire are also included in **Appendix A**. The Licensee also conducted searches of potentially available information sources, including existing information already in possession of the licensee, reference books and the Internet. Information sources cited in this PAD are appropriately referenced. The Kankakee Hydroelectric Project PAD is organized as follows:

- Section 1: Introduction
- Section 2: Process Plan and Schedule
- Section 3: Project Location, Facilities and Operation
- Section 4: Existing Environment and Resource Impacts
- Section 5: Potential Issues and Studies
- Section 6: Qualifying Plans
- Section 7: Summary of Contacts

- Appendices (A-E)

2.0 PROCESS PLAN AND SCHEDULE

This PAD is being prepared in conformance with FERC requirements to provide the basis for a request to utilize the Traditional Licensing Process (TLP) rather than the Integrated Licensing Process (ILP). As demonstrated herein, there is a large amount of existing information available about resources at the Project site. The Project boundary is located largely on lands leased from IDNR. The hydroelectric project is operated in a run-of-river mode that conforms to operating procedures agreed to with IDNR. Therefore, upstream and downstream operational impacts associated with the reservoir shorelines, wetlands, and other natural and man-made features are minimal.

2.1 PROCESS PLAN

In accordance with FERC regulations [18 CFR §5.6 (d)(1)], the PAD must include a plan and schedule for pre-application activity that discusses timelines for pre-filing consultation, information gathering, and resource studies. The plan and schedule must also include a proposed location and date for the required joint meetings and site visits. **Table 2.1-1** presents a schedule for pre-filing (Final License Application) activities.

Table 2.1-1. Kankakee FERC Relicensing TLP Pre-Filing Process Plan

Codified Requirement	Lead	Activity[1]	Timeframe (Start and Finish)[2,3]	
18 CFR 5.3 (b) & 18 CFR 5.5 (a-g)	Licensee	File NOI, request to use TLP, request for non-federal representative status under § 7 of the ESA and § 106 of the NHPA. *(No earlier than 5.5 years and no later than 5 years prior to expiration of the current license)*	**01/27/2023** (Friday)	
18 CFR 5.6 (a)-(e)	Licensee	File PAD. *(No earlier than 5.5 years and no later than 5 years prior to expiration of the current license)*	**01/27/2023** (Friday)	
18 CFR 5.7	FERC	Hold meeting with potentially affected Native American tribes. *(No later than 30 days from date NOI and PAD filed)*	01/31/2023 (Tuesday)	02/24/2023 (Friday)
18 CFR 5.8 (a)	FERC	Issue Notice of Commencement of Proceeding (NCP) and decision regarding Licensee request to use TLP. *(No later than 60 days from date NOI and PAD filed)*	02/24/2023 (Friday)	03/28/2023 (Tuesday)
18 CFR 5.8 (b)	FERC	Initiate informal consultation under § 7 of the ESA and/or § 106 of the NHPA, if appropriate. *(No later than 60 days from date NOI and PAD filed)*	02/24/2023 (Friday)	03/28/2023 (Tuesday)
18 CFR 16.8 (b)(3)(i) (B)	Licensee	Consult with relicensing participants on scheduling of a joint meeting. Provide to relicensing participants a written notice of the time and place of the joint meeting and an agenda of the issues to be discussed. *(No later than 15 days in advance of joint meeting*)	03/10/2023 (Friday)	04/27/2023 (Thursday)

Table 2.1-1. Kankakee FERC Relicensing TLP Pre-Filing Process Plan

Codified Requirement	Lead	Activity[1]	Timeframe (Start and Finish)[2,3]	
18 CFR 16.8 (h)(i)(1)	Licensee	Post notice of joint meeting, including purpose, location, time, and agenda, in local newspapers. *(No later than 14 days in advance of joint meeting*)	03/13/2023 (Monday)	05/12/2023 (Friday)
18 CFR 16.8 (b)(3)(i)(A)	Licensee	Hold joint meeting to review information and discuss data and studies to be provided by Licensee as part of the consultation process. Provide agencies with an opportunity for a site visit. (*No earlier than 30 days but no later than 60 days from date NCP is issued*)	03/27/2023 (Monday)	05/26/2023 (Friday)
18 CFR 16.8 (b)(3) & (4)	Relicensing Participants	Relicensing participants may attend the joint meeting to express their views regarding resource issues that should be addressed in the application. Public attendance at the site visit is at the discretion of Licensee (*No earlier than 30 days but no later than 60 days from date NCP is issued*)	03/27/2023 (Monday)	05/26/2023 (Friday)
18 CFR 16.8 (b)(3)(ii)(B)(4)	Licensee	Make either an audio recording or written transcript of the joint meeting and promptly provide copies of these recordings, upon request. (*Promptly provide to FERC, agencies, and Native American tribes, upon request*)	Promptly provide following the joint meeting	
18 CFR 16.8 (b)(5)	Relicensing Participants	Provide to Licensee written comments identifying relicensing participants' determination of necessary studies to be performed or information to be provided by Licensee in the application. (*No later than 60 days after joint meeting unless deadline is extended by FERC*).	05/26/2023 (Friday)	07/25/2023 (Tuesday)
18 CFR 16.8 (b)(6)(i)	Licensee & Relicensing Participants	During first stage consultation, if Licensee and a relicensing participant disagree regarding any matter, or if the need to conduct a study or gather information is established, Licensee or the relicensing participant may refer the dispute in writing to FERC for resolution, providing a copy to other affected parties. (*Any time during first stage consultation*)	03/28/2023 (Tuesday)	07/26/2023 (Wednesday)
(18 CFR 16.8 (b)(6)(ii)	Disagreeing Party	If a dispute is filed with FERC, the disagreeing party may file a response. (*No later than 15 days from date dispute is filed*)	No later than 15 days from the date the dispute is filed with FERC	
18 CFR 16.8 (b)(6)(iv)	FERC	FERC resolves dispute.	--	--
18 CFR 16.8 (c)(1)	Licensee	Conduct studies. *(assumes 1 year for studies with 1 year reserved for some follow up, if necessary)*	05/29/2023 (Monday)[4]	05/29/2025 (Thursday)[4]

Table 2.1-1. Kankakee FERC Relicensing TLP Pre-Filing Process Plan

Codified Requirement	Lead	Activity[1]	Timeframe (Start and Finish)[2,3]	
18 CFR 16.8 (c)(2)	Relicensing Participants	During Second Stage Consultation, a relicensing participant may request Licensee conduct a study or gather information not previously identified. Licensee must promptly initiate the study or gather the information, unless it refers the request to FERC for resolution. (*During second stage consultation*)	--	--
18 CFR 16.8 (c)(2)	Licensee	Licensee may refer the request to FERC for dispute resolution, copying affected parties.	--	--
18 CFR 16.8 (c)(2) with reference to (b)(5)(i-vi)	Relicensing Participants	If Licensee files the dispute with FERC, other affected parties may file a response. (*No later than 15 days from date dispute is filed with FERC*)	No later than 15 days from the date Licensee files dispute with FERC	
18 CFR 16.8 (c)(2) with reference to (b)(5))	FERC	FERC resolves dispute.	--	--
18 CFR 16.8 (c)(4)	Licensee	Provide agencies and tribes a copy of the DLA, including full documentation of consultation. *(No less than 150 days prior to deadline for filing license application*)	06/02/2025 (Monday) *(assumed date, could be later in 2025)*	
18 CFR 16.8 (c)(5)	Resource Agencies & Tribes	Provide written comments on DLA to Licensee. (*No later than 90 days from the date DLA filed*)	09/02/2025 (Tuesday)	
18 CFR 16.8 (c)(6)(i)	Licensee, Resource Agencies, & Tribes	If comments indicate a resource agency or tribe has a substantive disagreement with Licensee conclusions regarding resource impacts or proposed measures, Licensee holds at least one joint meeting with the disagreeing resource agency or tribe and other agencies with similar or related areas of interest, expertise, or responsibility to discuss and attempt to reach agreement. (*No later than 60 days from the date of the written comments of the disagreeing agency or tribe*)	09/03/2025 (Wednesday)	11/03/2025 (Monday)
18 CFR 16.8 (c)(6)(ii)	Licensee	Consult with disagreeing party and others about scheduling of joint meeting, and provide FERC, disagreeing party, and others written notice of the time and place of the joint meeting and a written agenda of the issues to be discussed. (*No later than 15 days in advance of the joint meeting*)	No later than 15 days in advance of the joint meeting	
18 CFR 16.8 (c)(7)	Licensee & Disagreeing Party	Licensee and the disagreeing resource agency or Native American tribe may conclude the joint meeting with a document embodying any agreement and any unresolved issues.	--	--

Table 2.1-1. Kankakee FERC Relicensing TLP Pre-Filing Process Plan

Codified Requirement	Lead	Activity[1]	Timeframe (Start and Finish)[2,3]	
18 CFR 16.8 (c)(8)	Licensee	Licensee describes all disagreements with a resource agency or Native American tribe on technical or measures in its application, including an explanation of the basis for Licensee's disagreement with the resource agency or tribe.	--	--
18 CFR 16.8 (d)(1)	Licensee	File the FLA and provide a copy of the FLA to relicensing participants. *(No later than 2 years prior to expiration of the current license)*	03/20/2026 (Friday) *(or sooner)*	
18 CFR 16.8 (f)	Licensee	Include in Exhibit E documentation of all consultation regarding comments, recommendations, proposed terms and conditions, and studies. If the comments, recommendations, proposed terms and conditions, and studies were not accepted by Licensee, describe why.	Include in FLA	
18 CFR 4.32 (b) (6)	Licensee	Publish notice twice of the filing of its application, no later than 14 days after the filing date, in a daily or weekly newspaper of general circulation and file with FERC proof of publications.	04/03/2026 (Friday)	

Source: Stantec
Notes:
[1]The activity description summarizes the pertinent regulation.
[2]When an activity is contingent on completion of a previous activity, the schedule assumes the previous activity is completed the latest date possible for that previous activity, unless otherwise indicated.
[3]According to 18 CFR §385.2007(a)(2), if a filing date falls on a Saturday, Sunday, or federal legal public holiday, the deadline for filing becomes the next business day. The schedule includes this consideration.
[4]This TLP schedule assumes studies begin after the earliest deadline for providing to Licensee written comments identifying necessary studies or information, and extend one full year, but also have a 2nd year reserved if follow up study work is needed.
Key:
DLA = Draft Application for a New License
Licensee = City of Kankakee
ESA = Endangered Species Act
FERC = Federal Energy Regulatory Commission
FLA = Final Application for a New License
NCP = Notice of Commencement of Proceeding
NHPA = National Historic Preservation Act
NOI = Notice of Intent
PAD = Pre-Application Documents
TLP = Traditional Licensing Process

2.2 TLP PARTICIPATION, AND LOCATION AND DATES FOR THE TLP JOINT MEETING AND SITE VISIT

The Licensee has provided this PAD to representatives of relevant resource agencies, local governments, Indian Tribes, NGOs, and members of the public included on the distribution list attached to the cover letter transmitting this PAD. Any party that desires to be added to or removed from the distribution list should send a request to the individuals listed in **Section 1.1** of this document.

Assuming FERC authorizes the Licensee to use the TLP, and based on the TLP process schedule in **Table 2.2-1**, the Licensee's proposed location and date for the TLP site visit are as follows:

Proposed Site Visit – 9:30 a.m. to 11:00 a.m. on May 3, 2023, (Wednesday) at the Project site.

The Licensee proposes holding two joint meetings on the same day as the site visit: one meeting starting at 11:30 a.m. to focus on resource agency concerns; and one starting at 3 p.m. to focus on the

public views. The agenda for each meeting will be set by Licensee following FERC's regulations. Specifically, the Licensee recommends:

Proposed Joint Meetings – 11:30 a.m. to 2 p.m. and 3 p.m. to 6 p.m. on May 3, 2023, (Wednesday) at the City of Kankakee Public Library; 201 East Merchant Street, Kankakee, Illinois 60901.

After FERC approves the Licensee's use of the TLP, the Licensee will consult with FERC and relicensing participants in March/April 2023 to confirm the above joint meeting date and meeting agenda; and will post a public notice of the meetings in one or more local newspapers.

2.3 COMMUNICATION PROTOCOL

2.3.1 Distribution of Relicensing Materials

During the Project relicensing process, communication will take place through public meetings, conference calls, and/or written correspondence. In order to establish the formal consultation record, all phases of formal correspondence require adequate documentation. The intent of the Communication Protocol is to provide a flexible framework for the dissemination of information and for documenting consultation among the participants throughout the relicensing proceeding. The Communication Protocol will remain in effect until issuance of the Project's New License by the Commission.

The Licensee will distribute relicensing materials via email (informal communications) or by mailing notifications (to the established mailing list) of the availability of formal relicensing filings and documents online. If the Licensee has not been provided with a stakeholder's email address, they will mail notification of the availability of documents online via regular mail. Documents filed with the Commission will be available on the Licensee's public relicensing website (https://citykankakee-il.gov/departments/esu-dpw/notice-of-intent.php) and from FERC's eLibrary at https://elibrary.ferc.gov/idmws/search/fercgensearch.asp by searching under FERC Project No. P-8632.

In accordance with FERC's regulations at 18 CFR §§ 5.2 and 16.7, the Licensee will maintain a Public Reference File that consists of records available for public inspection, review, and reproduction.

Requests for copies of relicensing documents can also be made to Mr. Zachary Newton at zjnewton@citykankakee-il.gov. Requests should clearly indicate the document name, publication date (if known), and FERC Project No. 8632. A reproduction charge and postage costs may be assessed for hard copies requested by the public. Federal, state, and tribal entities will not be subject to document processing or postage fees.

Certain documents are restricted from general distribution. These documents include: (1) those covered under the FERC's regulations protecting Critical Energy Infrastructure Information (CEII) (18 CFR §388.113); (2) archaeological survey reports or other information identifying the locations of historic properties; and (3) reports that contain information regarding the locations of Rare, Threatened, and Endangered (RTE) species.

2.3.2 FERC Communication

All communications to FERC regarding Project relicensing must reference the Kankakee Hydroelectric Project FERC No. P-8632 - Application for New License.

FERC strongly encourages paperless electronic filing of comments and interventions through its eFiling or eComment systems. Information and links to these systems can be found at the FERC webpage http://www.ferc.gov/docs-filing/ferconline.asp. In order to eFile comments and/or interventions, interested parties must have an eRegistration account. After preparing the comment or motion to intervene go to www.ferc.gov and select the eFiling link. Select the new user option and follow the prompts. Users are required to validate their account by accessing the site through a hyperlink sent to the registered email account.

An additional method to eFile comments is through the "Quick Comment" system available via a hyperlink on the FERC homepage. "Quick Comments" do not require the users to have a subscription; the comments are limited to 6,000 characters and all information must be public. Commenters are required to enter their names and email addresses. They will then receive an email with detailed instructions on how to submit "Quick Comments."

Stakeholders without internet access may submit comments to FERC at the address below via hard copy, but should be aware that documents sent to FERC by regular mail can be subject to docket-posting delays:

Honorable Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, D.C. 20426

3.0 PROJECT LOCATION, FACILITIES, AND OPERATION

3.1 PROJECT LOCATION

The Project is currently licensed by the Federal Energy Regulatory Commission (FERC or Commission) under the authority granted to FERC by Congress through the Federal Power Act (FPA), 16 United States Code (USC) §791(a), et seq., to license and oversee the operation of non-federal hydroelectric projects on jurisdictional waters and/or federal land. The features associated with the FERC-licensed Project include a 440-foot-long and ten-foot-high concrete dam topped by a two-foot-high inflatable rubber dam, an intake and tailrace connected to a concrete powerhouse with three turbine generating units, generator leads, step-up transformer, a 2.4-mile-long transmission line extending from the powerplant to the KRMA WWTP in Kankakee, recreational facilities adjacent to the powerhouse, and appurtenant facilities. The dam, powerhouse, intake, tailrace, step-up transformer, recreational fishing and picnic facilities, and a portion of the transmission line are located on lands owned by IDNR and leased to the Licensee. There are no federal lands within the FERC Project boundary.

The Kankakee Hydroelectric Project is located at Kankakee Dam on the Kankakee River (river mile 124 downstream of its headwaters near South Bend, Indiana) in the City of Kankakee in Kankakee County, Illinois. Kankakee Dam is owned by the State of Illinois and leased for hydropower purposes to the City of Kankakee. A non-Project reservoir formed by the dam extends upstream for about 4.3 miles (to Aroma Park, Illinois) and has a surface area of 300 acres (**Figure 3.1-1**). The 2.4-mile-long transmission line begins at the transformer adjacent to the powerhouse, crosses the Kankakee River in a conduit attached to the South McMullen Drive (Edward McBroom) Bridge and terminates at the KRMA WWTP located along the river downstream near West Brookmont Boulevard. Five segments of the transmission line (1.5-miles total, including the bridge crossing in a conduit) are located underground in existing rights-of-way, while the remaining four segments (0.9-mile total) are suspended aboveground on standard, 40-45-foot-tall, wooden poles. The existing, main one-line electrical diagram for the Kankakee Project in provided in **Appendix B.**

The Project is operated in a run-of-river mode with releases coordinated with the IDNR in accordance with the original FERC License.

Figure 3.1-2 provides an overview of the Project location and setting. **Figure 3.1-3** provides an overview of the Project facilities further described in **Section 3.2**. The Project vicinity is primarily urban, with some open space (parkland) and natural woodland. The boundary for the Kankakee Project is provided in **Appendix C**.

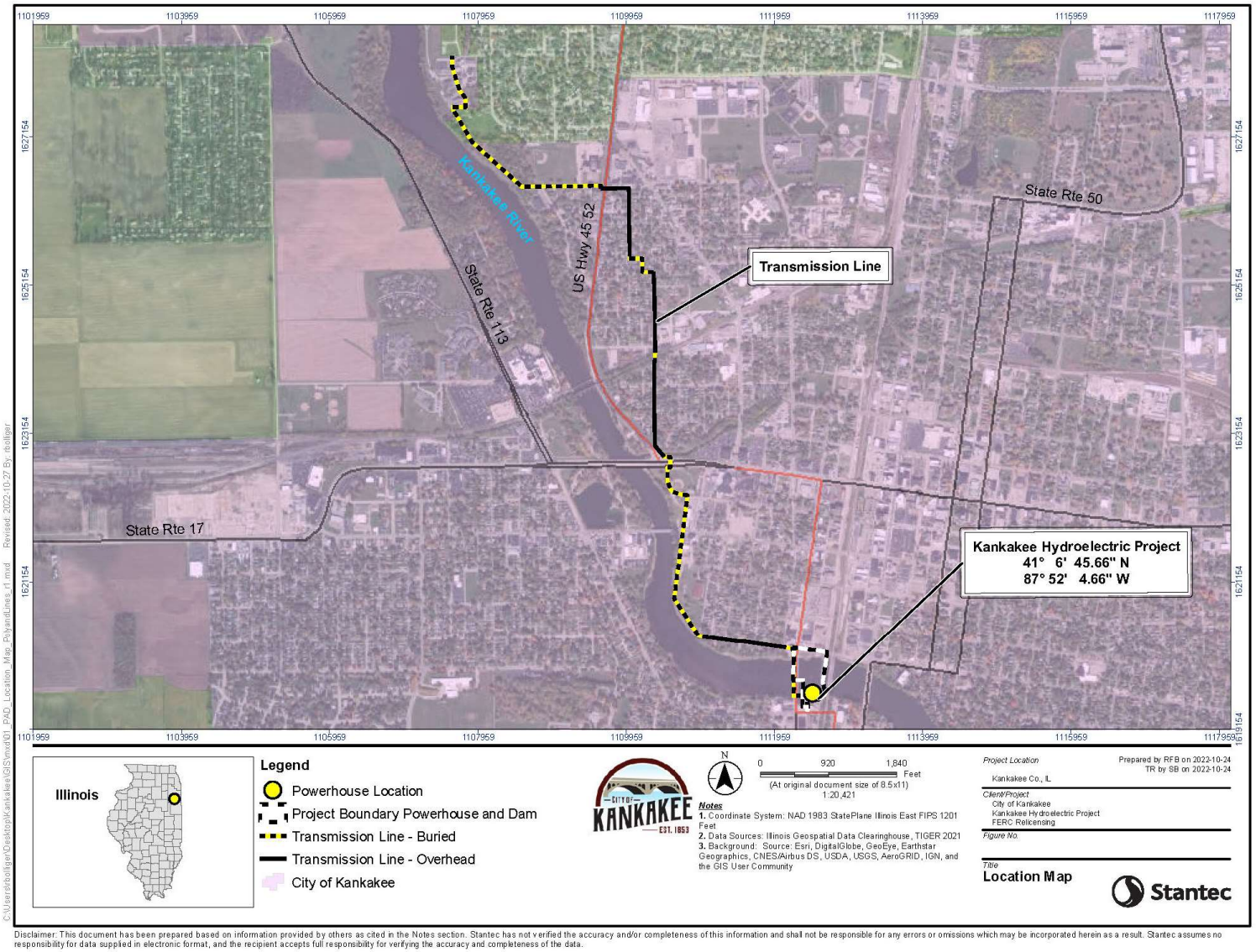

Figure 3.1-1. Project Location

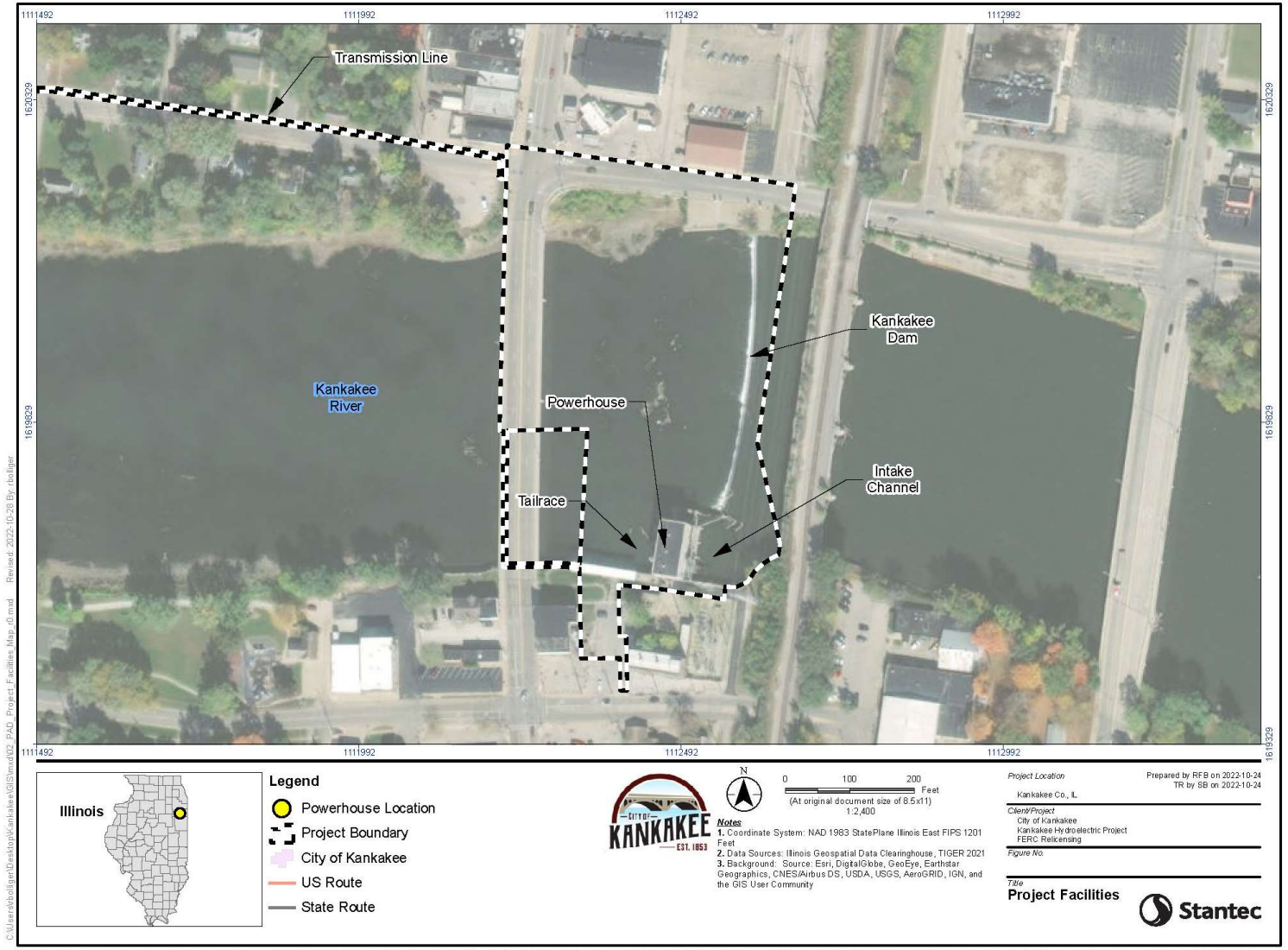

Figure 3.1-2. Project Facilities

3.2 PROJECT FACILITIES

The Project is located at Kankakee Dam, which is owned by the State of Illinois and leased to the City of Kankakee for hydropower purposes. The Kankakee Dam consists of 440-foot-long and ten-foot-high concrete dam topped by a two-foot-high inflatable rubber dam, an intake, and a tailrace connected to a concrete powerhouse. The Kankakee River drainage upstream from the Kankakee Dam site is approximately 2,640 square miles **(Figure 3.2-1).**

3.2.1 Existing Project Facilities and Features

The FERC-licensed Project consists of the dam, short intake and tailrace channels, a concrete powerhouse, generation leads and step-up transformer, and a single-circuit transmission line.

3.2.2 Water Conveyance Structures

The Project includes a 440-foot-long and ten-foot-high concrete dam topped by a two-foot-high inflatable rubber dam (installed 2004) with a steel plate fixed to the upstream face of the bladder. The inflated rubber dam is at elevation 594.87. The dam acts as an uncontrolled spillway during open river (flood) flow conditions.

The intake channel is approximately 100 feet wide and 100 feet long. This channel is flat-bottomed and approximately 10 feet deep during normal flow conditions. Two 5-foot-wide concrete vanes, one about 15 feet long and the other about 20 feet long, located about 6 feet apart, guide water from the main body of the river into the intake channel.

The tailrace channel is approximately 85 feet wide and 60 feet long. This channel has a sloping bottom and is approximately 3 to 10 feet deep during normal flow conditions Three, flared (each being approximately 15-foot at the downstream end), metal draft tubes discharge into the tailrace channel. Each draft tube is supported by a concrete pier that is 20 feet long and 2.5 feet wide.

Vertical concrete walls protect the intake and tailrace channels, upstream and downstream from the powerhouse.

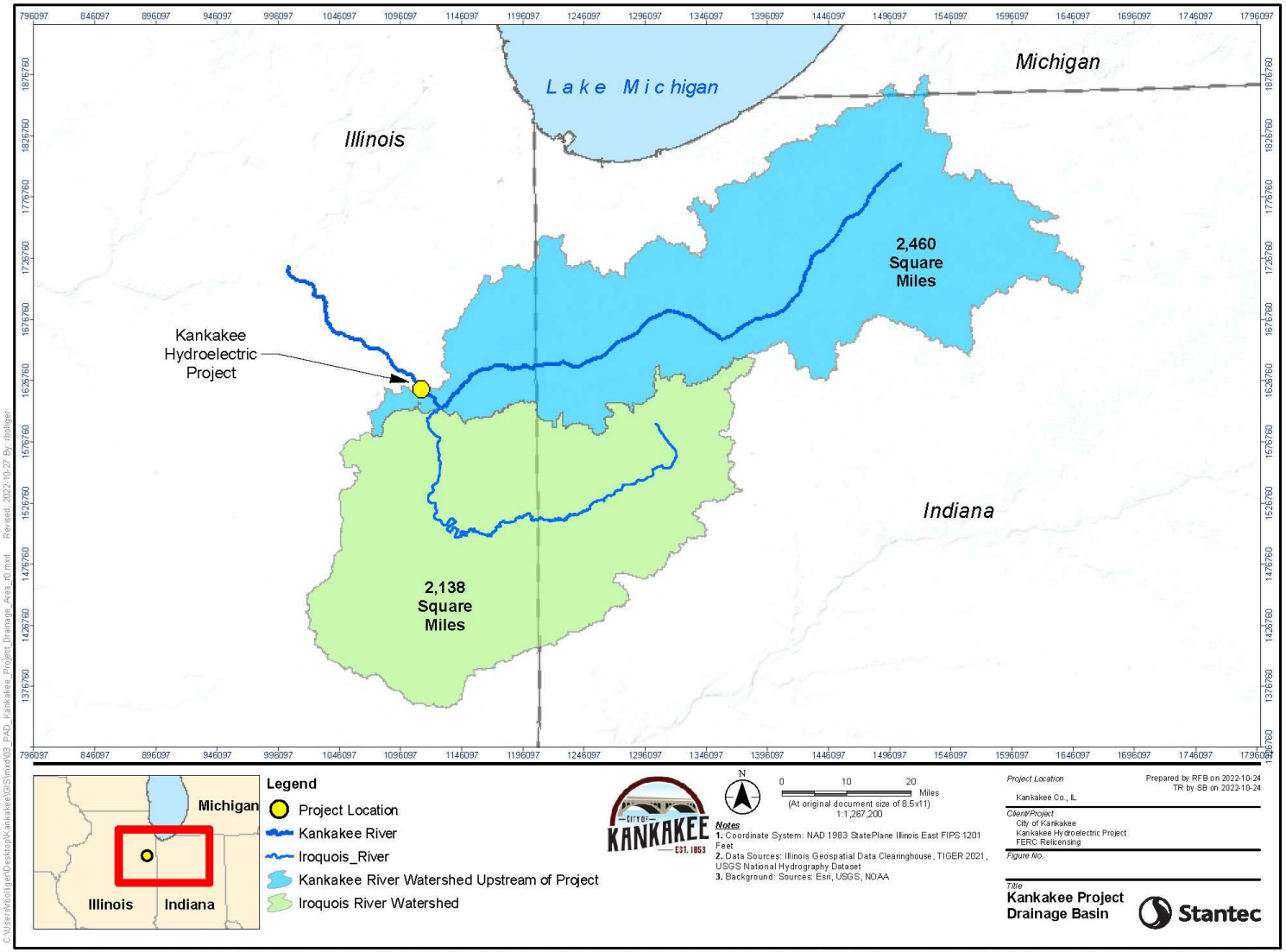

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Figure 3.2-1. Kankakee River and Iroquois River Drainage Areas Upstream from Kankakee Dam

3.2.3 Powerhouse

The existing concrete powerhouse enclosure is approximately 103 feet long and 40 feet wide.

The enclosure sits atop an old, concrete, hydroelectric powerhouse substructure. During the 1950s, the old hydroelectric powerhouse was abandoned, machinery removed, and superstructure razed. The four substructure turbine bays and draft tubes were filled with rubble from the demolition.

In 1984 the old powerhouse substructure was found to be sound and suitable for development of the new (existing) concrete powerhouse enclosure and related hydroelectric equipment. The concrete floor and subfloor were removed together with rubble from the bays and draft tubes, and accumulated sediment in the intake area. Three draft tubes were enlarged and extended into the tailrace area to improve turbine efficiency. The fourth and fifth draft tube bays were abandoned. Headgate bulkheads were patched and resurfaced. New stoplog slots, bar screens, and shut-off gates were installed. The generator and control room floor are at an elevation of 606.5 feet MSL, which is above the 500-year flood level.

A trash boom was installed at the intake entrance. A trashrack was installed at the upstream end of each intake. The center-to-center spacing on the trashrack bars is approximately four (4) inches.

The powerhouse contains three 400-kW slant-axis siphon turbine-generator units, each with siphon breaker, speed increaser, and an induction generator; for a total installed capacity of 1,200 kW. The powerhouse also contains 4.16 kV generator leads and a three-phase, 1.5 MVA, 4.16/12.5 kV step-up transformer.

The Kankakee Project turbine-generator units are currently non-operational. The Licensee is working to repair or replace these units in 2024 or 2025.

The minimum head difference required to operate the turbines is 4.8 feet. Key turbine and generator data for the Kankakee Hydroelectric Project is included in **Table 3.2-1**.

Table 3.2-1. Turbine and Generator Data

Turbines	
Number of Units	3
Type	Slant axis, semi-Kaplan siphon, with speed increaser
Design Head	10 ft
Rated Capacity	0.4 MW
Rated Speed	130 rpm (speed increaser input); 720 rpm (speed increaser output)
Minimum Hydraulic Capacity	300 cfs
Maximum Hydraulic Capacity	2,000 cfs
Generators	
Type	“Hydrolux” induction
Rated Capacity	0.4 MW
Phase	3
Voltage	4.16 kV
Frequency	60 Hz
Synchronous Speed	720 rpm

3.2.4 Transmission Line

The Project's single-circuit 12.5 kV transmission line extends 2.4 miles. The transmission line begins at the transformer adjacent to the powerhouse, crosses the Kankakee River in a conduit attached to the South McMullen Drive (Edward McBroom) Bridge and terminates at the KRMA WWTP located along the river downstream near West Brookmont Boulevard. Five segments of the transmission line (1.5-miles total, including the bridge crossing in a conduit) are located underground in existing rights-of-way, while the remaining four segments (0.9-mile total) are suspended aboveground on standard, 40-45-foot-tall, wooden poles. The transmission line right-of-way varies from 3 to 20 feet in width.

Underground segments of the existing transmission line include: West of Fifth Avenue and south of Station Street (including Legion Park, managed by Kankakee Valley Park District (KVPD)); North of Station Street, including the Court Street and railroad crossings; North of Park Drive and South of 735 North Ninth Avenue; and Gregg Street west of Kennedy Drive, including LaVasseur Park (KVPD), Helgeson Park (Village of Bradley), and the KRMA WWTP.

Overhead segments of the existing transmission line include West River Street between 295 West River Street and Legion Park; North of Court Street and south of the railroad, in the alleyway between Eight Avenue and Ninth Avenue; North of 735 North Ninth Avenue and west of Kennedy Drive, in the alleyway between Ninth Avenue and Tenth Avenue; and Gregg Street east of Kennedy Drive.

As part of FERC relicensing, the Licensee proposes to provide construct an additional short transmission line to also provide Project electricity directly to its Stone Street Wastewater Lift Station (which feeds the KRMA WWTP) to offset electrical use and associated pumping costs at this facility. A new 12.5 kV overhead transmission line (on 40 to 45-foot-tall wood poles that resemble other overhead portions of the Project transmission line) would tap into the existing line on the south side of Stone Street and run west along Stone Street for approximately 600 feet before terminating at a transformer in the existing Stone Street Wastewater Lift Station. This new transmission line would be added to the existing FERC Project boundary, as it would become part of the licensed facilities.

3.3 PROJECT OPERATION

The Project is licensed as run-of-river mode (in accordance with existing License Article 401) with releases made in coordination with IDNR. The Licensee operates of the inflatable rubber dam that sits atop the Kankakee Dam. This rubber dam, which is 24 inches high when fully inflated, allows the Licensee to vary the surface of the reservoir. The rubber dam is fully inflated during normal Project operation and a 500 cubic feet per second (cfs), or inflow, whichever is greater, flow maintained over the Kankakee Dam (in accordance with existing License Article 402) to protect fishery resources in the Kankakee River.

The Kankakee Project turbine-generator units are currently non-operational. The Licensee is working to repair or replace these units in 2024 or 2025.

Kankakee Hydroelectric Project operations are automated and attached to the City Environmental Services Utility Sewer Services SCADA control system. The Project powerhouse is visited by City staff once or twice per day. Station service is provided by the local utility (Commonwealth Edison). Headwater, tailwater, and flow gages are located in the powerhouse.

The minimum flow for operation of a single turbine-generator unit is 300 cfs. However, Article 402 of the existing FERC License requires the Licensee to release a minimum flow of 500 cfs, or inflow, whichever is less, from the project reservoir over the dam. The maximum flow for operation of the three turbine-generator units is 6,000 cfs, assuming the head differential is greater than or equal to 4.8 feet.

3.3.1 Generation and Outflow

The Project operates in a run-of-river mode in coordination with IDNR. Inflows to the Project are controlled by upstream flows.

As noted previously, the Kankakee Project turbine-generator units are currently non-operational. The Licensee is working to repair or replace these units in 2024 or 2025. No complete recent summary of monthly and annual generation is available for the Kankakee Hydroelectric Project. In a letter to the Commission dated May 19, 1993, regarding as-built modifications to the original license exhibits, the Licensee's engineer stated that the estimated electrical energy produced per year was 6,700 MWh. This estimate of production is similar to recent years when all units were operable.

Monthly and annual average outflows from the Kankakee Hydroelectric Project are described in **Table 4.3-1**. These flows are typically highest in late winter and early spring (February through May), and lowest in late summer and early fall (August and September)

3.3.2 Dependable Capacity

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 in late summer in the Project area. Under the current license, the Project's estimated dependable capacity is 400 kW. The flow corresponding to the estimated dependable capacity is 800 cfs.

3.4 CURRENT LICENSE REQUIREMENTS AND COMPLIANCE HISTORY

The Project was issued an original, 40-year license by the Commission on May 27, 1988. The current license expires on April 30, 2028. In accordance with FERC's regulations at 18 CFR §16.9(b), the Licensee must file an application for a new license with FERC no later than April 30, 2026.

As described in **Section 1.2**, on May 27, 1988, the Commission issued an order granting an original license to the City, to construct, operate, and maintain the 1.2 MW Kankakee Hydroelectric Project. Commercial operation of the Project commenced in 1991. On August 24, 1995, the Commission issued an order approving as-built exhibits for the Project. These exhibits reflected as-built conditions, which included changes in the number of generating units, capacity of the generating units, and location of the transmission line. A two-foot-high inflatable rubber dam with a steel plate fixed to the upstream face of the bladder was installed in 2004. This rubber dam replaced a series of old, wooden flashboards that regularly washed out during high-flow events.

3.4.1 Current License Requirements

Current FERC License requirements include:

- Article 401 requires the licensee to operate the project in a run-of-river mode.
- Article 402 requires the licensee to release a minimum flow of 500 cfs, or inflow, whichever is less, from the project reservoir over the dam.
- Article 403 requires the licensee to file an erosion control plan as it relates to construction activity at the project.
- Article 404 requires the licensee to file a visual character incompatibility minimization plan, as it relates to construction activity.
- Article 405 requires the licensee to develop the tailrace area for public access and recreation.
- Article 406 requires the licensee to comply with the Programmatic Agreement entered with the State Historic Preservation Officer.
- Article 407 allows the licensee certain types of land use without receiving prior permission from the Commission, as detailed in the article.
- Standard License Article 8 requires the licensee to coordinate the operation of the project, electrically and hydraulically, with other projects or power systems in such manner as the

Commission may direct in the interest of power and other beneficial public uses of water resources.

- Standard License Article 13 allows free public access to project waters and adjacent lands.
- Standard License Article 14 requires the licensee to take measures to prevent soil erosion, stream sedimentation, and any form of water or air pollution.

3.4.2 Compliance History

The Licensee has been and is currently in compliance with the FERC license requirements described above. The Licensee is also in compliance with FERC Dam Safety (Part 12) and Security requirements.

The most recent FERC Environmental Inspection occurred in June 2008, during which it was noted that there were no issues of noncompliance.

3.5 CURRENT NET INVESTMENT

The current net investment in the Kankakee Hydroelectric Project (through the end of 2022) is approximately $ 7.5 million. This value should not be interpreted as the fair market value of the Project.

3.6 POTENTIAL FOR NEW PROJECT FACILITIES

The Kankakee Project turbine-generator units are currently non-operational. The Licensee is working to repair or replace these units in 2024 or 2025.

As part of FERC relicensing, the Licensee also proposes to provide Project electricity to its Stone Street Wastewater Lift Station (which feeds the KRMA WWTP) to offset electrical use and associated pumping costs at this facility. A new 12.5 kV overhead transmission line (on 40 to 45-foot-tall wood poles that resemble other overhead portions of the Project transmission line) would tap into the existing line on the south side of Stone Street and run west along Stone Street for approximately 600 feet before terminating at a transformer in the existing Stone Street Wastewater Lift Station. This new transmission line will be added to the existing FERC Project boundary.

3.7 PURPA BENEFITS

The Licensee is not seeking benefits under Section 210 of the Public Utility Regulatory Policies Act (PURPA) of 1978 for qualifying hydroelectric small power production facilities in §292.203 of this chapter.

4.0 EXISTING ENVIRONMENT AND RESOURCE IMPACTS

4.1 GENERAL DESCRIPTION OF RIVER BASIN

The Kankakee Hydroelectric Project (Project) is in the western third of the Kankakee River Basin (**Figure 4.1-1**). The Kankakee River flows westward from Indiana into Illinois. The headwaters are near South Bend, Indiana, and the mouth is the confluence of the Kankakee with the Des Plaines River where those two rivers become the Illinois River. Of the 5,165 square miles in the Kankakee River drainage basin, 2,169 are in Illinois and 2,996 are in Indiana. The river has a total length of about 150 miles, with 59 miles in Illinois. The drainage area above the Kankakee Dam and hydroelectric project is approximately 2,460 square miles.

In work beginning in the late nineteenth century and essentially completed by 1918, almost all of the main channel of the Kankakee River in Indiana was channelized, that is, straightened. Today that channel is a man-made ditch, extending straight for many miles between small bends. In Indiana, all of the natural meanders were removed. In Illinois, most of the river remains a naturally meandering stream. (Illinois Department of Energy and Natural Resources (IDENR) 1981)

4.1.1 Major Land Use

Before channelization, much of the drainage area of the Kankakee River in Indiana was wetland — swamps and marshes — called the "Grand Marsh." The Grand Marsh encompassed approximately 400,000 acres and ranged from 3 to 5 miles in width with a water depth of from 1 to 4 feet for eight or nine months of the year. The marsh was only about 85 miles long, but the river course was about 250 miles in length with an average slope of 5 to 6 inches per mile. The nature of the marsh caused the Kankakee River to alter its course continuously, resulting in the formation of a variety of meanders, oxbow lakes, sloughs, and bayous.

In Indiana, the river system has been constructed and managed as an agricultural drainage project — successfully draining the wetlands and converting them into very productive agricultural land. The intent of the management has been based on the economics of agricultural production.

In Illinois, especially in Kankakee County, the river has been used as a scenic, cultural, and recreational resource. The reach between the state line and Momence is a naturally meandering stream with a sandy bottom, traversing an area of timber and relatively undisturbed wetlands, commonly called the "Momence Wetlands." (IDENR 1981)

Kankakee County's history is rooted in agriculture. In the early 1900s, prairie was converted to productive farmland through various drainage techniques. Kankakee River State Park protects over 4,000 waterfront acres in the northwestern portion of the County. It also provides major recreational opportunities.

In 2019, land use in Kankakee County, Illinois (**Table 4.1-1**) was primarily cultivated cropland (80.8 percent of total acres), followed by low intensity development (5.4 percent), deciduous forest (3.4 percent), and developed open space (2.4 percent). 2019 land use in Kankakee County is graphically depicted in **Figure 4.1-2**.

The City of Kankakee, which includes the Project area, is highly urbanized. Dominant land uses the Project vicinity include industrial, commercial, high density residential, and developed open space (parkland).

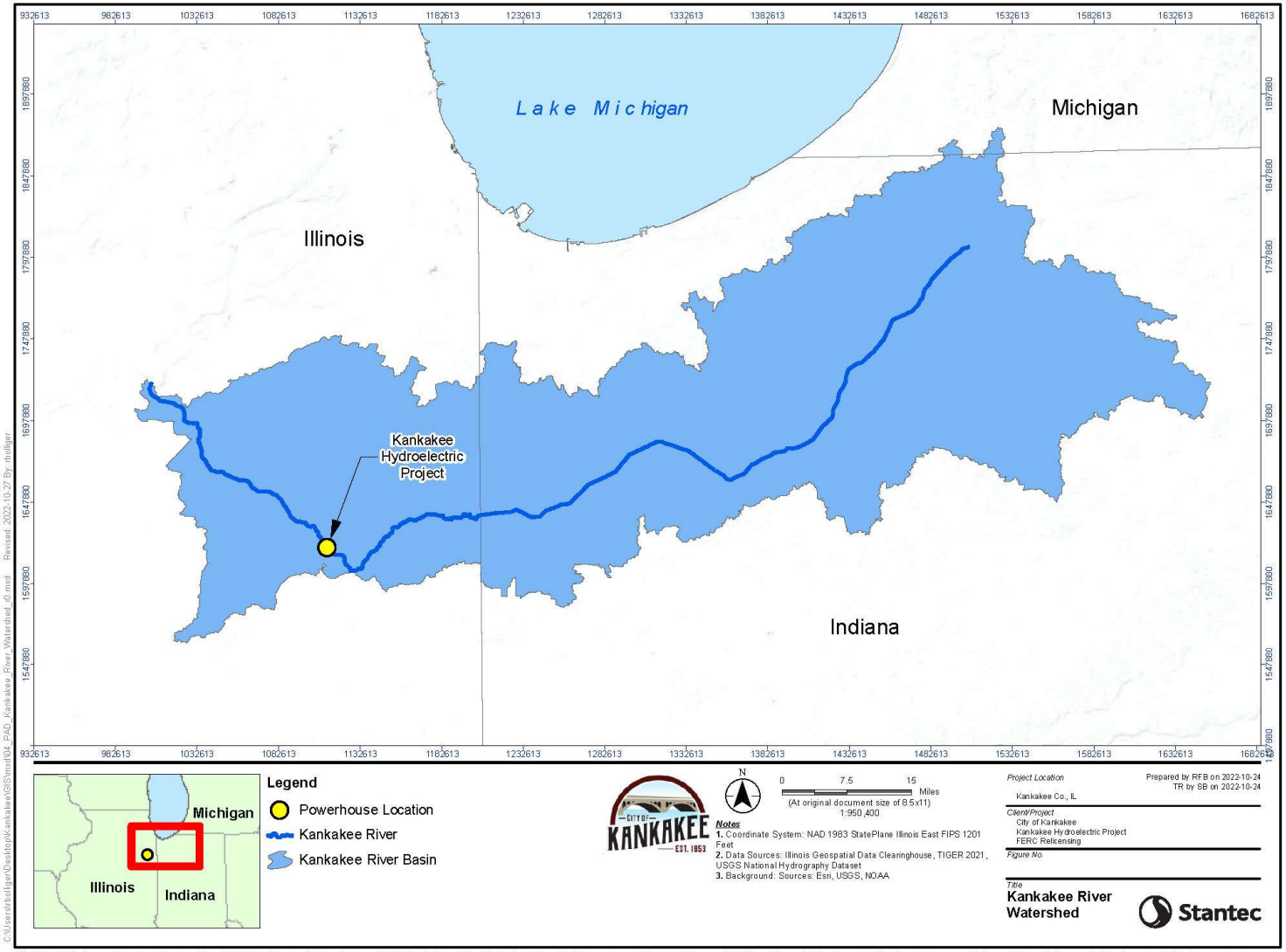

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Figure 4.1-1. Kankakee River Watershed

Table 4.1-1. Land Use in Kankakee County, Illinois

Land Use Category	Kankakee County, IL (% Land Use)
Open Water	0.7%
Developed, Open Space	2.4%
Developed, Low Intensity	5.4%
Developed, Medium Intensity	2.2%
Developed, High Intensity	0.7%
Barren Land (Rock/Sand/Clay)	0.2%
Deciduous Forest	3.4%
Evergreen Forest	0.0%
Mixed Forest	0.4%
Shrub/Scrub	0.1%
Grasslands/Herbaceous	0.7%
Pasture/Hay	1.7%
Cultivated Crops	80.8%
Woody Wetlands	0.9%
Emergent Herbaceous Wetlands	0.2%

Source: National Land Cover Database, 2019 (https://www.mrlc.gov/data)

4.1.2 Major Water Uses

The Kankakee River reach between the cities of Momence and Aroma Park is a natural stream, traversing an area of alternating bedrock and sandy bottom. Between Aroma Park and the city of Kankakee, a deep-water area called Six Mile Pool (actually, 4.7 miles long) was formed by the construction of the Project's Kankakee dam. The deeper water has long been used for recreational boating, as a water supply resource, and as a receiving water for waste assimilation. Homes have been built in the surrounding area and along much of the shoreline. All of the river in Kankakee County is noted for high water quality, excellent sport fishing, and scenic beauty. (IDENR 1981)

4.1.3 Locks and Dams in the Basin

No locks or dams are located in the Indiana portion of the Kankakee River Basin. The main channel of the Kankakee River in Indiana was channelized, and today is a man-made ditch, extending straight for many miles between small bends. In Illinois, a very small dam exists at Momence, a larger (Project) dam at Kankakee, and an overflow dam at Wilmington (**Figure 4.1-3**). (IDENR 1981)

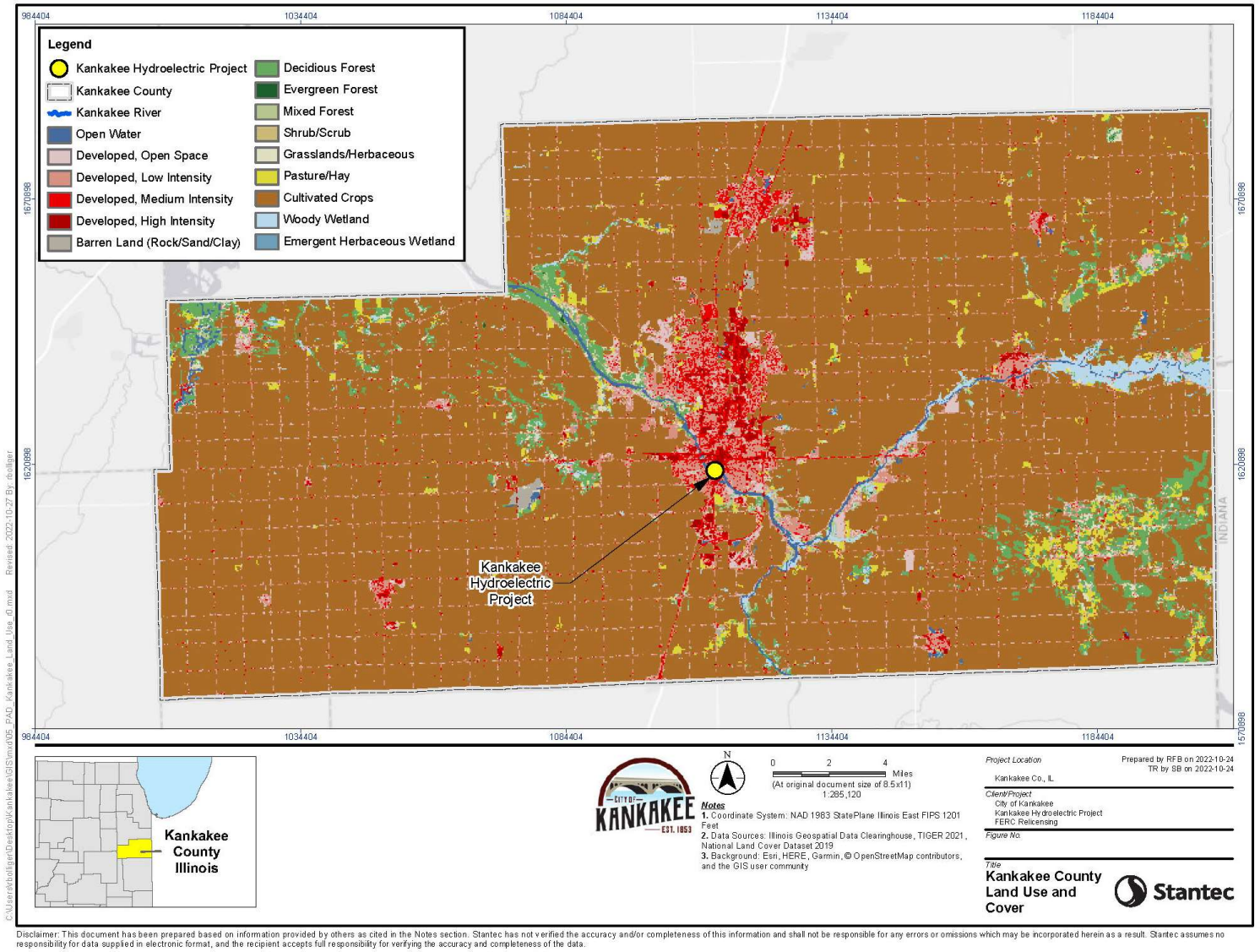

Figure 4.1-2. Land Use and Cover in Kankakee County, Illinois

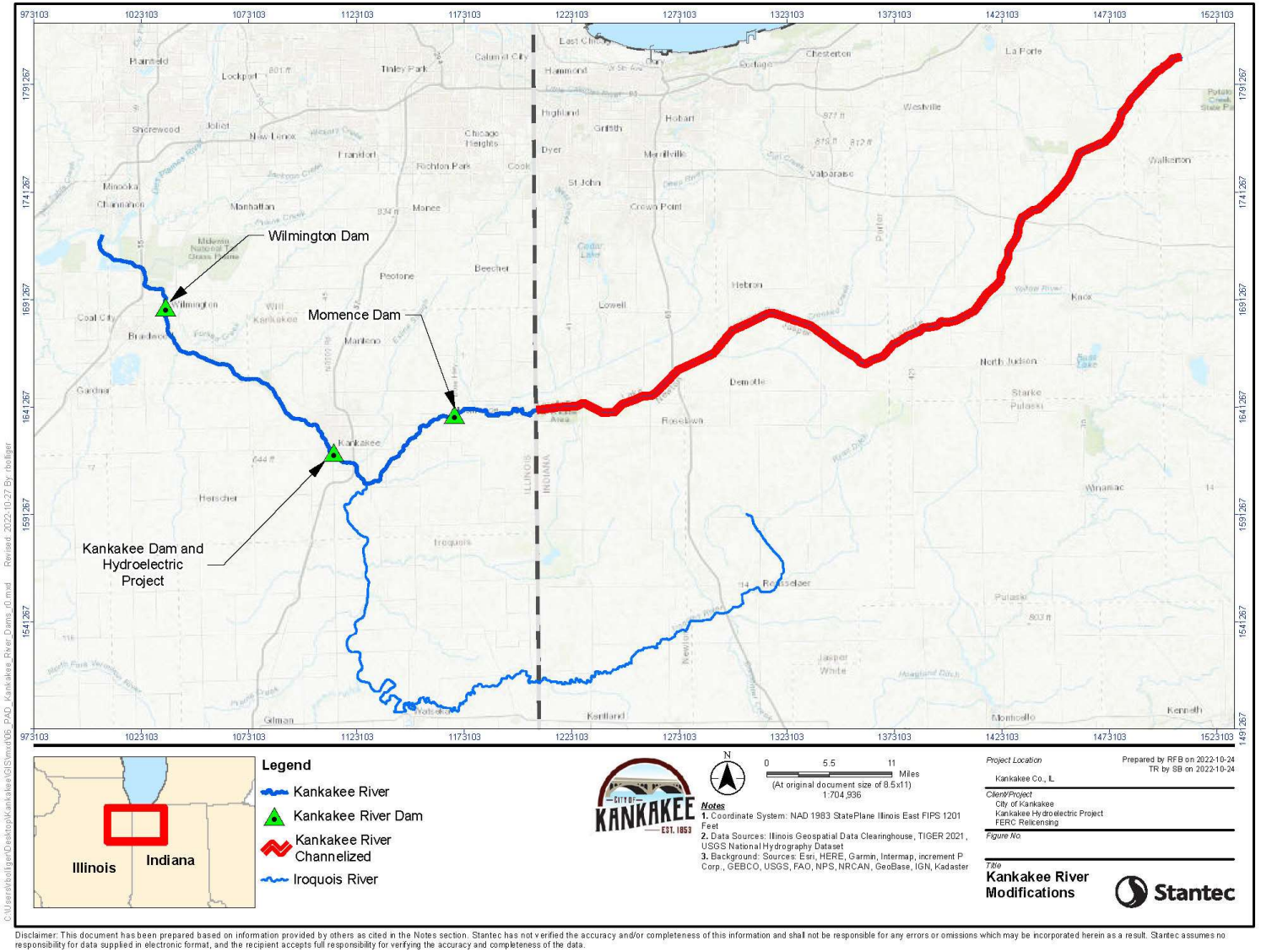

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Figure 4.1-3. Kankakee River Dams and Channelization

4.1.4 Tributary Rivers and Streams

A major tributary to the Kankakee River in Illinois is the Iroquois River, which joins the Kankakee just below Aroma Park. Most of the Iroquois River drainage basin is in Indiana. Singleton Ditch, a channelized tributary in Indiana, joins the Kankakee just above Illiana Heights in Illinois (IDENR 1981). Other tributaries to the Kankakee River include Trim Creek, Spring Creek, Baker Creek/Exline Slough, Rock Creek, Horse Creek, Forked Creek and Prairie Creek. (IDNR 2017)

4.1.5 Climate

Illinois' climate is typically continental with cold winters, warm summers, and frequent short fluctuations in temperature, humidity, cloudiness, and wind direction. (ISWS undated)

The Kankakee Hydroelectric Project is located in Kankakee County. Between 1971 and 2000 the average Kankakee County winter temperature was 25.6 degrees F, and the average daily winter minimum temperature was 16.8 degrees. The lowest temperature, which occurred at Kankakee on January 20, 1985, was -29 degrees. The average summer temperature was 72.4 degrees, and the average daily summer maximum temperature was 83.8 degrees. The highest temperature, which occurred at Kankakee on August 17, 1988, was 107 degrees. The average annual total precipitation was 38.57 inches. Of this total, about 23.67 inches, or about 61 percent, usually fell in April through September. The heaviest 1-day rainfall was 5.35 inches at Kankakee on June 26, 1978. Thunderstorms occurred on about 38 days each year, and most occur between April and September. The average seasonal snowfall was 26.1 inches. The greatest snow depth on record was 30 inches recorded on February 12, 1979. On the average, 41 days per year had at least 1 inch of snow on the ground. The heaviest 1-day snowfall was 13 inches on January 13, 1979. (NRCS undated)

4.2 GEOLOGY AND SOILS

4.2.1 Existing Environment

The geologic materials of the Kankakee River Basin consist of a mantle of glacial deposits overlying Paleozoic bedrock. In Illinois, most of the bedrock in the basin is Silurian age dolomite, and in Indiana much of the bedrock is Devonian age shale. (IDENR 1981)

The geologic events responsible for the present topography and surface materials took place during the melting of the last continental glaciers. That melting occurred during the approximate interval from 16,000 to 13,000 years ago (known to geologists as the latter portion of the Woodfordian Substage of the Wisconsinan Stage). During this period, the retreating glacial lobes constructed numerous moraines including the Valparaiso moraines located along the northern portion of the Kankakee basin. (IDENR 1981)

During the forming of the Valparaiso moraines, meltwater from three glacial lobes (the Lake Michigan, Saginaw, and Erie lobes) drained into the Kankakee valley and flooded it because of a constriction by the Marseilles moraines in the Illinois valley to the west. At peak flow, water spread widely over the uplands resulting in numerous glacial lakes (Lake Wauponsee, Lake Watseka, Lake Ottawa, and Lake Pontiac which drained soon after the glaciers melted). (IDENR 1981)

The flood also deposited thick sand in a wide belt along the Kankakee resulting in the large tract of sandy sediments extending from west of the city of Kankakee to South Bend in Indiana. This extensive sandy deposit is the primary source area for the sediments now residing in the Kankakee River. (IDENR 1981)

When a gap in the Marseilles moraines was eventually eroded, the base level of the Kankakee Flood lowered considerably. Water flow became more concentrated in the central Kankakee River valley, and the river scoured broad areas down to the bedrock surface. Bedrock at the surface is located downriver from the city of Kankakee. The erosive force of the currents deposited numerous bars of angular, bouldery rubble, as well as relatively flat-lying bouldery material. (IDENR 1981)

The dune sand was derived directly from outwash sands deposited by the Kankakee Flood, which transported sediment from the erosion of local glacial deposits and bedrock as well as outwash from the three retreating glacial lobes. The end result of these processes was deposition of sand. (IDENR 1981)

The final episode shaping the character of the geological materials in the river basin is the modern deposition of silt, sand, and gravel adjacent to the Kankakee River and its tributaries. In Illinois the material is referred to as Cahokia Alluvium. It consists of materials transported down the valley and deposited in floodplains during intervals of flooding and also includes sediments deposited directly by tributary streams. The alluvium generally rests conformably on bedrock and glacial deposits. Along the Kankakee River the material is primarily medium sand that often occurs on top of the sandy and gravelly Kankakee Flood materials. (IDENR 1981)

The bedrock of the Kankakee Hydroelectric Project area is Niagara Dolomite of the Silurian Age. It is found at a relatively shallow depth (less than 30 feet below ground surface) in the vicinity of the Kankakee Dam. The upper portion of this dolomite contains considerable jointing, fracturing, and solution channels. (City of Kankakee 1983)

The majority of Kankakee County, including the Project area, is located in the Northern Illinois and Indiana Heavy Till Plain Major Land Resource Area (MLRA). The southeast corner of the County is in the Southern Michigan and Northern Indiana Drift Plain. (NRCS undated)

The county is in the Central Lowland Physiographic Province. The majority of the county, including the Project area, is made up of the Kankakee Plain of the Till Plains section. The northeastern part of the county is in the Wheaton Morainal Country of the Great Lakes section, and the southwestern part is in the Bloomington Ridged Plain of the Till Plains section. (NRCS undated)

About 94 percent of the county, including the Project area, is nearly level to gently sloping. The rest is rolling to steep and is in morainal areas or on the prominent sandhills. The highest elevation, about 740 feet above sea level, is in the northeastern part of the county. The lowest elevation, about 550 feet, is at the point where the Kankakee River leaves the county at the Will County line. (NRCS undated)

Several moraines run through the county. From east to west, they are the West Chicago Moraine, the Manhattan Moraine, the Rockdale Moraine, the St. Anne Moraine, and the Marseilles Morainic System.

The underlying bedrock in the survey area has been greatly modified by glaciation. The depth to bedrock ranges from 0 to 100 feet. Limestone outcrops are common in the Kankakee River Valley and in the adjacent glacial torrent area. The torrent area was created when a huge torrential river fed by glacial meltwater removed the soil material covering the bedrock and piled chunks of loose limestone into island-like areas of rubble. (NRCS undated)

Most of Kankakee County, including the Project area, is drained by the Kankakee River and its tributaries. A small area, along the western side of the county, is drained by the Mazon River. Hundreds of miles of open drainage ditches have been constructed to bring large acreages of the county under cultivation. (NRCS undated)

There are no known faults in the vicinity of the Project. The nearest seismic source zone is the Wabash Valley, Indiana, which is about 125 miles away. The Project is in Seismic Zone II, where a low level of seismic activity is expected.

Soils in the Project powerhouse intake and tailrace vicinity are Whalan Silt Loam. These soils are on 2-4 percent slopes, well drained, non-hydric, and have a slow infiltration rate when thoroughly wet.

Soils within the existing FERC Project boundary are shown on **Figure 4.2-1** and summarized in **Table 4.2-1**. Soils within the FERC Project boundary (aka, Area of Interest or AOI) are dominated by silt loams. The most prevalent soil types are Rockton Silt Loam and Whalan Silt Loam, which occupy 18.0 and 13.7 percent of the AOI, respectively. Approximately 59 percent of the AOI is classified as water. Over 40 percent of the AOI has a designated drainage class of Well Drained and approximately 2 percent of the area is Somewhat Excessively Drained. Rockton Silt Loam (18.0 percent of the AOI) is

predominantly hydric (Hydric Rating 4), while the remainder of soils in the AOI is non-hydric. Nearly 40 percent of the AOI has a hydrologic soil classification indicating slow or very slow infiltration rates, while about 2 percent has a moderate infiltration rate.

While steeply sloping, the Kankakee River shoreline in the Project area is lined with concrete walls and/or stone riprap to protect it from erosion. No areas of soil erosion or instability are present in Project area portions of the Kankakee River shoreline.

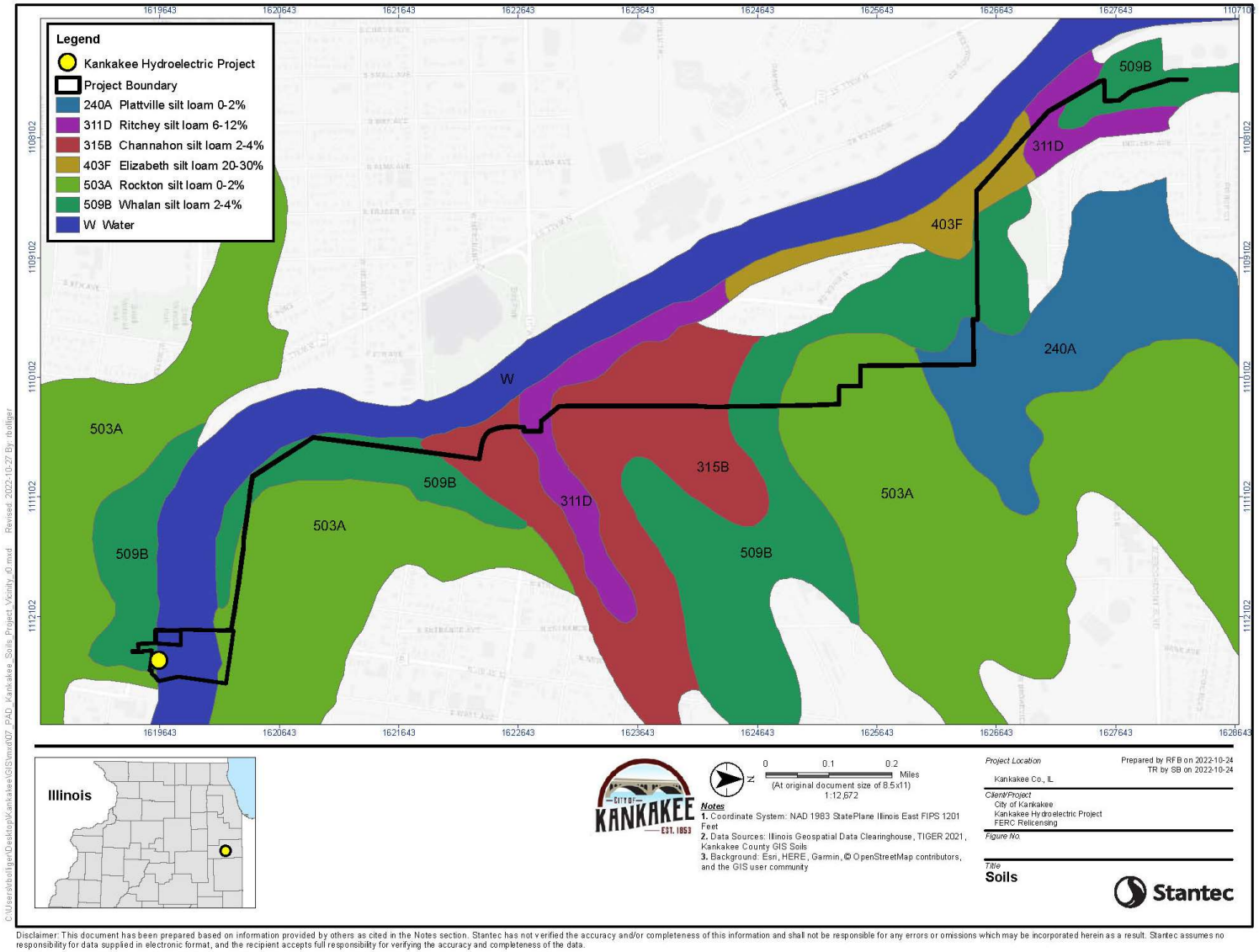

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Figure 4.2-1. Mapped Soils within Kankakee FERC Project Boundary

Table 4.2-1. Soil Summary for Areas within Kankakee FERC Project Boundary (Area of Interest, AOI)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI	State	Drainage Class	Hydric Rating	Hydrologic Soil Group
315B	Channahon silt loam, 2 to 4 percent slopes	0.334	4.4%	IL	WD	0	D
403F	Elizabeth silt loam, 20 to 30 percent slopes	0.123	1.6%	IL	SED	0	D
240A	Plattville silt loam, 0 to 2 percent slopes	0.118	1.6%	IL	WD	0	B
311D	Ritchey silt loam, 6 to 12 percent slopes	0.130	1.7%	IL	WD	0	D
503A	Rockton silt loam, 0 to 2 percent slopes	1.354	18.0%	IL	WD	4	C
509B	Whalan silt loam, 2 to 4 percent slopes	1.030	13.7%	IL	WD	0	C
W	Water	4.431	58.9%	IL	NA	0	NA

Drainage Class: *WD (Well Drained), SED (Somewhat Excessively Drained), NA (Not Applicable)*

Hydrologic Soil Group: *A (High infiltration rate)*

B (Moderate infiltration rate)

C (Slow infiltration rate when thoroughly wet.)

D (Very slow infiltration rate when thoroughly wet.)

4.2.2 Resource Impacts

The Kankakee Hydroelectric Project is operated in a run-of-river mode with releases coordinated with the IDNR in accordance with the original FERC License. The Kankakee River shoreline in the Project vicinity is lined with concrete walls and/or stone riprap to protect it from erosion. No areas of shoreline erosion or instability are apparent. Similarly, no known areas of erosion have been noted during transmission line operations and maintenance activities.

Small amounts of Kankakee River sediment, logs, and debris are occasionally removed from the Project trash racks using a trash rake. The materials are collected, removed from site, and legally disposed of in accordance with applicable state and federal regulations. The Licensee proposes to continue the aforementioned trash and debris handling during the term of the next license.

The Licensee proposes to repair or replace existing turbine-generator equipment. This work will be performed in the powerhouse. It will not require ground disturbance.

The Licensee also proposes to provide Project electricity to its Stone Street Wastewater Lift Station to offset electrical use and associated pumping costs at this facility. A new 12.5 kV overhead transmission line (on 40 to 45-foot-tall wood poles that resemble other overhead portions of the Project transmission line) would tap into the existing line on the south side of Stone Street and run west along Stone Street for approximately 600 feet before terminating at a transformer in the existing Stone Street Wastewater Lift Station. These areas have already been heavily disturbed by residential and industrial development. Ground disturbance will be limited to digging holes for transmission line poles.

Consistent with Article 403 of the existing FERC license, the Licensee proposes to file an erosion control plan as it relates to construction activity at the project.

4.3 WATER RESOURCES

4.3.1 Existing Environment

4.3.1.1 Water Quantity and Use

The Kankakee River drains an area of 5,165 square miles, running for a total of 150 miles from its origin near South Bend Indiana to its confluence with the Des Plaines River near Wilmington, Illinois. In Illinois, the river is 59 miles in length, with a drainage area of 2,169 square miles, encompassing nearly all of Kankakee County. (IDNR 2017)

The Kankakee River Hydroelectric Project is located at Kankakee Dam on the Kankakee River (river mile 124 downstream of its headwaters near South Bend, Indiana) in the City of Kankakee in Kankakee County, Illinois. The Project is operated in a run-of-river mode with releases coordinated with IDNR in accordance with the original FERC License.

Monthly and annual average Kankakee River flows at Kankakee Dam are listed in **Table 4.3-1**. These flows, based on flow data from the US Geological Survey (USGS) gages near Momence (05520500, Kankakee River) and Chebanse (05526000, Iroquois River) are typically highest in late winter and early spring (February through April), and lowest in late summer and early fall (August through October).

Table 4.3-1. Kankakee Dam Monthly and Annual Average River Flows (cfs) (2017-2021, Data from combined daily mean flow at Kankakee River Momence and Iroquois River Chebanse gages)

Month	2017	2018	2019	2020	2021	Monthly Average
January	8,595	3,637	6,672	9,156	1,695	5,951
February	4,985	12,897	9,739	6,429	1,296	7,069
March	4,520	10,299	6,561	7,237	5,158	6,755
April	9,015	6,083	7,969	4,779	3,022	6,174
May	10,011	3,680	13,243	11,610	6,304	8,970
June	6,044	4,811	8,084	4,356	5,257	5,710
July	4,726	1,768	5,269	2,937	7,212	4,382
August	2,324	1,072	1,469	1,015	1,748	1,526
September	1,123	1,159	1,721	874	1,084	1,192
October	3,120	2,035	3,580	848	6,585	3,234
November	5,990	3,607	4,370	924	5,407	4,060
December	2,506	5,497	3,321	1,254	4,158	3,347
Annual Average	5,247	4,712	6,000	4,285	4,077	4,864

Annual (**Figure 4.3-1**) and monthly (**Figure 4.3-2**) flow duration curves have been developed for the Kankakee River at Kankakee Dam using flow data from the USGS gages near Momence and Wilmington. The following presents the annual flow duration curve based on mean daily discharge.

Monthly and annual average Kankakee River flows at Kankakee Dam are listed in **Table 4.3-1**. These flows are typically highest in May and lowest in September (August through October).

Modelled daily flow data are provided in **Table 4.3-2**. Average modelled flows are highest in late winter and early spring (February through April), and lowest in late summer and early fall (August through October).

Table 4.3-2. Flow Data at Kankakee Dam, Daily Average by Month (1923-2022)

Month	Minimum (cfs)	90% Exceedance (cfs)	Average (cfs)	10% Exceedance (cfs)	Maximum (cfs)
January	440	989	4,543	9,960	36,540
February	480	1,160	5,311	10,790	39,600
March	570	2,250	6,565	11,918	41,800
April	1,340	2,311	6,653	12,383	26,420
May	810	2,010	5,876	11,170	32,250
June	534	1,337	4,737	10,292	30,400
July	346	889	3,025	6,090	30,620
August	276	692	1,687	3,140	17,610
September	368	605	1,724	3,260	27,000
October	430	664	2,099	4,537	28,410
November	460	811	2,711	5,680	23,820
December	475	983	3,761	7,984	32,000
Annual	276	815	4,046	9,200	41,800

Annual (**Figure 4.3-1**) and monthly (**Figure 4.3-2**) flow duration curves have been developed for the Kankakee River at Kankakee Dam, using flow data from USGS gages near Momence and Chebanse, Illinois. The following presents the annual flow duration curve based on mean daily discharge.

Figure 4.3-1. Annual Flow Duration Curve, Kankakee Dam, 1923 through 2022 (Kankakee River Momence plus Iroquois River Chebanse gages)

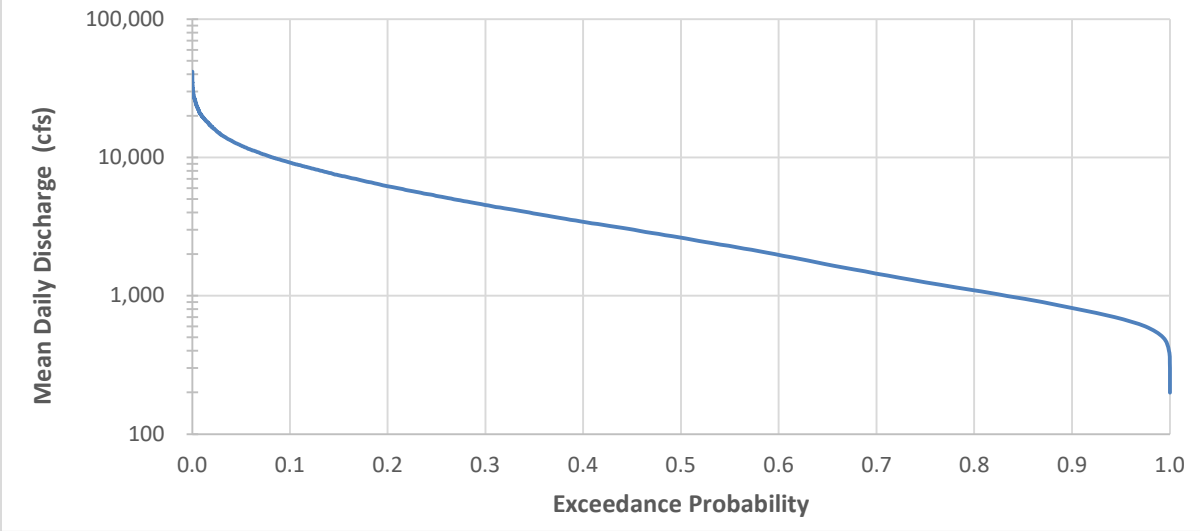
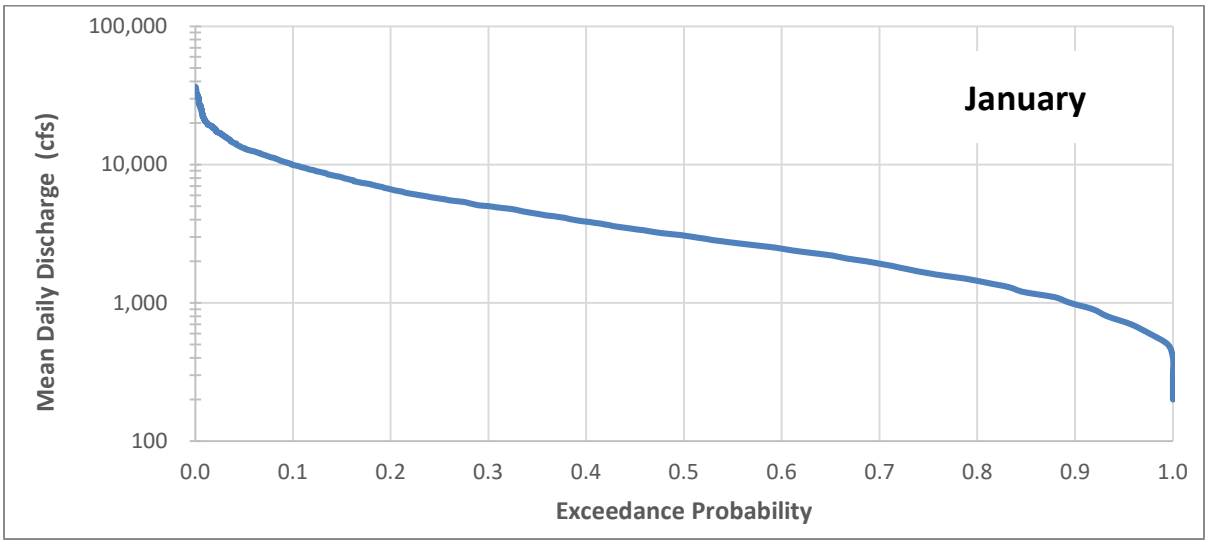
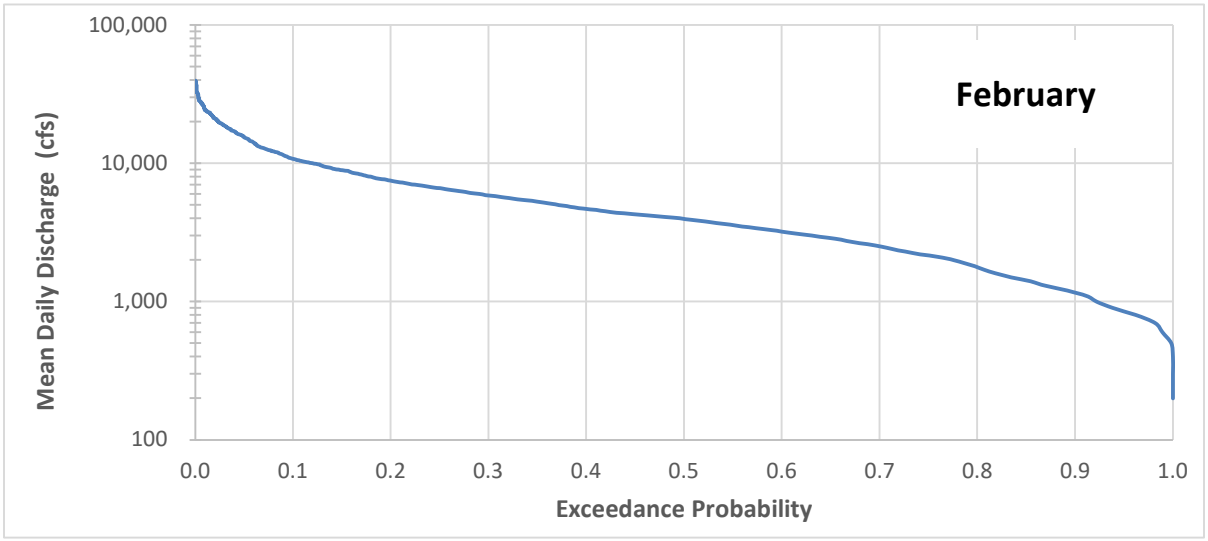


Figure 4.3-2. Monthly Flow Duration Curves, Kankakee Dam, 1923 through 2022 (Kankakee River Momence plus Iroquois River Chebanse gages)





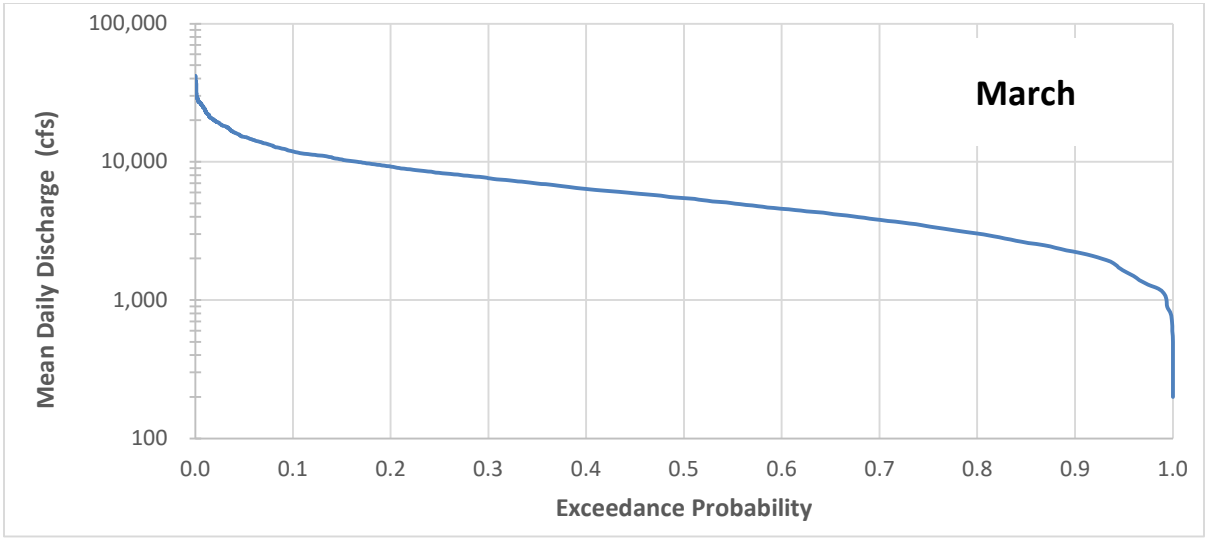
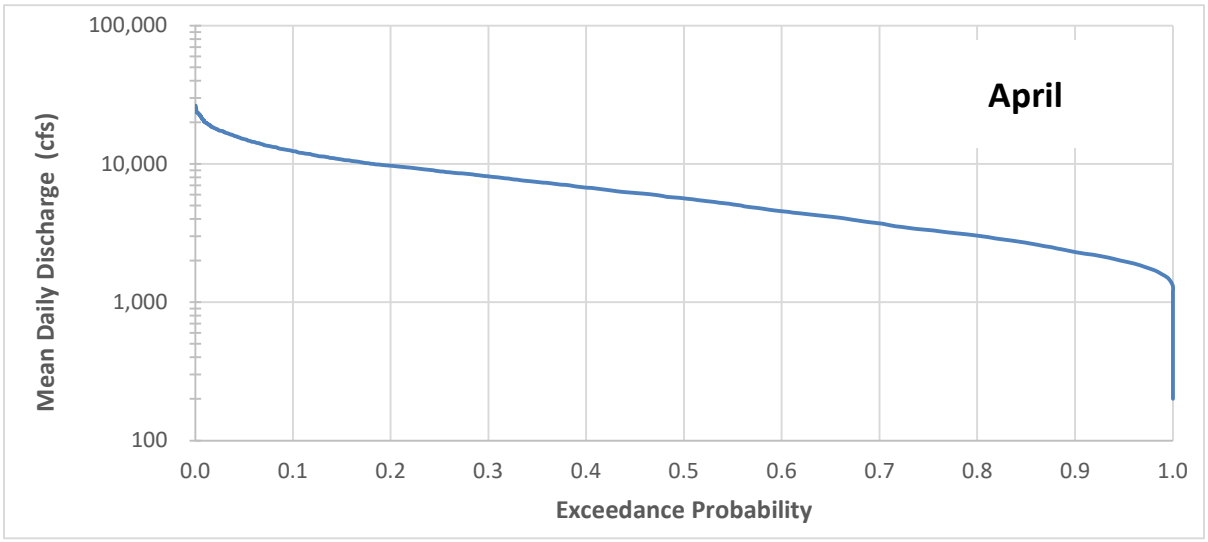
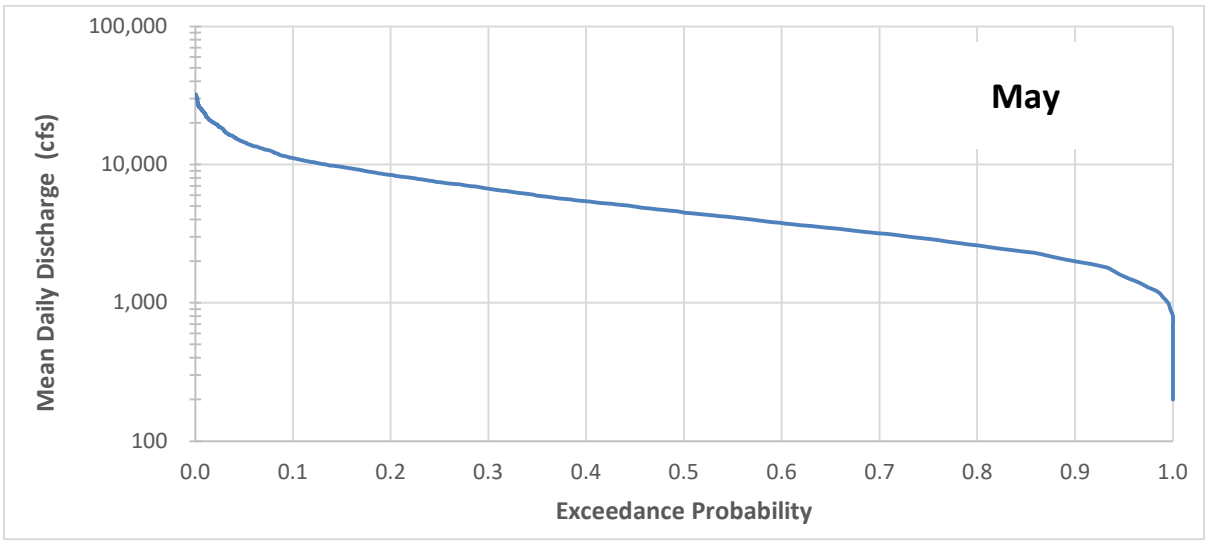


Figure 4.3-2. (Cont.)





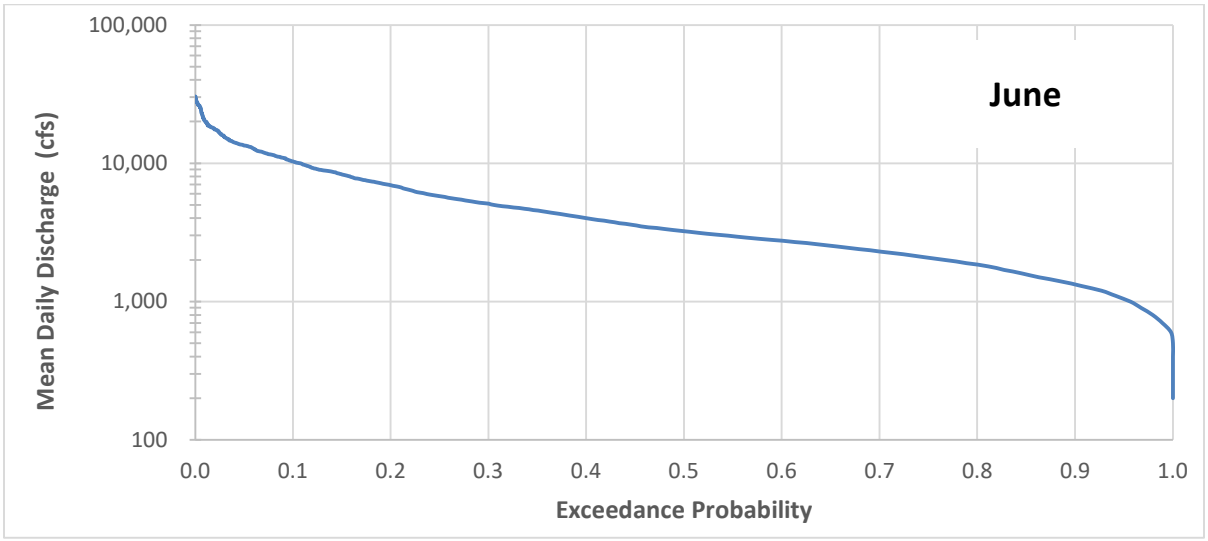
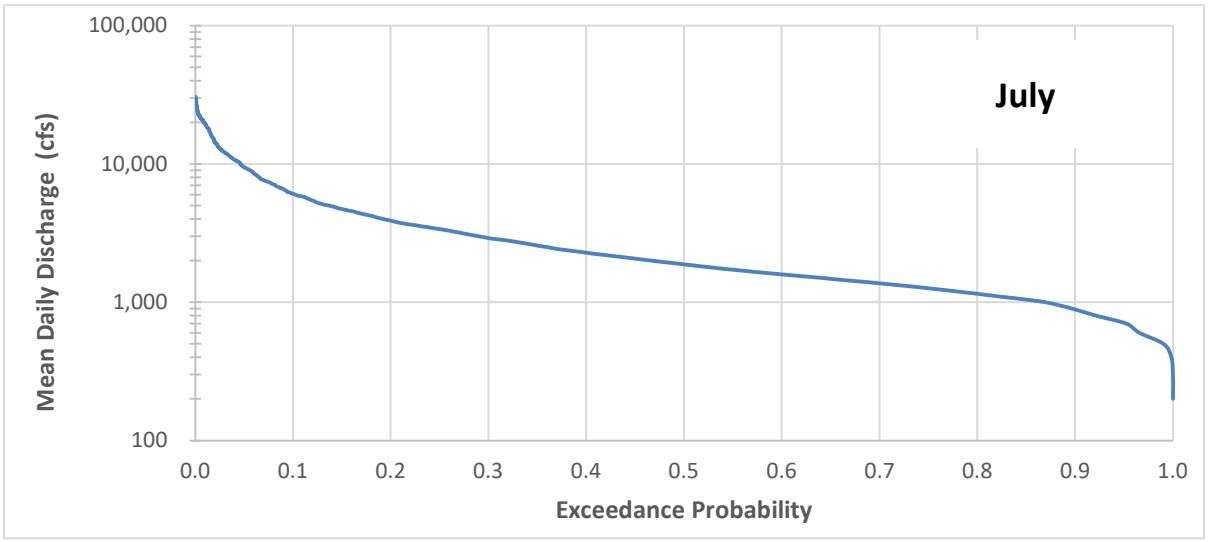
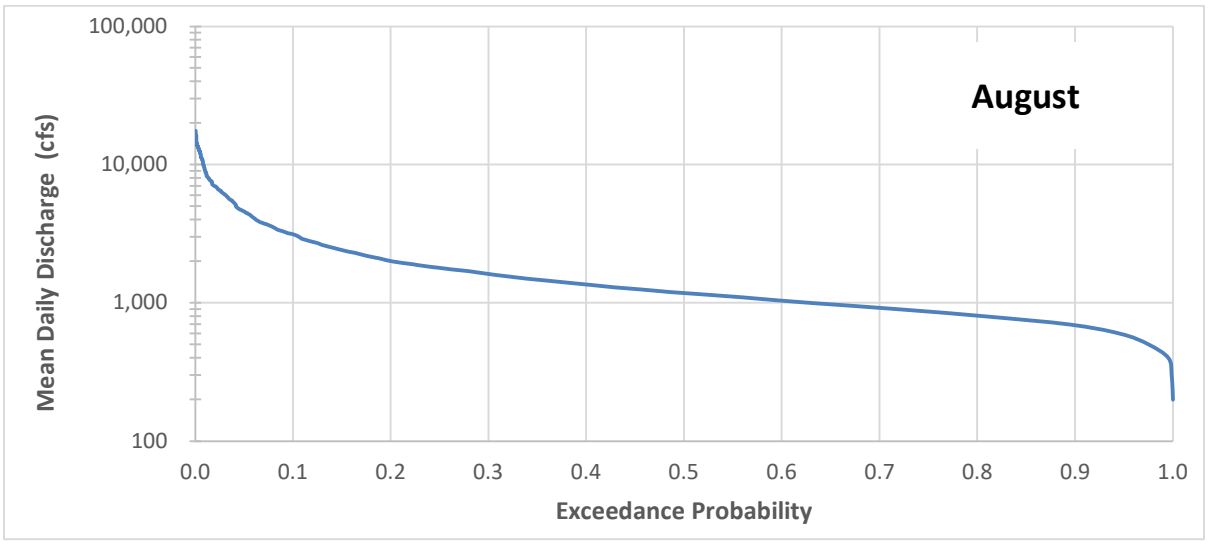
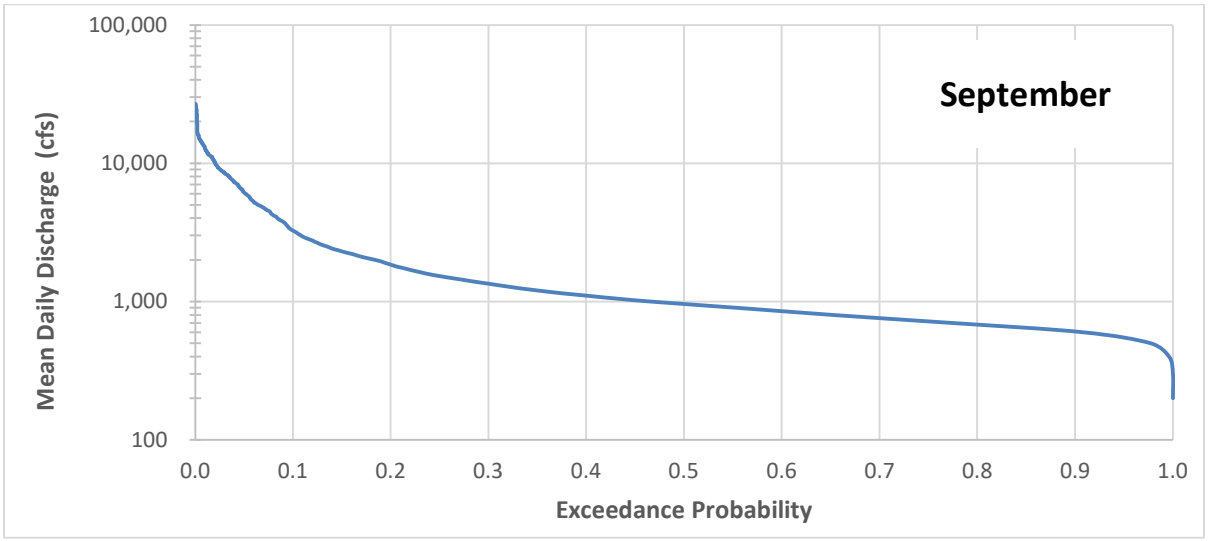


Figure 4.3-2. (Cont.)







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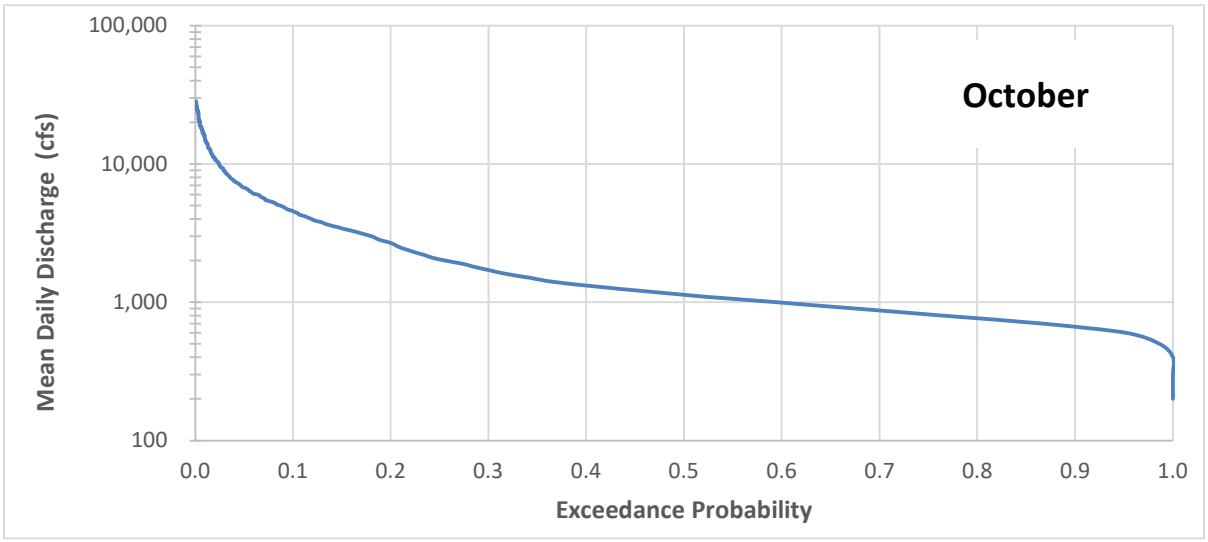
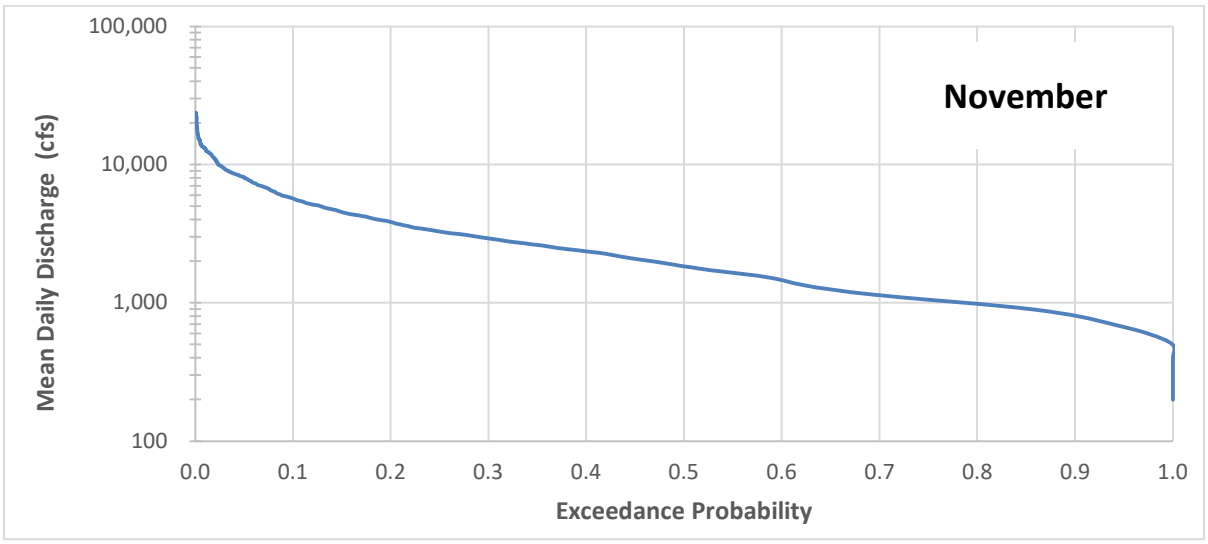
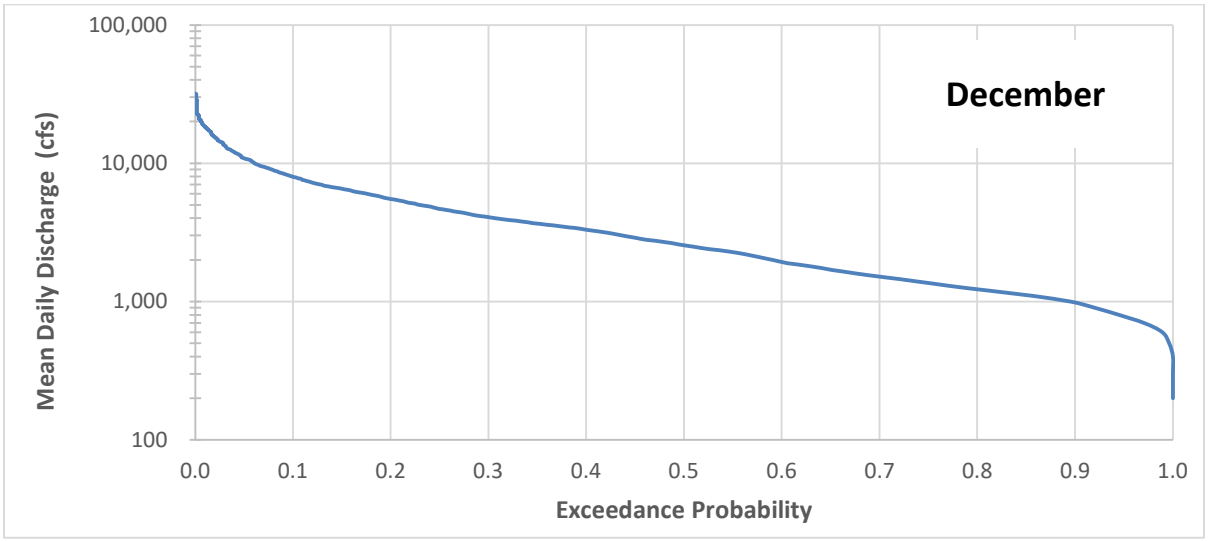






In accordance with existing License Article 401, the Project is operated the project in a run-of-river mode. In addition, the Project is operated in coordination with IDNR.

In accordance with existing License 402, the Project releases a minimum flow of 500 cfs, or inflow, whichever is less, from the project reservoir to the river below.

Municipal, industrial, or other point discharges to surface waters in Illinois must obtain a National Pollutant Discharge Elimination System (NPDES) permit from the Illinois Environmental Protection Agency (IEPA). NPDES permits regulate wastewater discharges by limiting the quantities of pollutants to be discharged and imposing monitoring requirements and other conditions. There are currently two NPDES permitted facilities on the Kankakee River in the vicinity of the Kankakee River Hydroelectric Project:

- Aqua Illinois – Kankakee (IL0001601); 1 outfall (associated with a public drinking water treatment plant) located approximately one mile upstream from the Kankakee Hydroelectric Project
- Kankakee River Metropolitan Agency (IL0021784); 2 outfalls (associated with wastewater treatment plant) located approximately two miles downstream from the Kankakee Hydroelectric Project

Aqua Illinois – Kankakee has a public water supply intake (IL0915030) on the Kankakee River approximately one mile upstream from the Kankakee Hydroelectric Project.

States in the Eastern United States, including Illinois, follow the riparian doctrine for surface water. Riparians are those who own property along waterways, which gives them certain rights, including the right to use water. This use right allows riparians to use the water abutting their property as long as the use is reasonable and does not affect other riparians. This principle is known as the reasonable use doctrine. Essentially, under reasonable use, there is very little monitoring or governmental control over how much water a riparian owner is using until there is a conflict with other riparian users. There are no proposed Kankakee River Water Rights or Water Rights applicants in the Kankakee Project vicinity.

4.3.1.2 Water Quality

4.3.1.2.1 Designated Uses and Criteria to Protect These Uses

As described by IDNR (2021), the Kankakee River is one the highest quality streams in the State, offering excellent sportfishing and recreational opportunities.

In 17 Illinois Administrative Code, Chapter I, Section 3704, Illinois public waters, also known as Illinois Public Bodies of Water, are generally defined as all lakes, rivers, streams, and waterways that are or were navigable, are open or dedicated to public use and include all bayous, sloughs, backwaters, and submerged lands connected by water to the main channel or body of water during normal flows or stages. The public waters of Illinois include the Kankakee River (the river mouth to Illinois-Indiana state border). (IEPA and Indiana Department of Environmental Management (IDEM) 2009)

The State of Illinois typically requires protected minimum flows for public waters of Illinois, aiming to provide instream water to aquatic ecosystems. When a minimum flow is specified, water users are required to discontinue water withdrawals whenever the streamflow falls either below the specified minimum flow or when the withdrawal would otherwise cause the streamflow to decrease below the specified minimum flow. Absent of any site-specific studies with respect to instream flow needs and other water demands, the 7-day, 10-year low flow (Q7,10) is often adopted as the protected minimum flow for public waters of Illinois. Q7,10 is defined as the minimum 7-day average flow that has a 10 percent chance of being equal to or less than annually (IDNR 2019).

Under the Clean Water Act, every state must adopt water quality standards to protect, maintain, and improve the quality of the nation's surface waters. These standards represent a level of water quality that will support the Clean Water Act's goal of "swimmable/fishable" waters. Water quality standards consist of several different components:

- Designated uses reflect how the water can potentially be used by humans and how well it supports a biological community. Examples of designated uses include aquatic life support, drinking water supply, and full body contact recreation. The Kankakee/Iroquois River Total Maximum Daily Load Target Levels (TMDLs) focus on protecting the designated recreational uses of the waterbodies.

- Criteria express the condition of the water that is necessary to support the designated uses. Numeric criteria represent the concentration of a pollutant that can be in the water and still protect the designated use of the waterbody. Narrative criteria are the general water quality criteria that apply to all surface waters. Numeric criteria for *E. coli* and fecal coliform were used as the basis of the Kankakee/Iroquois River TMDLs. (IEPA and IDEM 2009)

The Kankakee and Iroquois Rivers in Illinois are listed as impaired for fecal coliform. The water quality standard pertaining to fecal coliform in Illinois is described below.

> Illinois' General Use Water Quality Standard for fecal coliform bacteria specifies that during the months of May through October, based on a minimum of five samples taken over not more than a 30-day period, fecal coliform bacteria counts shall not exceed a geometric mean of 200 cfu (colony forming units)/100 ml, nor shall more than 10 percent of the samples during any 30-day period exceed 400 #/100 mL (35 Ill. Adm. Code 302.209 [2003]). This standard protects for Primary Contact (i.e., swimming) use of Illinois waters by humans. (IEPA and IDEM 2009)

As described in Title 35, Subtitle C, Chapter 1, Part 302, Subpart B of the Illinois Code of Regulations, the following General Use Water Quality Standards for Dissolved Oxygen (DO) and Temperature are applicable to the Kankakee River Hydroelectric Project:

> The DO concentration in all sectors must not be less than: 1) During the period of March through July, A) 5.0 mg/L at any time; and B) 6.25 mg/L as a daily mean averaged over 7 days. 2) During the period of August through February, A) 4.0 mg/L at any time; B) 4.5 mg/L as a daily minimum averaged over 7 days; and C) 6.0 mg/L as a daily mean averaged over 30 days. d) Assessing attainment of dissolved oxygen mean and minimum values. 1) Daily mean is the arithmetic mean of dissolved oxygen concentrations in 24 consecutive hours. 2) Daily minimum is the minimum dissolved oxygen concentration in 24 consecutive hours. 3) The measurements of dissolved oxygen used to determine attainment or lack of attainment with any of the dissolved oxygen standards in this Section must assure daily minima and daily means that represent the true daily minima and daily means. 4) The dissolved oxygen concentrations used to determine a daily mean or daily minimum should not exceed the air equilibrated concentration. 5) "Daily minimum averaged over 7 days" means the arithmetic mean of daily minimum dissolved oxygen concentrations in 7 consecutive 24-hour periods. 6) "Daily mean averaged over 7 days" means the arithmetic mean of daily mean dissolved oxygen concentrations in 7 consecutive 24- hour periods. 7) "Daily mean averaged over 30 days" means the arithmetic mean of daily mean dissolved oxygen concentrations in 30 consecutive 24-hour periods.
>
> Water temperature shall not exceed the following maximum limits more than one percent of the hours in the 12-month period ending with any month. Moreover, at no time shall the water temperature at such locations exceed the following maximum limits by more than 1.7 degrees Celsius (C) (3 degrees Fahrenheit (F)).
>
> - JAN: 16 degrees C (60 degrees F)
> - FEB: 16 degrees C (60 degrees F)
> - MAR: 16 degrees C (60 degrees F)
> - APR: 32 degrees C (90 degrees F)
> - MAY: 32 degrees C (90 degrees F)
> - JUN: 32 degrees C (90 degrees F)
> - JUL: 32 degrees C (90 degrees F)
> - AUG: 32 degrees C (90 degrees F)

- SEP: 32 degrees C (90 degrees F)
- OCT: 32 degrees C (90 degrees F)
- NOV: 32 degrees C (90 degrees F)
- DEC: 16 degrees C (60 degrees F)

Drinking water for the City of Kankakee (facility number IL0915030) is supplied by the Aqua Illinois Water Company - Kankakee Division (Aqua) community water supply (CWS). The Kankakee River (approximately one mile upstream of the Project) serves as the primary source of this water. The Aqua facility draws water from the Kankakee River through two surface water intakes (IN01601 and IN22082). The supply provides an average of 11.6 million gallons per day to 28,440 service connections serving an estimated population of 78,738 persons in Kankakee, Bradley, Bourbonnais, Illinois Diversatech Campus, Aroma Park, Grant Park and Manteno. (IEPA 2011).

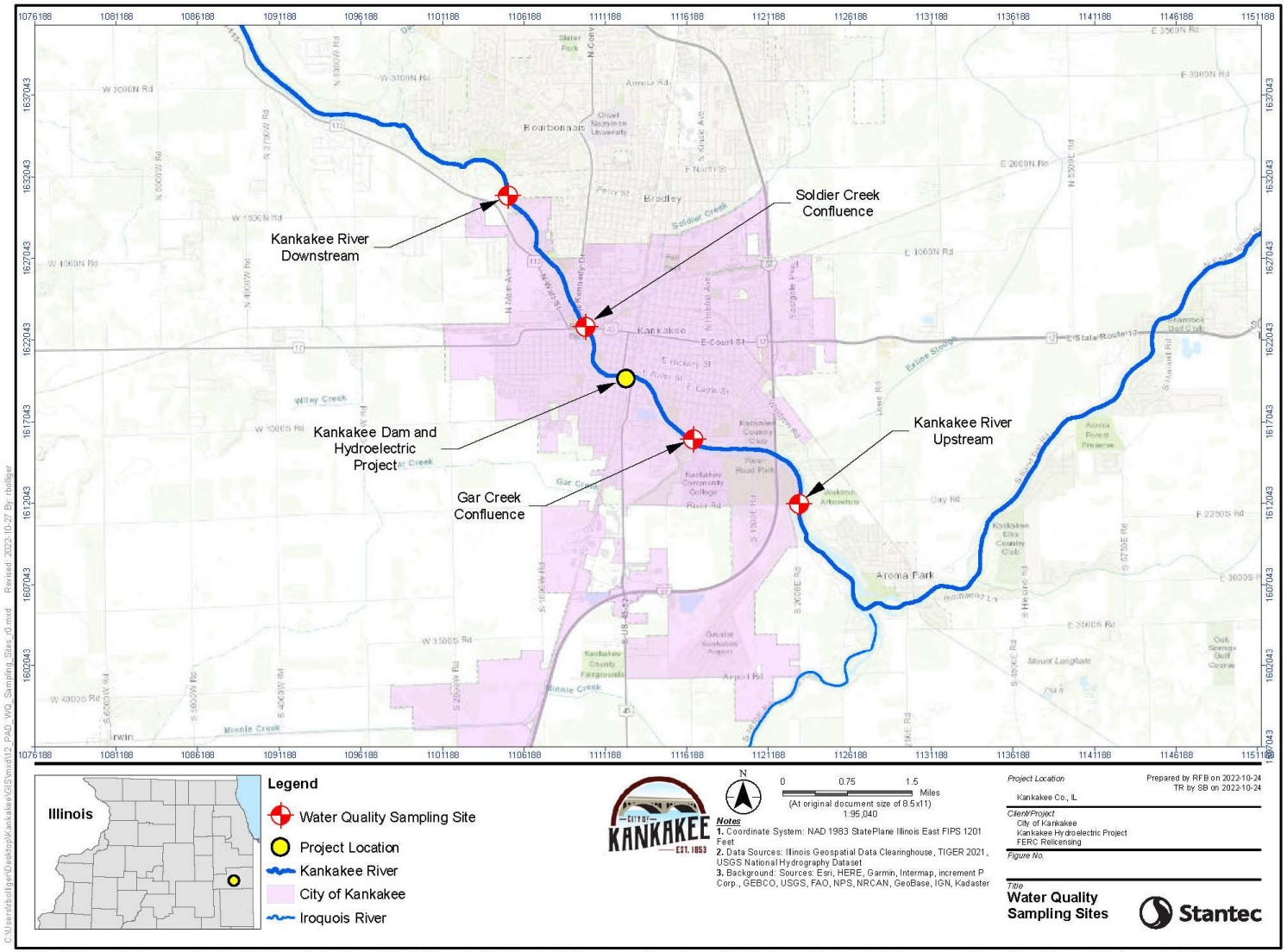
Waters not attaining water quality standards with technology-based controls alone (*e.g.,* water quality limited) must be identified in accordance with Section 303(d) of the Federal Clean Water Act (CWA). These waters were identified on a watershed basis, instead of individual stream segments, in order to be able to address watershed issues at a manageable scale and be able to document overall changes. Watersheds within the larger Kankakee watershed are included on the 303(d) list and listed as medium priority, meaning that there are no approved or ongoing TMDL plans. (IEPA 2011).

Aqua is an active voting member of the Kankakee River Basin Partnership. The Kankakee River Basin Partnership has acquired over 1.5 million dollars for watershed protection over the last few years. Some of the completed projects include purchases of land rights and lands in sensitive areas, bank stabilization projects, sedimentation studies and pilot projects, snag removal, and public education. In addition, stresses public education in watershed protection efforts. A watershed display is available for viewing in the lobby of their office in Kankakee. Another watershed display was placed at Olivet Nazarene University for the Chicago Bears Training Camp and arrangements have been made to fund a display to Kankakee State Park. Educational materials have been distributed at the Kankakee Area Career Center and at Kankakee Community College for a Women In Technology Seminar and to The Exploration Center Children's Museum. The Kankakee Soil and water Conservation District (SWCD), along with the USDA has also invested over 200,000 dollars in soil conservation efforts in the Kankakee River Watershed. These efforts have included farmer education in conservation tillage, field studies in reducing nutrient and water runoff, and public education in conservation. Over 50% of the farmed acres in Kankakee County are in some type of conservation tillage. Specific information on watershed projects can be found on the Resource Management Mapping Service at http://www.rmms.illinois.edu/RMMS-JSAPI. Under Section 319 of the Federal Clean Water Act, USEPA provides grants for the IEPA to finance projects that demonstrate cost-effective solutions to non-point source pollution problems and promote public knowledge and awareness. Projects in the Illinois portion of the Kankakee River Watershed have included: Pesticide Monitoring Survey - The United States Geological Survey (USGS), as part of the Toxic Substances Hydrology Program, in cooperation with the IEPA installed automatic samplers for the collection of surface water samples in three watersheds in Illinois. The samples were used to determine the magnitude and duration of concentrations of triazine herbicides during the first runoff event following the application of herbicides in 1990, and the findings were published. The three sites were selected to represent different areas of the state and different size drainage basins. The predominate land use in the selected sites is agricultural with a crop rotation of corn and soybeans. In an effort to minimize the impact of livestock facilities on water resources on a statewide basis, livestock facilities are now regulated under the Livestock Management Facilities Act. This legislation is designed to keep Illinois' livestock industry productive and environmentally responsible by establishing requirements for design, construction, operation and management of livestock facilities and waste-handling structures. Detailed information on the Livestock Management Facilities Act may be found at the website http://www.agr.state.il.us. In addition, the watershed protection efforts and priorities of the IEPA, Illinois Department of Agriculture, IDNR, NRCS, US Army Corps of Engineers, and The Nature Conservancy are described and illustrated at the website: http://www.epa.state.il.us/water/unified-watershed-assessment/index.html. In order to help farmers in adopting sound agricultural practices, The Illinois Council on Best Management Practices was formed. The Council is a coalition of agribusiness and agricultural producer organizations with the support of the University of Illinois Extension and serves as a clearinghouse on current research to protect water quality in Illinois. The

Council also provides information and support to local watershed groups to help implement sound water quality initiatives and can offer educational assistance and help facilitate the technical and financial resources needed to carry out water quality objectives. For more information on the Council, see http://illinoiscbmp.org/ or contact the Council at IllinoisCBMP@gmail.com or 100 East Washington Street, Springfield, IL 62701. (IEPA 2011).

4.3.1.2.2 Water Temperature and Dissolved Oxygen

The Licensee monitors water temperature and DO at various locations in the Kankakee River Basin three times per year, as part of its Municipal Separate Storm Sewer System (MS4) Management Program. Sampling locations are noted on **Figure 4.3-3** and available sampling data for 2021 and 2022 are described in **Table 4.3.3**.



Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

Figure 4.3-3. Water Quality Sampling Sites

Table 4.3-3. Water Quality Monitoring Results

Date	Time	Water Quality Monitoring Site							
		Kankakee River (Upstream)		Gar Creek Confluence		Soldier Creek Confluence		Kankakee River (Downstream)	
		Temp (C)	DO (mg/L)	Temp (C)	DO (mg/L)	Temp (C)	DO (mg/L)	Temp (C)	DO (mg/L)
10/6/2021	09:30					25.0	7.99		
10/13/2021	09:40	20.0	6.45						
	10:00							21.0	7.77
10/20/2021	10:15			18.0	9.02				
3/2/2022	10:15	16.8	12.07						
	10:40			14.2	12.36				
3/16/2022	10:10					16.4	11.86		
	10:30							12.9	12.50
5/4/2022	9:45	18.1	9.84						
	10:10			18.8	10.43				
5/11/2022	10:45					25.7	9.46		
	11:10							25.5	9.04

4.3.2 Resource Impacts

The Licensee does not currently monitor water temperature or DO at the Project intake or tailrace discharge as part of its existing FERC license. As the turbine-generator units are currently out of service, any monitoring of the Project intake or discharge would not provide insight into Project effects (if any) on water quality.

As described above, all water temperature and DO measurements taken during 2020 and 2021 complied with State of Illinois standards.

While the Licensee proposes to repair or replace existing turbine-generator equipment, this work is anticipated to be performed in the dry. Therefore, no adverse effects on water resources are expected.

The Licensee also proposes to provide Project electricity to its Stone Street Wastewater Lift Station via a new 12.5 kV overhead transmission line (on 40 to 45-foot-tall wood poles), The new line would tap into the existing line on the south side of Stone Street and run west along Stone Street for approximately 600 feet before terminating at a transformer in the existing Stone Street Wastewater Lift Station. Construction of the new line is not expected to adversely affect water resources.

Consistent with Article 401 of the existing FERC license, the Licensee proposes to operate the project in a run-of-river mode.

Consistent with Article 402 of the existing FERC license, the Licensee proposes to release a minimum flow of 500 cfs, or inflow, whichever is less, from the project reservoir.

Consistent with Article 403 of the existing FERC license, the Licensee proposes to file an erosion control plan as it relates to construction activity at the project.

The Licensee proposes to monitor water temperature and dissolved oxygen in the Project discharge following repair or replacement of the turbine generators. Proposed monitoring and reporting methods will be detailed in a Water Quality Monitoring Plan to be prepared as part of FERC relicensing.

4.4 FISHERIES AND AQUATIC RESOURCES

4.4.1 Existing Environment

4.4.1.1 Fisheries

A publication entitled "Fishing the Kankakee and the Iroquois" (IDNR Division of Fisheries 1996) noted that the following sport fish species were available in the Kankakee Dam (Project) pool: northern pike (*Esox lucius*), catfish, rock bass (*Ambloplites rupestris*), smallmouth bass (*Micropterus dolomieu*), crappie (*Pomoxis* spp.), and walleye (*Sander vitreus*). With the exception of northern pike and crappie, these same species were noted in the more riverine reach downstream of the pool.

A 2017 Kankakee River Basin survey (IDNR 2017) was the fifth IDNR evaluation of fish communities in the watershed since 1994. Additional IDNR surveys on the Kankakee River mainstem date back to 1975, representing a 40-year record of fish collections. Overall, the Kankakee River remained a high-quality system with relatively stable conditions over the sampling period. Although yearly variations have been noted, no major trends have been observed for species composition, or stream quality. In 2015, fish surveys were conducted at 13 historic stations on the mainstem of the Kankakee River and 11 tributary stations. Two additional stations on the mainstem, one in each of the dam pools at Wilmington and Kankakee were also sampled in 2015. Overall, IDNR-collected 16,729 fish representing 76 species for all mainstream and tributary stations combined. Three State Threatened species were collected: Ironcolor Shiner (*Notropis chalybaeus*), River Redhorse (*Moxostoma carinatum*), and Starhead Topminnow (*Fundulus dispar*). Asian Carp (a.k.a. Copi) and Round Goby (*Neogobius melanostomus*) were not observed or collected. A total of 7,033 fish representing 69 species were collected from the mainstem stations. Species composition was generally similar to previous surveys with minnows, suckers, and sunfishes dominating the catch.

The number of each fish species collected at stations upstream (F-96, approximately 2.1 miles upstream of Kankakee Dam) and downstream (F-12, approximately 0.1 mile downstream of Kankakee Dam) of Kankakee Dam during the 2017 Kankakee River Basin Survey are noted in **Table 4.4-1**. Fish were collected at each station with DC electrofishing (60 minutes) and seining (3 hauls).

Table 4.4-1. Fish Species Collected Downstream and Upstream of Kankakee Dam in 2015 (IDNR 2017)

Common Name	Scientific Name	Station F-12 (Downstream of Dam)	Station F-96 (Upstream of Dam)
Longnose Gar	*Lepisosteus osseus*	4	0
Carp	*Cyprinus carpio*	7	3
Grass Pickerel	*Esox americanus vermiculatus*	0	1
Northern Pike	*Esox lucius*	0	1
Striped Shiner	*Luxilus chrysocephalus*	0	3
Spotfin Shiner	*Cyprinella spiloptera*	2	27
Bluntnose Minnow	*Pimephales notatus*	0	15
Sand Shiner	*Notropis stramineus*	0	1
Bigmouth Buffalo	*Ictiobus cyprinellus*	0	6
Smallmouth Buffalo	*Ictiobus bubalus*	6	4
Quillback	*Carpiodes cyprinus*	7	1
Spotted Sucker	*Minytrema melanops*	0	1
Northern Hog Sucker	*Hypentelium nigricans*	3	0

Table 4.4-1. Fish Species Collected Downstream and Upstream of Kankakee Dam in 2015 (IDNR 2017)

Common Name	Scientific Name	Station F-12 (Downstream of Dam)	Station F-96 (Upstream of Dam)
River Redhorse*	*Moxostoma carinatum*	15	0
Shorthead Redhorse	*Moxostoma macrolepidotum*	59	2
Golden Redhorse	*Moxostoma erythrurum*	21	0
Silver Redhorse	*Moxostoma anisurum*	8	9
Channel Catfish	*Ictalurus punctatus*	17	0
Flathead Catfish	*Pylodictis olivaris*	1	5
Brook Silverside	*Labidesthes sicculus*	5	6
Rock Bass	*Ambloplites rupestris*	1	0
Largemouth Bass	*Micropterus salmoides*	10	15
Smallmouth Bass	*Micropterus dolomieu*	14	6
Green Sunfish	*Lepomis cyanellus*	1	6
Bluegill x Green Sunfish	*Lepomis macrochirus × cyanellus*	1	0
Bluegill	*Lepomis macrochirus*	9	3
Longear Sunfish	*Lepomis megalotis*	1	2
Walleye	*Sander vitreus*	1	0
Slenderhead Darter	*Percina phoxocephala*	4	0
Freshwater Drum	*Aplodinotus grunniens*	1	0
TOTAL		**198**	**117**

* Federally and/or State-listed species. See Section 4.7.

The “Kankakee River Fishery Fact Sheet - 2021” (IDNR 2021) noted that the walleye and channel catfish (*Ictalurus punctatus*) fisheries were “fair” near Aroma Park (upstream of Kankakee Dam and its pool). These same fisheries were noted as “good” on the Kankakee River downstream of the dam. This same publication noted that IDNR implements a walleye stocking program on the Kankakee River that releases 90,000 fingerlings per year.

4.4.1.1.1 Fish Habitats

The upper Kankakee River from the Illinois/Indiana State Line to Momence has a relatively low gradient (2 feet/mile), meandering through a large floodplain forest known as the Momence Wetlands. After a relatively short increase in gradient at Momence (5 feet/mile), the channel gradient decreases to 2.5 feet/mile from Momence to Aroma Park. Just downstream of Aroma Park the river is impounded by the Project’s Kankakee Dam. The substrate upstream of Kankakee contains much bedrock with areas of gravel/cobble and sand substrate. Areas of sand have reportedly expanded in recent years in the Momence Wetlands and within the pool that runs from Aroma Park downstream to the Kankakee Dam. Downstream of the Kankakee Dam, the river increases in gradient to four ft./mi. The Kankakee River State Park river segment has the highest gradient (six feet/mile), with numerous riffles, pools and islands. In addition to extensive bedrock runs, the substrate includes gravel and cobble areas. Downstream of the Park, gradient decreases to three feet/mile through Custer Park, before being impounded by the Wilmington Dam. Downstream of the Wilmington Dam, the gradient increases to approximately four feet/mile to the Des Plaines Conservation Area, where the river is impounded by the Dresden Dam on the Illinois River and becomes very slow-moving, silty and lake-like. (IDNR 2017)

Fish species distribution appeared to be related to stream gradient and longitudinal position, in addition to influence from the dams at Kankakee and Wilmington. Index of Biotic Integrity (IBI) scores ranged from 36 to 57 (60 maximum), with nine of the 13 historic mainstem stations scoring 50 points or more, including four of the five upper river stations between the State Line and Aroma Park. The station located at the confluence with the Des Plaines River was the only historic location with an Index of Biological Integrity (IBI) score below the IEPA threshold (⩾41) for full support of aquatic life. This station is impounded by the Dresden Dam located on the Illinois River just below the confluence. (IDNR 2017)

The station within the Kankakee Dam pool (F-96) also scored below the IEPA threshold with an IBI of 40. The Wilmington Dam pool, which is much shorter (one mile) than the Kankakee Dam pool (4.7 miles) appeared to maintain some level of free-flowing condition, with an IBI score (46) similar to un-impounded locations. Smallmouth bass was the most numerous game species collected on the mainstem. Overall catch rate of smallmouth bass was lower in 2015 (14.3 per hour) compared to previous basin surveys (mean = 24.5 per hour), but catch rate of larger individuals (>14 inches) was the highest recorded (7.8 per hour). Young-of-the-year smallmouth bass were in low abundance in 2015, with only four individuals collected. Channel Catfish catch rate (13.8 per hour) was similar to 2010 and above the long-term average (6.8 per hour) with many larger fish (>16 inches) present. A total of 9,697 fish representing 42 species were collected at 11 tributary stations. Species composition was similar to previous years with minnows and darters dominating the catch. IBI scores ranged from 30 to 58, with three stations scoring below the level for full support of aquatic life (⩾41). Overall, stream quality has been relatively stable since 1994 based on tributary IBI scores, although several stations have had incremental increases in IBI scores in recent years. Larger sportfish were uncommon at tributary sites. However, unlike the mainstem, young-of-the-year Smallmouth Bass were abundant at several locations. Although there has been much discussion and concern regarding the downstream movement of sand from Indiana into the Illinois portion of the Kankakee River, evaluation of fish community and sportfish data from the 2017 basin survey provides no evidence of wide-spread habitat degradation. The Kankakee River is widely acknowledged as one of the most diverse, high-quality systems in Illinois, and should remain a high priority for protection and improvement. (IDNR 2017)

4.4.1.2 Mussels

The Kankakee River has been the subject of numerous surveys to document the aquatic fauna, and many of these surveys have focused on the rich mussel diversity that exists in the Illinois portion of the Kankakee River. During a 2010 survey by IDNR and IEPA, 21 sites were visited from June to September. Freshwater mussel data were collected at 20 sites: 7 mainstem and 13 tributary sites in the Kankakee River basin (Illinois Natural History Survey (INHS) 2012). Mainstem sites included Site 4, upstream of the Project reservoir near Aroma Park, and Site 5, just downstream of the Kankakee Dam at the South McMullen Street (US Route 45) Bridge.

Live mussels and shells were collected at each sample site to assess past and current freshwater mussel occurrences. Live mussels were surveyed by hand grabbing and visual detection (*e.g.*, trails, siphons, exposed shell) when water conditions permitted. Efforts were made to cover all available habitat types present at a site including riffles, pools, slack water, and areas of differing substrates. A four-hour timed search method was implemented at each site.

Following the timed search, all live mussels and shells were identified to species and recorded. For each live individual, shell length (millimeters, mm), gender, and an estimate of the number of growth rings were recorded. Shell material was classified as recent dead (periostracum present, nacre pearly, and soft tissue may be present) or relict (periostracum eroded, nacre faded, shell chalky) based on condition of the best shell found. A species was considered extant at a site if it was represented by live or recently dead shell material. Voucher specimens were retained and deposited in the Illinois Natural History Survey (INHS) Mollusk Collection. All non-vouchered live mussels were returned to the stream reach where they were collected.

Mussels collected during the 2010 IDNR and IEPA survey at sites 4 and 5 are noted in **Table 4.4-2**.

Table 4.4-2. Mussel Species Collected Downstream and Upstream of Kankakee Dam in 2010 (INHS 2012)

Common Name	Scientific Name	Station 4 (Upstream of Project Reservoir)	Station 5 (Downstream of Dam at Route 45 Bridge)
Elktoe	*Alasmindonta marginata*	Dead	5
White Heelsplitter	*Lasmigona complanata*	1	3
Fluted-shell	*Lasmigona costata*	4	21
Giant Floater	*Pyganodon grandis*	1	Relict
Threeridge	*Amblema plicata*	1	4
Purple Wartyback*	*Cyclonaias tuberculata*	Relict	18
Spike*	*Elliptio dilatata*	1	Relict
Wabash Pigtoe	*Fusconaia flava*	Dead	4
Washboard	*Megalonaias nervosa*	--	10
Sheepnose*	*Plethobasus cyphyus*	1	--
Round Pigtoe	*Pleurobema sintoxia*	1	12
Monkeyface*	*Quadrula metanevra*	11	17
Pimpleback	*Quadrulata pustulosa*	34	25
Mapleleaf	*Quadrula*	--	Relict
Mucket	*Actinonaias ligamentina*	94	203
Plain Pocketbook	*Lampsilis cardium*	5	2
Fatmucket	*Lampsilis siliquoidea*	1	--
Fragile Papershell	*Leptodea fragilis*	--	11
Black Sandshell	*Ligumia recta*	8	7
Deertoe	*Truncilla truncate*	--	1
Ellipse	*Venustaconcha ellipsiformis*	--	Dead
TOTAL		**163**	**343**

* Federally and/or State-listed species. See Section 4.7.

As noted in the 2017 Kankakee River Basin survey (IDNR 2017), mussel species richness has declined in the Kankakee River since the early 1900's, but overall, the number of mussel species remains high compared to other Illinois rivers.

4.4.1.3 Benthic Macroinvertebrates

Benthic macroinvertebrates are organisms large enough to be visible to the unaided eye that live on or in the bottoms of streams or lakes. In the Kankakee River they include a variety of species of midges, caddisflies, and water beetles. Larvae of aquatic insects are an important part of the aquatic food chain. (IDENR 1981)

In 1979, 143 species of benthic macroinvertebrates were collected. Their diversity increased with increasing diversity of the habitat. That is, sites with progressively more complex substrates supported a greater variety of species. Sites where sand or sand-silt substrates predominated supported fewer species than sites with substrates composed of varying amounts of silt, sand, gravel, cobble, and bedrock. For example, in the predominantly sand areas upstream of Momence and downstream of

Aroma Park, only 25 to 28 species were collected; in the transition area (where bedrock and shallow to deep sand areas occur in rapid succession), 44 to 50 taxa were collected; and at sites with the most complex substrates of silt, sand, gravel, cobble, and bedrock, 70 to 80 taxa were found. (IDENR 1981)

Benthic macroinvertebrate community samples were collected by the US Geological Survey (USGS 1999) as part of the National Water-Quality Assessment program in the upper Illinois River Basin. One quantitative (Richest-Targeted Habitat) and one qualitative (Qualitative-Multiple Habitat) sample was collected in accordance with the NAWQA protocols for a site on the Kankakee River 0.2 mile downstream of the Highway 17 Bridge near Momence. This site extended 984 feet downstream. The quantitative sample was a composite of macroinvertebrates from about 10 submerged tree branches. Branches were cut underwater, gathered in a 425µm mesh net, and invertebrates were washed or picked from the branches. The average length and average diameter of each branch were measured and used to calculate an approximate surface area (0.28 square meters). The qualitative sample was collected from many habitat types within the sampling reach to obtain as complete a list of invertebrate taxa as possible. A total of 86 taxa were observed in the samples.

The character of the substrate may be the primary physical factor influencing the distribution and abundance of benthic macroinvertebrates in the Kankakee River. Thus, any variable that affects the nature of the riverbed will produce a corresponding effect upon the invertebrates inhabiting it. (IDENR 1981)

Although large expanses of sand in the Kankakee River between Momence and the Indiana border and downstream of Aroma Park have existed for a long time, the movement of sand farther downstream to cover exposed gravel, rubble, and bedrock substrates will have a significant impact upon benthic macroinvertebrates. (IDENR 1981)

4.4.1.4 Invasive Aquatic Species

The Center for Invasive Species and Ecosystem Health at the University of Georgia (CISEH 2018) has identified the following invasive aquatic species of concern in Kankakee County, Illinois:

- Purple Loosestrife (*Lythrum salicaria*)
- Eurasian watermilfoil Myriophyllum spicatum
- Curly Leaf Pondweed (*Potomogeton crispus*)
- Narrow-leaved Cattail (*Typhus angustifolia*)
- Hybrid Cattail (*Typhus x glauca*)
- Zebra Mussel (*Dreissena polymorpha*)
- Asian (Silver) Carp (*Hypophthalmichthys molitrix*)
- Bighead Carp (*Hypophthalmichthys nobilis*)

4.4.2 Resource Impacts

Run-of-river operations and required minimum flows result in little Project impact on the aquatic community. The Project was constructed at an existing dam so impacts to resources created by impounding a free-flowing river are not directly related to Kankakee Project operations. Potential fishery concerns primarily deal with maintaining angling opportunities as the Kankakee tailrace provides a popular and productive fishing area.

As noted above, IDNR fisheries surveys over the last 40 years indicate that the Kankakee River is a high-quality system with relatively stable conditions. Although yearly variations were noted, no major trends were observed for species composition or stream quality. Species composition was generally dominated by minnows, suckers, and sunfishes.

Many surveys have focused on the rich mussel diversity that exists in the Illinois portion of the Kankakee River. As noted in the 2017 Kankakee River Basin survey (IDNR 2017), mussel species richness has declined in the Kankakee River since the early 1900's, but overall, the number of mussel species remains high compared to other Illinois rivers.

While the Licensee proposes to repair or replace existing turbine-generator equipment, this work is expected to be performed in the dry. Therefore, no adverse effects on fish or aquatic resources are expected.

The Licensee also proposes to provide Project electricity to its Stone Street Wastewater Lift Station A new 12.5 kV overhead transmission line would tap into the existing line on the south side of Stone Street and run west along Stone Street for approximately 600 feet before terminating at a transformer in the existing Stone Street Wastewater Lift Station. No adverse effects on fish or aquatic resources are expected.

Consistent with Article 401 of the existing FERC license, the Licensee proposes to operate the project in a run-of-river mode.

Consistent with Article 402 of the existing FERC license, the Licensee proposes to release a minimum flow of 500 cfs, or inflow, whichever is less, from the project reservoir.

Consistent with Article 403 of the existing FERC license, the Licensee proposes to file an erosion control plan as it relates to construction activity at the project.

4.5 WILDLIFE AND BOTANICAL RESOURCES

4.5.1 Existing Environment

The Kankakee Hydroelectric Project is situated in the Illinois/Indiana Prairies Ecoregion. The largest ecoregion in Illinois, the Illinois/Indiana Prairies Ecoregion extends through most of the north and central part of the state into a small area of western Indiana. This region tends to have dark, highly fertile soils that formed under tallgrass prairie, and are ideally suited to agriculture. Prior to European settlement this region was mostly covered in prairies, including wet, mesophytic, and dry, but also had significant areas of oak-hickory. (bplant.org undated). Nearly all the original prairies have now been replaced by agriculture. Corn and soybeans are the main crops; cattle, sheep, poultry, and hogs are also raised.

4.5.1.1 Terrestrial Wildlife

4.5.1.1.1 Mammals

Mammals that potentially inhabit the general Kankakee Project vicinity or lands within the Project area for permanent, temporary, or transient uses are presented in **Table 4.5-1** below.

Table 4.5-1. Mammals Potentially Occurring in the Project Vicinity

Common Name	Scientific Name	Common Name	Scientific Name
Eastern Gray Squirrel	*Sciurus carolinensis*	Striped Skunk	*Mephitis*
Eastern Cottontail	*Sylvilagus floridanus*	Gray Fox	*Urocyon cinereoargenteus*
Common Raccoon	*Procyon lotor*	American Mink	*Neogale vision*
White-Tailed Deer	*Odocoileus virginianus*	House Mouse	*Mus musculus*
Plains Pocket Gopher	*Geomys bursarius*	American Badger	*Taxidea taxus*
Eastern Chipmunk	*Tamias striatus*	Long-Tailed Weasel	*Neogale frenata*
American Red Squirrel	*Tamiasciurus hudsonicus*	Eastern Mole	*Scalopus aquaticus*
Groundhog	*Marmota monax*	Eastern Red Bat	*Lasiurus borealis*
Coyote	*Canis latrans*	Least Weasel	*Mustela nivalis*
American Beaver	*Castor canadensis*	Little Brown Bat	*Myotis lucifugus*
Virginia Opossum	*Didelphis virginiana*	Franklin's Ground Squirrel*	*Poliocitellus franklinii*
Fox Squirrel	*Sciurus niger*	Meadow Jumping Mouse	*Zapus hudsonius*
Red Fox	*Vulpes*	North American Least Shrew	*Cryptotis parvus*
Northern Short-Tailed Shrew	*Blarina brevicauda*	Western Harvest Mouse	*Reithrodontomys megalotis*
Muskrat	*Ondantra zibethicus*	Woodland Vole	*Microtus pinetorum*
Thirteen-Lined Ground Squirrel	*Ictidomys tridecemlineatus*	Rafinesque's Big-Eared Bat*	*Corynorhinus rafinesquii*
White-Footed Mouse	*Peromyscus leucopus*	Northern Long-Eared Bat*	*Myotis septentrionalis*
Deer Mouse	*Peromyscus maniculatus*	Prairie Vole	*Microtus ochrogaster*
Big Brown Bat	*Eptesicus fuscus*	Southern Bog Lemming	*Synaptomys cooperi*
Meadow Vole	*Microtus pennsylvanicus*	Indiana Bat*	*Myotis sodalis*
Southern Flying Squirrel	*Glaucomys Volans*	Southeastern Shrew	*Sorex longirostris*
Hoary Bat	*Lasiurus cinereus*	Masked Shrew	*Sorex cinereus*
Silver-Haired Bat	*Lasionycteris noctivagans*	Evening Bat	*Nycticeius humeralis*

Source: iNaturalist.org undated.

* Federally and/or State-listed species. See Section 4.7.

4.5.1.1.2 Avifauna

One hundred and seventy-six (176) species of songbirds, perching birds, waterbirds, raptors, and upland game birds have been documented in the vicinity of Kankakee Dam by eBird (2022). These bird species are included in **Appendix D**.

4.5.1.1.3 Amphibians and Reptiles

Amphibian and reptile species inhabit various habitat types such as woodland, riparian, scrub-shrub or early successional areas, and grasslands. Use of these areas may shift during different life stages and/or times of year. Amphibian and reptile habitat preferences are primarily influenced by food and

reproductive requirements. **Table 4.5-2** lists the amphibians potentially occurring within or adjacent to the Project area; **Table 4.5-3** lists the reptiles potentially occurring within or adjacent to the Project area (iNaturalist.org undated).

Table 4.5-2. Amphibians Potentially Occurring in the Project Vicinity

Common Name	Scientific Name	Common Name	Scientific Name
American Toad	*Anaxyrus americanus*	Green Frog	*Lithobates clamitans*
Fowler's Toad	*Anaxyrus fowleri*	Northern Leopard Frog	*Lithobates pipiens*
Blanchard's Cricket Frog	*Acris blanchardi*	Wood Frog	*Lithobates sylvaticus*
Boreal Corus Frog	*Pseudacris maculata*	Small-Mouthed Salamander	*Ambystoma texanum*
Spring Peeper	*Pseudacris crucifer*	Blue-Spotted Salamander	*Ambystoma tigrinum*
Gray Treefrog	*Hyla versicolor*	Eastern Red-Backed Salamander	*Plethodon cinereus*
Cope's Gray Treefrog	*Hyla chrysoscelis*	Southern Two-Lined Salamander	*Eurycea cirrigera*
Plains Leopard Frog	*Lithobates blairi*	Common Mudpuppy*	*Necturus maculosus*
American Bullfrog	*Lithobates catesbeianus*		

Source: iNaturalist.org undated.

* Federally and/or State-listed species. See Section 4.7.

Table 4.5-3. Reptiles Potentially Occurring in the Project Vicinity

Common Name	Scientific Name	Common Name	Scientific Name
Slender Glass Lizard	*Ophisaurus attenuatus*	Smooth Greensnake	*Opheodrys vernalis*
Six-Lined Racerunner	*Aspidoscelis sexlineatus*	Eastern Milksnake	*Lampropeltis triangulum*
Kirtland's Snake*	*Clonophis kirtlandii*	Eastern Foxsnake	*Pantherophis vulpinus*
Common Garter Snake	*Thamnophis sirtalis*	Gray Ratsnake	*Pantherophis spiloides*
Plains Garter Snake	*Thamnophis radix*	Massasauga*	*Sistrurus catenatus*
Red-bellied Snake	*Storeria occipitomaculata*	Spiny Softshell	*Apalone spinifera*
Dekay's Brownsnake	*Storeria dekayi*	Common Snapping Turtle	*Chelydra serpentina*
Queensnake	*Regina septemvittata*	Spotted Turtle*	*Clemmys guttata*
Common Watersnake	*Nerodia sipedon*	Ornate Box Turtle*	*Terrapene ornata*
Eastern Hognose Snake	*Heterodon platirhinos*	Painted Turtle	*Chrysemys picta*
Plains Hognose Snake*	*Heterodon nasicus*	Pond Slider	*Trachemys scripta*
North American Racer	*Coluber constrictor*	Northern Map Turtle	*Graptemys geographica*
Gopher Snake	*Pituophis catenifer*		

Source: iNaturalist.org undated.

* Federally and/or State-listed species. See Section 4.7.

4.5.1.2 Botanical Resources

Kankakee River shorelines in the immediate vicinity of the Kankakee Hydroelectric Project are lined with concrete walls and/or stone riprap. Mowed turfgrass, trees, and shrubs are found in the tailrace

fishing area located just downstream of the powerhouse. The transmission line, which crosses the river in a conduit attached to South McMullen Drive (Edward McBroom) Bridge and terminates at the KRMA WWTP located along the river downstream near West Brookmont Boulevard, is located overhead on wooden poles and underground in conduit. The transmission line passes through industrial, commercial, dense residential (in paved alleyways and along paved roadways), and open space (park) land uses. It crosses under several roadways and a railroad line. It also crosses over Soldier Creek.

The natural forest community in areas surrounding the Kankakee Project is dominated by floodplain and oak-hickory (upland) forests. Canopy, woody understory, and herbaceous understory species typically found in these forest communities (USGA & NYAS 1993) are noted in **Table 4.5-4**.

Table 4.5-4. Natural Forest Vegetation Potentially Occurring in the Project Vicinity

Common Name	Scientific Name	Common Name	Scientific Name
Floodplain Forest			
Silver Maple	*Acer saccharinum*	Honey Locust	*Gleditsia triacanthos*
River Birch	*Betula nigra*	Black Walnut	*Juglans nigra*
Shell-Bark Hickory	*Carya laciniosa*	Black Tupelo	*Nyssa sylvatica*
Common Hackberry	*Celtis occidentalis*	American Sycamore	*Platanus occidentalis*
Sweet Gum	*Liquidambar stryaciflua*	Black Willow	*Salix nigra*
Eastern Cottonwood	*Populus deltoides*	Giant Cane	*Arundinaria gigantea*
Swamp White Oak	*Quercus bicolor*	Common Pawpaw	*Asimina triloba*
Overcup Oak	*Quercus lyrate*	American Hornbeam	*Carpinus caroliniana*
Pin Oak	*Quercus palustris*	Stiff Dogwood	*Cornus foemina*
American Elm	*Ulmus americana*	Deciduous Holly	*Ilex decisua*
Slippery Elm	*Ulmus rubra*	Northern Spicebush	*Lindera benzoin*
Box Elder	*Acer negundo*	Poison Ivy	*Toxicodendron radicans*
Red Maple	*Acer rubrum*	Grape	*Vitus spp.*
Bitternut Hickory	*Carya cordiformis*	Green Ash	*Fraxinus pennsylvanica*
Oak-Hickory Forest			
Pignut Hickory	*Carya glabra*	Scarlet Oak	*Quercus coccinea*
Shag-Bark Hickory	*Carya ovata*	Southern Red Oak	*Quercus falcata*
Northern White Oak	*Quercus alba*	Chinkapin Oak	*Quercus muhlenbergii*
Northern Red Oak	*Quercus rubra*	Dwarf Chinkapin Oak	*Quercus prinoides*
Black Oak	*Quercus velutina*	Shumard's Oak	*Quercus shumardii*
Red Maple	*Acer rubrum*	Post Oak	*Quercus stellata*
Sugar Maple	*Acer saccharum*	Slippery Elm	*Acer rubrum*
Red Hickory	*Carya ovalis*	Downy Service-Berry	*Amelanchier arborea*
Black Hickory	*Carya texana*	New Jersey Tea	*Ceanothus americanus*
Common Persimmon	*Diospyros virginiana*	Redbud	*Cercis canadensis*
White Ash	*Fraxinus americana*	Flowering Dogwood	*Cornus florida*
Blue Ash	*Fraxinus quadrangulata*	Gray Dogwood	*Cornus racemose*
Black Tupelo	*Nyssa sylvatica*	Virginia Creeper	*Parthenocissus quinquefolia*
Shortleaf Pine	*Pinus echinata*	Fragrant Sumac	*Rhus aromatica*
Winged Elm		Early Lowbush Blueberry	*Vaccinium pallidum*
Tree Sparkle-Berry		Summer Grape	*Vitis aestivalis*

4.5.1.3 Invasive Terrestrial Wildlife and Botanical Species

Invasive terrestrial species are defined as non-indigenous plant or animal species that aggressively compete with native species. These species often out-compete local native species and can impact

biodiversity, recreation, and ecological productivity. **Table 4.5-5** lists the Kankakee County invasive species with the potential to occur within or adjacent to the Project area.

Table 4.5-5. Terrestrial Invasive Species Potentially Occurring in the Kankakee Project Vicinity

Common Name	Scientific Name	Common Name	Scientific Name
Invasive Botanical Species			
Tree-of-Heaven	*Ailanthus altissima*	Common Teasel	*Dipsacus fullonum*
Autumn Olive	*Elaeagnus umbellata*	Cut-Leaved Teasel	*Dipsacus laciniatus*
Japanese Barberry	*Berberis thunbergii*	Leafy Spurge	*Euphorbia esula*
Amur Honeysuckle	*Lonicera maackii*	Japanese knotweed	*Fallopia japonica*
Tartarian Honeysuckle	*Lonicera tatarica*	Baby's Breath	*Gypsophila scorzonerifolia*
Common Buckthorn	*Rhamnus cathartica*	Giant Hogweed	*Heracleum mantegazzianum*
Black Locust	*Robinia pseudoacacia*	Crownvetch	*Securigera varia*
Multiflora Rose	*Rosa multiflora*	Giant Manna Grass	*Glyceria grandis*
Garlic Mustard	*Alliaria petiolata*	Reed canarygrass	*Phalaris arundinacea*
Musk Thistle	*Carduus nutans*	Phragmites	*Phragmites australis*
Spotted Knapweed	*Centaurea stoebe ssp. micranthos*	Johnsongrass	*Sorghum halepense*
Canada Thistle	*Cirsium arvense*	Oriental Bittersweet	*Celastrus orbiculatus*
Bull Thistle	*Cirsium vulgare*		
Invasive Insect Species			
Asian Longhorned Beetle	*Anoplophora glabripennis*	Emerald Ash Borer	*Agrilus planipennis*
Gypsy Moth	*Lymantria dispar*	Soybean Aphid	*Aphis glycines*

Source: Center for Invasive Species and Ecosystem Health at the University of Georgia (2018, www.invasive.org)

While invasive botanical and insect species of concern were identified in Kankakee County, Illinois, no invasive mammalian species were identified.

4.5.2 Resource Impacts

The Kankakee Project is licensed as run-of-river mode (in accordance with existing License Article 401) with releases made in coordination with IDNR. The Licensee is responsible for operation of the inflatable rubber dam that sits atop the Kankakee Dam. This rubber dam, which is 24 inches high when fully inflated, allows the Licensee to vary the surface of the reservoir. The rubber dam is fully inflated during normal Project operation and a 500 cfs, or inflow, whichever is greater, flow maintained over the Kankakee Dam (in accordance with existing License Article 402) to protect fishery resources in the Kankakee River. Lands within the Project boundary are mowed, cleared, or otherwise maintained. Areas around the tailrace fishing recreation area are regularly mowed. Areas around the powerhouse are enclosed by chainlink fencing. Much of the transmission line is located underground and, therefore, has no impact on wildlife or botanical resources. The existing transmission line crosses the Kankakee River in a conduit attached to South McMullen Drive (Edward McBroom) Bridge and terminates at the KRMA WWTP located along the river downstream near West Brookmont Boulevard. Overhead portions of the transmission line are located on 40-45-foot-tall wooden poles and pass through industrial, commercial, dense residential (in paved alleyways and along paved roadways), and open space (park) land uses. The transmission line crosses over Soldier Creek and its associated floodplain forest vegetation.

The Kankakee Hydroelectric Project has been in-place for over 30 years. The existing wildlife and botanical resources in and around the Project have developed in response to its presence. The Licensee proposes to continue operating the Project in a run-of-river mode in coordination with IDNR. No changes in vegetative maintenance of the existing transmission line corridor are proposed, and no impacts are anticipated from continued Project operation.

The Licensee proposes to repair or replace existing turbine-generator equipment. This work will be in-kind and, therefore, no adverse effects on wildlife or botanical resources are expected.

The Licensee also proposes to provide Project electricity to its Stone Street Wastewater Lift Station via a new 12.5 kV overhead transmission line on 40 to 45-foot-tall wood poles that resemble other overhead portions of the Project transmission line. The new line would tap into the existing line on the south side of Stone Street and run west along Stone Street for approximately 600 feet before terminating at a transformer in the existing Stone Street Wastewater Lift Station. These areas have already been heavily disturbed by residential and industrial development. Construction of this new transmission line would result in the clearing of up to seven (7) mature ornamental trees located in the front yards of homes located on Stone Street. All clearing would be performed under the supervision of the City Department of Public Work's certified arborist.

Although numerous invasive terrestrial wildlife and botanical species have the potential to occur within the Project vicinity, the Project area's small size and highly urbanized (paved and/or maintained turfgrass) setting make infestations by these species unlikely.

Bird interactions with power lines and related structures have been documented for many decades. Bird injuries and fatalities occur as a result of electrocution through contact with energized and/or grounded hardware and collision with wires. Transmission towers pose an electrocution risk to birds because towers provide perching, loafing, and sometime nesting opportunities for birds in close proximity to energized and/or grounded hardware. The use of transmission towers and related structures by birds is influenced by several ecological factors including: (1) the presence and distribution of natural perches, roosting, and nesting sites; (2) topography; (3) vegetation; and (4) prey abundance and availability.

Electrocution, resulting in injury or death, occurs when a bird completes an electric circuit by simultaneously touching two energized conductors or an energized conductor and a grounded part of the electrical equipment. Certain bird species and species groups are more susceptible to electrocution than others based on their size and behavior, increasing their risk of exposure to energized and/or grounded hardware. For example, the large wingspans of raptors such as bald eagles, red-tailed hawks (*Buteo jamaicensis*), osprey (*Pandion haliaetus*), and great horned owls (*Bubo virginianus*) could simultaneously touch energized and/or grounded parts. Tall birds such as herons and egrets are at risk of electrocution where vertical spacing between lines is less than their height. Birds such as American crows (*Corvus brachyrhynchos*), blue jays (*Cyanocitta cristata*), and small flocking birds can be electrocuted by closely spaced exposed equipment, such as jumper wires on transformers.

Transmission line structures that are considered "safe" for raptors and other large birds are those that provide at least 60 inches of horizontal separation and 48 inches of vertical separation to accommodate the wrist-to-wrist wingspan and height of an eagle. Areas that contain concentrations of tall birds (e.g., wading birds, including herons and egrets) may require a vertical separation of 60 inches to be considered "bird safe".

Much of the existing transmission line associated with the Kankakee Hydroelectric Project is located underground, including nearly all areas located in open space (parks). The transmission line crossing of the Kankakee River is in a conduit attached to the South McMullen Drive Bridge, rather than on overhead poles or towers. In addition, nearly all overhead portions of the existing transmission line (with the notable exception of the Soldier Creek crossing) are on relatively low (40 to 45-foot-tall) wooden poles located in industrial, commercial, and dense residential (in paved alleyways and along paved roadways) areas with limited bird habitat value. Therefore, the Licensee believes that the Project's adverse impact to birds is minimal.

The City Department of Public Works has a tree planting program. A City arborist will determine trees to be removed and replaced as part of the proposed Stone Street transmission line extension.

The Licensee proposes to implement a bat protection measure (tree clearing along the existing and proposed transmission line route under the supervision of a City arborist only during winter months to avoid potential impacts on roosting bats.

4.6 WETLANDS, RIPARIAN, AND LITTORAL HABITAT

4.6.1 Existing Environment

4.6.1.1 Wetlands

Wetlands are generally defined as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support vegetation typically adapted for life in saturated soil conditions. The US Army Corps of Engineers (USACE) and IDNR have jurisdiction over wetlands in Illinois.

The US Fish and Wildlife Service (USFWS) (Cowardin et al. 1979) defines wetlands as:

> "…lands transitional between terrestrial and aquatic system where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification wetlands must have been one or more of the following three attributes: (1) at least periodically, the land supports predominately hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is nonsoil and is saturated with water or covered by shallow water at some point during the growing season of the year."

As shown on **Figure 4.6-1**, there are no wetlands have been identified by USFWS in the vicinity of the Kankakee Hydroelectric Project.

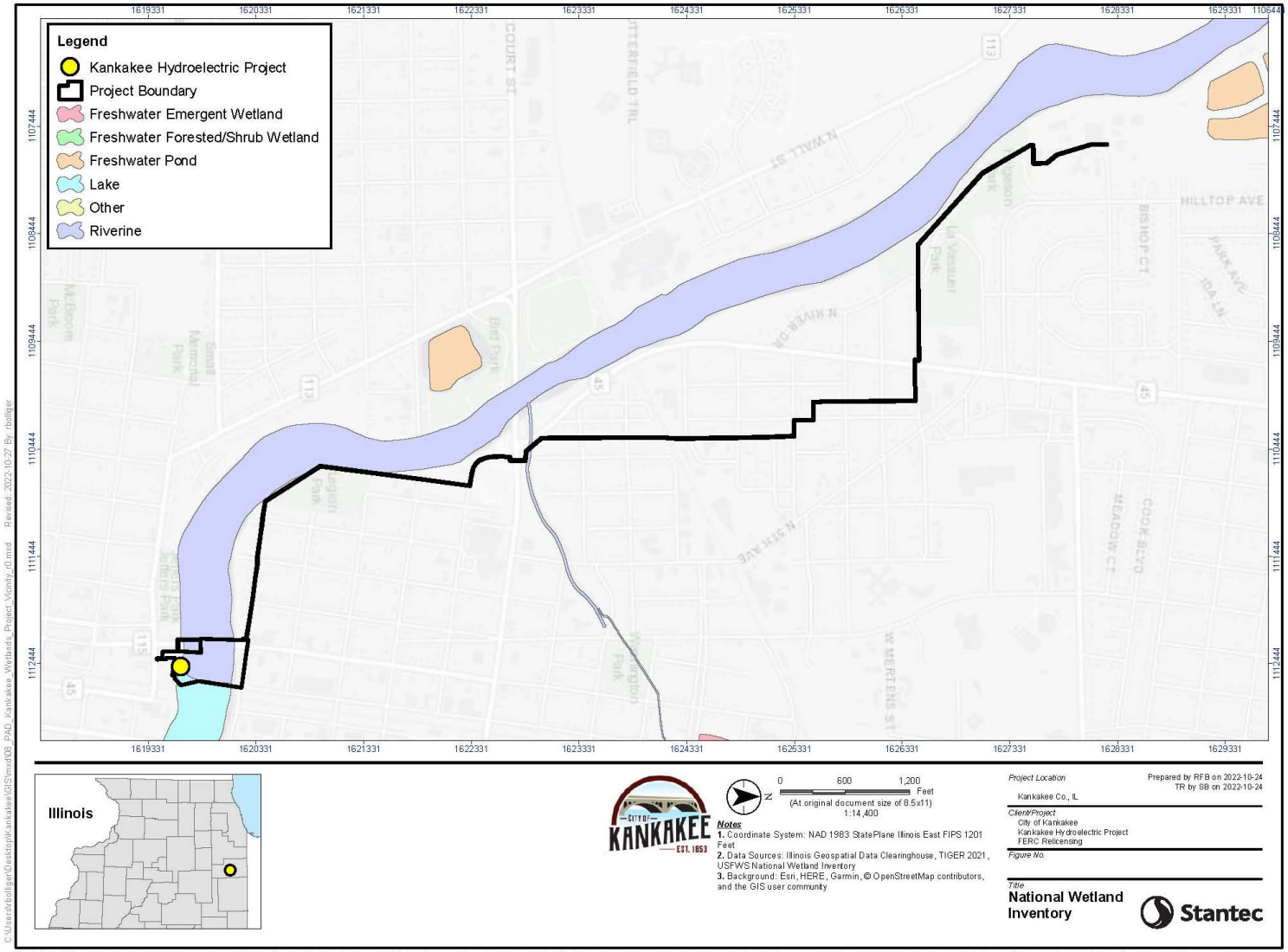


Figure 4.6-1. Wetlands in the Kankakee Project Vicinity

4.6.1.2 Riparian and Littoral Habitat

The Kankakee River shorelines of the Project have limited vegetation, due to the presence of concrete walls and/or stone riprap. Adjacent shorelines, including those in the vicinity of the overhead transmission line crossing of Soldier Creek, contain cottonwood (*Populus deltoides*), silver maple (*Acer saccharinum*), box elder (*Acer negundo*), green ash (*Fraxinus pennsylvanica*), and willow (*Salix spp.*).

4.6.2 Resource Impacts

The Kankakee Project is operated in a run-of-river mode with releases coordinated with IDNR. In accordance with existing License 402, the Project releases a minimum flow of 500 cfs, or inflow, whichever is less, from the project reservoir to the river below. The Project has been in-place for over 30 years. The existing wetland, riparian, and littoral habitats in and around the Project have developed in response to its operation.

The Licensee proposes to continue operating the Project in a run-of-river mode in coordination with IDNR during the next license term. No changes in vegetative maintenance of the transmission line corridor are proposed. Due to the limited wetland and riparian habitat located within the Project Boundary, ongoing vegetative maintenance activities, and the existing Project's run-of-river operation, no impacts are anticipated from continued Project operation.

4.7 RARE, THREATENED, AND ENDANGERED (RTE) SPECIES

4.7.1 Existing Environment

The purpose of the Endangered Species Act (ESA), which was passed by the US Congress in 1973, is to protect and recover imperiled species and the ecosystems upon which they depend. The ESA is administered by the U.S. Fish and Wildlife Service (USFWS) and the Commerce Department's National Marine Fisheries Service (NMFS). The USFWS has primary responsibility for terrestrial and freshwater organisms, while the responsibilities of NMFS are mainly marine wildlife such as whales and anadromous fish such as salmon. (USFWS 2020)

Under the ESA, species may be listed as either endangered or threatened. "Endangered" means a species is in danger of extinction throughout all or a significant portion of its range. "Threatened" means a species is likely to become endangered within the foreseeable future. All species of plants and animals, except pest insects, are eligible for listing as endangered or threatened. For the purposes of the ESA, Congress defined species to include subspecies, varieties, and, for vertebrates, distinct population segments. (USFWS 2020)

Illinois statutes protect both endangered plants and animals as defined by the State of Illinois, as well as those species listed on the federal ESA list. Illinois species may be listed as "Threatened" or "Endangered".

4.7.1.1 Federally Listed RTE Species

As part of the information-gathering process conducted to support the development of this PAD, the Licensee requested information from the USFWS and IDNR regarding federally and state listed rare, threatened, or endangered animal and plant species, critical habitat, sensitive natural communities, and species of special concern within the Project's vicinity.

The Licensee conducted a review of federally listed threatened, endangered, and candidate species using USFWS' Information for Planning and Consultation (IPaC) online system on July 20, 2022 (USFWS 2022). The Licensee also reviewed the Checklist of Illinois Endangered and Threatened Animals and Plants (IESPB, Illinois Endangered Species Protection Board, 2015). The A total of 23 threatened, endangered, or candidate animal and plant species (TES) have the potential to occur within the Project Boundary (**Table 4.7-1**).

Table 4.7-1. Federal and State Listed Animal and Plant Species Potentially Occurring in the Kankakee Project Vicinity

Common Name	Scientific Name	Status*
River Redhorse	*Moxostoma carinatum*	SE
Common Mudpuppy	*Necturus maculosus*	ST
Spike	*Elliptio dilatata*	SE
Sheepnose	*Plethobasus cyphyus*	FE, SE
Purple Wartyback	*Cyclonaias tuberculata*	ST
Monkeyface	*Quadrula metanevra*	ST
Spotted Turtle	*Clemmys guttata*	SE
Massasauga	*Sistrurus catenatus*	SE
Ornate Box Turtle	*Terrapene ornata*	ST
Kirtland's Snake	*Clonophis kirtlandii*	ST
Plains Hognose Snake	*Heterodon nasicus*	ST
Northern Harrier	*Circus hudsonius*	SE
Black-Crowned Night Heron	*Nycticorax*	SE
Osprey	*Pandion haliaetus*	ST
Black-Billed Cuckoo	*Coccyzus erythropthalmus*	ST
Cerulean Warbler	*Dendroica cerulea*	ST
Rafinesque's Big-Eared Bat	*Corynorhinus rafinesquii*	SE
Indiana Bat	*Myotis sodalis*	FE, SE
Northern Long-Eared Bat	*Myotis septentrionalis*	FT, ST
Franklin's Ground Squirrel	*Poliocitellus franklinii*	ST
Monarch Butterfly	*Danaus plexippus*	FC
Kankakee Mallow	*Iliamna remota*	SE
Eastern Prairie Fringed Orchid	*Platanthera leucophaea*	FT, SE

Source: USFWS 2022; Illinois Endangered Species Protection Board 2020.

FE=Federally Endangered; FT=Federally Threatened; FC=Federal Candidate; SE=State Endangered; ST=State Threatened

4.7.1.1.1 River Redhorse

The river redhorse may be found in the northern one-third of Illinois, the upper Mississippi River and the Ohio River. It lives in the deep, swift, gravel riffles of rivers. It is intolerant of silt, turbidity and pollution. Spawning occurs in spring. The river redhorse eats mollusks and aquatic insects. (IDNR 2022)

The river redhorse is 10 to 27 inches in length. The back and upper sides of this fish are green-brown, while the remainder of each side is yellow. The belly is white. The dorsal fin is green-brown or blue-gray. The lower body fins are plain or with an orange tint. The tail fin is red. Dark spots can be seen on the scale bases of the back and sides. The river redhorse has a large head and a large mouth. The posterior border of the lower lip is U-shaped. Large teeth are present in the throat. (IDNR 2022)

4.7.1.1.2 Common Mudpuppy

The common mudpuppy lives in lakes, rivers and large creeks. It is active at night throughout the year. Breeding occurs in the fall, but the eggs are not deposited until spring. Eggs hatch in about two months. The mudpuppy eats fishes, arthropods (spiders, insects, mites and others), annelids (segmented worms) and mollusks (snails, mussels). (IDNR 2022a)

The common mudpuppy averages eight to 13 inches in length. Its bushy, external gills are retained throughout life. It has four toes on each of its feet (most salamanders have five toes on each hind foot). A dark stripe is present through the eye. The body is gray or rust-brown. The back usually has scattered blue-black spots. The belly is gray, sometimes with dark spots. (IDNR 2022a)

4.7.1.1.3 Spike

The spike is found in small to large streams and occasionally lakes. Usually, the substrate it inhabits is sand-gravel or mud-gravel. The spike is absent from shifting sands. (University of Michigan 2020)

The spike is up to five inches long, and is elongate and elliptical. The shell is usually fairly thick and compressed. The anterior end is rounded, the posterior end rounded to slightly pointed. The dorsal and ventral margins are straight to slightly curved. The beak sculpture has three or four parallel ridges. The periostracum (outer shell layer) is smooth, green-brown in younger specimens, dark brown to black in older specimens. On the inner shell, the left valve has two divergent, erect, triangular and striated pseudocardinal teeth. The two lateral teeth are short to slightly curved, and rough. The right valve has one large, erect, triangular and serrated pseudocardinal tooth, with a small tooth to the anterior end. The single lateral tooth on the right valve is slightly curved and rough. The beak cavity is shallow and the nacre is typically purple (University of Michigan 2020).

4.7.1.1.4 Sheepnose

The sheepnose mussel is found across the Midwest and Southeast and its current range is in Alabama, Illinois, Indiana, Iowa, Kentucky, Minnesota, Mississippi, Missouri, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and Wisconsin. This species has been eliminated from two-thirds of the streams from which it was known historically, including hundreds of river miles in the Illinois, Cumberland, Mississippi, and Tennessee River basins. This species lives in larger rivers and streams and typically prefer shallow areas with moderate to swift currents that flow over coarse sand and gravel. Sheepnose have also been found in mud, cobble, and boulders substrate and in deep runs in large rivers. (USFWS 2019)

The sheepnose is a medium-sized mussel growing to about 5 inches in length and has a thick, solid shell that is slightly longer than wide and somewhat inflated. The mussel’s shell is smooth and shiny but has dark concentric ridges. It is light yellow to a dull yellowish-brown coloration, lacking any lines or rays (USFWS 2019).

The sheepnose lifecycle is complex and includes a parasitic life stage. The male mussel discharges sperm into the river current, while females downstream siphon the sperm to fertilize the eggs. The eggs are then stored in gill pouches until the larvae hatch, where the females then expel the larvae. Larvae attach themselves via tiny clasping valves to the gills or fins of a host fish, grow into juveniles and detach from the host fish to settle into the substrate, where they live as an adult mussel. The only confirmed wild host fish species for sheepnose glochidia is the sauger, however several others have proven to be successful host species in laboratory studies. Sheepnose have been reported to live as long as 30 years (USFWS 2019).

Threats to this species include dams and reservoirs, which have flooded most of this mussel's habitat. Additionally, reservoirs act as barriers that isolate upstream populations of host fish species from downstream ones. Erosion due to land use has also impacted these mussels, as siltation in rivers and streams clogs the mussel's feeding siphons and may even bury mussels. Agricultural and industrial runoff has caused water pollution, where chemicals and toxic metals concentrate in the body tissues of mussels and eventually poison them. Additionally, zebra mussels have had negative impacts on sheepnose as with most other mussel species (USFWS 2019).

4.7.1.1.5 Purple Wartyback

The purple wartyback is mainly found in rivers where definite riverine conditions with a stronger current exist. It is round and up to five inches long. The shell is fairly thick, heavy and compressed. The anterior end is rounded, the posterior end somewhat angled. The dorsal margin is straight to slightly rounded and the ventral margin is broadly rounded. Umbos are low and only slightly raised above the hinge line. The beak sculpture has several wavy ridges. The periostracum (outer shell layer) has several pustules, and ridges on the dorsal wing. Younger specimens are yellowish to greenish brown, while older specimens tend to be more uniformly brown. On the inner shell, the left valve has two widely divergent, serrated, thin and low pseudocardinal teeth. The two lateral teeth are striated, and straight to slightly curved. The right valve has one heavy, triangular serrated pseudocardinal tooth with a small tooth on either side. The right, single lateral tooth is slightly curved and striated. The beak cavity is very deep. The nacre is almost always purple, and rarely white. (University of Michigan 2020a)

4.7.1.1.6 Monkeyface

The monkeyface mussel lives in rivers in areas of gravel or sand and gravel. Its thick shell has large knobs along a ridge on the posterior side. The anterior end is rounded while the posterior end is square and indented. The shell is brown. Young mussels may have a zig-zag pattern of green lines on the shell. The inside of the shell is white. This mussel grows to four inches in length. The name "monkeyface" comes from an indentation on the posterior margin of the shell that gives the appearance of the profile of a chimpanzee. (IDNR 2020)

4.7.1.1.7 Spotted Turtle

The spotted turtle is found in sedge meadows associated with prairies and marshes. It prefers clear, shallow water with many aquatic plants. The spotted turtle is aquatic, but it is often found on land near ponds or streams. (IDNR 2022b)

The spotted turtle averages three and one-half to four and one-half inches in length. It has yellow spots on a black shell. The spots often appear to be "painted" on. The shell has a large, immovable plastron (lower shell) that is dark in color. The turtle's head has scattered yellow spots on the upper side. (IDNR 2022b)

4.7.1.1.8 Massasauga

The massasauga lives in wet prairies, bogs and old fields. This venomous snake is active in the day, except in the hottest summer months when it becomes nocturnal. The massasauga may take shelter in crayfish burrows or other underground cavities. It may be seen basking on grass, near crayfish burrows or in other open locations. (IDNR 2022c)

The eastern massasauga averages 18 to 30 inches in length. It has a heat-sensitive pit on each side of the head between the eye and the nostril. Its head is flattened and much wider than the neck. The pupil of each eye is vertically elliptical. A rattle is present at the tip of the tail. Scales are keeled (ridged). A row of dark blotches is present down the back, and there are three rows of dark spots on the sides. The body is gray. (IDNR 2022c)

4.7.1.1.9 Ornate Box Turtle

The ornate box turtle lives in sand prairies in the northern part of Illinois. It is terrestrial and feeds early in the morning and again late in the day. It burrows in the ground to escape heat in summer and cold and lack of food in winter. It may also find shelter in grasses or in the burrows of other animals. This turtle may live for 30 years. (IDNR 2022d)

The ornate box turtle averages four to five inches in length. It has a high, domelike carapace (upper shell). The hinged plastron (lower shell) allows the animal to completely enclose itself in the shell. The shell is dark with markings on the carapace and plastron. Light lines radiate downward on each side of the carapace. (IDNR 2022d)

4.7.1.1.10 Kirtland's Snake

Kirtland's snake may be found in northeastern and central Illinois. This snake is aquatic, but it is often found on land. It lives in or near wet meadows, swamps, wooded hillsides and adjacent meadows, parks and urban areas. It can flatten its body when disturbed and hold this position for a long time. It hides under rocks, boards or in crayfish burrows during the day. This snake eats earthworms, leeches, fishes and slugs. (IDNR 2021a)

Kirtland's snake averages 14 to 18 inches in length. It has a red belly with a row of round, black spots down each side. The scales are keeled (ridged). The body is gray or brown above with four rows of black blotches that may be difficult to see. (IDNR 2021a)

4.7.1.1.11 Plains Hognose Snake

The plains hog-nosed snake lives in sand prairies, savannas and nearby woodlots. It is a slow-moving, terrestrial snake that uses mammal burrows to remain underground in cold or wet weather. This snake will flatten its head and neck, hiss and inflate its body with air when disturbed, hence its nickname of "puff adder." The plains hog-nosed snake eats amphibians, especially toads, lizards, mammals and ground-nesting birds. The saliva of this snake is toxic to prey. It is injected through the biting action of the large teeth in the back of the mouth. (IDNR 2022e)

The plains hog-nosed snake averages 15 to 25 inches in length. Its snout is upturned with a ridge on top. The belly is black. The scales are keeled (ridged). The body is gray-tan with brown blotches. (IDNR 2022e)

4.7.1.1.12 Northern Harrier

The northern harrier is a common migrant and uncommon winter and summer resident in Illinois. It winters in Central and South America. The northern harrier lives in marshes or fields. This bird eats amphibians, birds, insects, mammals and reptiles. It flies near the ground, gliding over an open field or marsh looking for food. Spring migration begins in late February. Nesting occurs from May through July. The nest is built on the ground and is made of twigs and grasses. (IDNR 2022f)

An adult northern harrier is 17 to 24 inches long. This hawk has a narrow body and wings and a long tail. There is a white-feathered patch at the base of the tail. The body of the male has gray feathers while the female has brown-and-cream, streaked feathers. The underside of the wing has a dark tip. (IDNR 2022f)

4.7.1.1.13 Black-Crowned Night Heron

The black-crowned night heron is a common migrant, uncommon summer resident and rare winter resident in Illinois. It lives in marshes, swamps, ponds, lakes and sewage lagoons. Migrating at night, the spring arrivals are first seen in Illinois in April. The black-crowned night heron nests in colonies in trees or marshes often with other heron species. The nest of sticks or reeds is constructed at a height of from ground level to 160 feet. (IDNR 2022g)

The black-crowned night heron averages 23 to 28 inches in length. This stocky-bodied, red-eyed bird has short legs and a thick, pointed bill. The adult has a cap of black feathers and black back feathers. The wing feathers are gray, and gray or white feathers cover the rest of the body. Legs are yellow-green except in the breeding season when they turn pink. Two, long white, plumes (feathers) extend back from the head during the breeding season. The immature bird is brown with white spots and streaks. (IDNR 2022g)

4.7.1.1.14 Osprey

The osprey migrates through Illinois and nests along large rivers and lakes. It winters in the southern United States near the Gulf of Mexico south to Chile. This bird is a carnivore, mainly eating fishes. It will also feed on amphibians, birds and crayfish. It hunts primarily from a common perch or nest in a large tree. Spring migration through Illinois begins in March. An osprey nest is built of dead limbs and

placed high in a tree, live or dead, that is located in standing water. The nest may be used for more than one year. Fall migration starts as early as July. (IDNR 2022h)

An adult osprey is 21 to 24 inches in length. The body has black or dark brown feathers above and white belly feathers. The head has white feathers with black patches on its face. There are black tips on the ends of the wing feathers. This bird has a wide, black band on the underside of its tail with a thin, white line at the tip of the tail. (IDNR 2022h)

4.7.1.1.15 Black-Billed Cuckoo

The black-billed cuckoo is a common migrant throughout Illinois and an uncommon summer resident in northern Illinois, decreasing southward in the state. It lives in forests, orchards and woodland edges. Spring migrants generally begin arriving in Illinois in May. The breeding season occurs from May through August. The nest is built in a tree from two to 20 feet above the ground. The nest is composed of sticks and lined with soft plant materials. Fall migrants usually begin arriving in Illinois from the north in August. The black-billed cuckoo feeds mainly on insects. (IDNR 2022i)

The black-billed cuckoo averages 11 to 12 inches in length. This long, slim bird has brown back feathers and white breast feathers. The bill is entirely black. A red eye ring may be seen on the adult, but it is absent in young cuckoos. Small, white spots are present on the tail. The male and female are similar in appearance. (IDNR 2022i)

4.7.1.1.16 Cerulean Warbler

The cerulean warbler is a migrant and summer resident statewide. It winters as far south as northern South America. Spring migrants begin arriving in Illinois in April. The nest is built in a large tree at a height of 20 to 60 feet above ground. It is composed of grasses, plant fibers, bark, mosses and lichens and lined with plant fibers, mosses and hair. Spider webs are collected and used to help hold the nest together on the outside. Fall migration begins in August. This bird lives in the treetops in bottomland forests and upland forests. Like all warblers, this bird feeds on insects. (IDNR 2022j)

The cerulean warbler averages four and one-half inches in length. The male has blue feathers on the back and white feathers underneath. He has a thin, black band that can be seen on the upper chest. The female has olive-green feathers on the back and white feathers underneath. She has a white line on the head directly above each eye. Both sexes have two, white bars on each wing. (IDNR 2022j)

4.7.1.1.17 Rafinesque's Big-Eared Bat

Rafinesque's big-eared lives in trees, abandoned buildings, mines and caves. It eats insects and flies late at night. This bat hibernates in mines and caves in southern Illinois. In the summer, these bats gather in colonies of less than 30 individuals. Mating occurs in the fall, winter or spring. Young are born in May or June, usually one per female. (IDNR 2022k)

Rafinesque's big-eared bat has brown-black fur. Its belly fur has white hairs with black roots. It has large ears (over one inch in length), each with a long and pointed tragus. The ears can be curled when resting or hibernating. Bumps formed by glands can be seen on either side of its nose. (IDNR 2022k)

4.7.1.1.18 Indiana Bat

The Indiana bat is found throughout the eastern half of the United States (USFWS 2006). They are small (weighing only one-quarter of an ounce) with dark brown to black fur. They have a wingspan of about 9 to 11 inches and are similar in appearance to many other related species but are distinguished by their foot structure and fur color variations (USFWS 2006).

Indiana bats hibernate during winter in caves (and occasionally in abandoned mines). They specifically prefer cool, humid caves with stable temperatures below 10°C and above freezing. During summer months, Indiana bats migrate to wooded areas to roost under loose tree bark on dead/dying trees and forage in or along the edges of forested areas (USFWS 2006).

Before entering hibernation, Indiana bats mate in the fall, and fertilization is delayed until the spring after they emerge from the caves. Females roost and give birth to a single pup in summer colonies (USFWS 2006).

The Indiana bat is endangered due to human disturbance, cave commercialization or improper gating, summer habitat loss and degradation, and pesticides and environmental contaminants (USFWS 2006).

4.7.1.1.19 Northern Long-Eared Bat

The northern long-eared bat occurs throughout the eastern and north-central United States and all Canadian provinces from the Atlantic to the southern Yukon Territory and British Columbia (USFWS 2015). It is medium-sized, measuring 3.0 to 3.7 inches and has a wingspan of approximately 9 or 10 inches. Fur color is medium to dark brown on the back and with tawny to pale-brown fur on the underside (USFWS 2015).

These bats spend winters hibernating in caves and mines, preferring hibernacula with very high humidity. During the summer months, they typically roost singly or in colonies underneath bark, in cavities, or in the crevices of trees. Breeding occurs in late summer or early fall and, after a delayed fertilization, pregnant females migrate to summer colonies where they roost and give birth to a single pup. Young bats start flying 18 to 21 days after birth. Adults can live up to 19 years (USFWS 2015).

Northern long-eared bats are active at dusk and fly through the understory of forested hillsides feeding on moths, flies, leafhoppers, caddisflies, and beetles, as well as insects they glean from vegetation and water (USFWS 2015).

White-nose syndrome presents the most severe threat to the northern long-eared bat. This disease has caused a 99 percent decline of northern long-eared bats in the northeast. Other impacts include human disturbance to hibernacula, loss or degradation of summer habitat due to highway or commercial development, timber management, surface mining, and wind facility construction and operation (USFWS 2015).

4.7.1.1.20 Franklin's Ground Squirrel

Franklin's ground squirrel has olive-gray body fur with scattered black hairs. The head has gray hairs, each with a white tip. The belly has cream-colored fur while the tail hairs are black and brown with a white tip. The tail is barely more than one-half the length of the head and body combined. This mammal has small, rounded ears. It lives in areas with grasses that are short enough so that it may see over them when standing upright on its hind legs. Franklin's ground squirrel eats carrion, mammals, insects, birds, bird eggs and plants. Its movements through grasses produce runways. Its burrow is dug underground, and the entrance has some dirt piled around it. The burrow is located deep enough to have temperatures above freezing in winter and to be able to be drained quickly and not flooded. This animal may produce a whistle or chirp when disturbed. When above ground, Franklin's ground squirrel may climb trees. This mammal is diurnal, being most active in the middle of the day. Mating occurs in May, and young are born from mid-May through mid-June. Franklin's ground squirrel hibernates for seven to eight months each year. (IDNR 2022l)

4.7.1.1.21 Monarch Butterfly

The monarch is a candidate species and not yet listed or proposed for listing. Consultation with U.S. Fish and Wildlife Service under section 7 of the Endangered Species Act is not required for candidate species, like the monarch. (USFWS undated)

Adult monarch butterflies are large and conspicuous, with bright orange wings surrounded by a black border and covered with black veins. The black border has a double row of white spots, present on the upper side of the wings. Adult monarchs are sexually dimorphic, with males having narrower wing venation and scent patches. The bright coloring of a monarch serves as a warning to predators that eating them can be toxic. (USFWS undated)

During the breeding season, monarchs lay their eggs on their obligate milkweed host plant (primarily Asclepias spp.), and larvae emerge after two to five days. Larvae develop through five larval instars (intervals between molts) over a period of 9 to 18 days, feeding on milkweed and sequestering toxic chemicals (cardenolides) as a defense against predators. The larva then pupates into a chrysalis before emerging 6 to 14 days later as an adult butterfly. There are multiple generations of monarchs produced during the breeding season, with most adult butterflies living approximately two to five weeks; overwintering adults enter into reproductive diapause (suspended reproduction) and live six to nine months. (USFWS undated)

Individual monarchs in temperate climates, such as eastern and western North America, undergo long-distance migration, and live for an extended period of time. In the fall, in both eastern and western North America, monarchs begin migrating to their respective overwintering sites. This migration can take monarchs distances of over 3,000 km and last for over two months. In early spring (February-March), surviving monarchs break diapause and mate at the overwintering sites before dispersing. The same individuals that undertook the initial southward migration begin flying back through the breeding grounds and their offspring start the cycle of generational migration over again. (USFWS undated)

4.7.1.1.22 Kankakee Mallow

The Kankakee Mallow has been found only in Kankakee County. Habitats consist of rocky riverbanks, woodland edges, open rocky woodlands, and abandoned fields. In all of these habitats the underlying bedrock of the thin soil consists of dolomite. Occasional wildfires are beneficial in maintaining populations of Kankakee Mallow, as they stimulate the germination of seeds and reduce competition from woody vegetation. This wildflower has been cultivated successfully in gardens. (Illinois Wildflowers undated)

This is a perennial wildflower about 2.5 to 6 feet tall that is either unbranched or sparingly branched. The central stem is light gray-green, densely pubescent, terete, and rather stout. Alternate leaves occur at intervals along this stem. Individual leaves are up to seven inches long and six inches across; they are oval-cordate in outline with three to seven palmate lobes and crenate-dentate margins. Usually the middle lobes of the leaves are larger than the lateral lobes. The upper surface of these leaves is medium green and hairless to sparsely pubescent, while their lower surface is light gray-green and pubescent. The petioles are up to six inches long, light gray-green, and pubescent. Sometimes short secondary stems with small leaves develop from the axils of the leaves on the central stem. Flowers are produced either individually or in clusters of two to three from the axils of the leaves along the upper half of each plant. Each flower is 1.25 to 2.5 inches across, consisting of five light pink petals (obcordate in shape), five light gray-green sepals (ovate in shape) that are joined together at the base, a central reproductive column, and three light gray-green floral bracts (linear in shape). Individual sepals are about one-half inch in length, while individual floral bracts are about the same length; both floral bracts and sepals are short-pubescent. The stamens are located along the outer half of the reproductive column, while the styles are located at its tip. The anthers of the stamens are pale yellow or white. (Illinois Wildflowers undated)

4.7.1.1.23 Eastern Prairie Fringed Orchid

This plant is 8 to 40 inches tall and has an upright leafy stem with a flower cluster called an inflorescence. The 3-to-8-inch lance-shaped leaves sheath the stem. Each plant has one single flower spike composed of 5 to 40 white flowers. Each flower has a three-part fringed lip less than 1 inch long and a nectar spur (tube-like structure) which is about 1 to 2 inches long. The eastern prairie fringed orchid occurs in a wide variety of habitats, from mesic prairie to wetlands such as sedge meadows, marsh edges, even bogs. It requires full sun for optimum growth and flowering and a grassy habitat with little or no woody encroachment. A symbiotic relationship between the seed and soil fungi, called mycorrhizae, is necessary for seedlings to become established. This fungus helps the seeds assimilate nutrients in the soil. (USFWS undated a)

4.7.1.2 Critical Habitat

Critical habitat is a term defined and used in the Endangered Species Act. It is specific geographic areas that contain features essential to the conservation of an endangered or threatened species and that may require special management and protection.

No critical habitat has been identified in the vicinity of the Kankakee Hydroelectric Project.

4.7.1.3 Migratory Birds

The USFWS IPaC search for the Kankakee Project area noted the following migratory birds of concern, due to their presence on the USFWS Birds of Conservation Concern (BCC) list or because they warrant special attention:

- American Golden-Plover (*Pluvialis dominica*) - a BCC throughout its range in the continental US and Alaska.
- Bald Eagle (*Haliaeetus leucocephalus*) – not a BCC in this area, but warrants attention because of the Eagle Act.
- Black-billed Cuckoo (*Coccyzus erythropthalmus*) – an Illinois State Threatened species (see above) and BCC throughout its range in the continental US and Alaska.
- Bobolink (*Dolichonyx oryzivorus*) – a BCC throughout its range in the continental US and Alaska.
- Cerulean Warbler (*Dendroica cerulea*) – an Illinois State Threatened species (see above) and BCC throughout its range in the continental US and Alaska.
- Eastern Whip-Poor-Will (*Antrostomus vociferus*) – a BCC throughout its range in the continental US and Alaska.
- Golden Eagle (*Aquila chrysaetos*) – not a BCC in this area, but warrants attention because of the Eagle Act.
- Henslow's Sparrow (*Ammodramus henslowii*) – a BCC throughout its range in the continental US and Alaska
- Kentucky Warbler (*Oporornis formosus*) - a BCC throughout its range in the continental US and Alaska.
- Lesser Yellowlegs (*Tringa flavipes*) - a BCC throughout its range in the continental US and Alaska.
- Prothonotary Warbler (*Protonotaria citrea*) - a BCC throughout its range in the continental US and Alaska.
- Red-headed Woodpecker (*Melanerpes erythrocephalus*) - a BCC throughout its range in the continental US and Alaska.
- Rusty Blackbird (*Euphagus carolinus*) – a BCC only in particular Bird Conservation Regions in the continental US.
- Short-billed Dowitcher (*Limnodromus griseus*) - a BCC throughout its range in the continental US and Alaska.
- Wood Thrush (*Hylocichla mustelina*) - a BCC throughout its range in the continental US and Alaska.

4.7.2 Resource Impacts

The Kankakee Project is operated in a run-of-river mode with releases coordinated with IDNR. Lands within the Project boundary are highly urbanized (paved and/or maintained turfgrass). Areas around the powerhouse are enclosed by fencing. The Project has been in-place for over 30 years. The existing wildlife and botanical resources in and around the Project have developed in response to its operation.

The Licensee proposes to continue operating the Project in a run-of-river mode in coordination with the IDNR during the next license term. As required by existing License Article 402, the Licensee also proposes to release a minimum flow of 500 cfs, or inflow, whichever is less, from the project reservoir during the next license term.

While the Licensee proposes to repair or replace existing turbine-generator equipment, this work will take place in the powerhouse. Therefore, no adverse effects on RTE species are expected.

The Licensee also proposes to provide Project electricity to its Stone Street Wastewater Lift Station via a new 12.5 kV overhead transmission line (on 40 to 45-foot-tall wood poles that resemble other overhead portions of the Project transmission line) that taps into the existing line on the south side of Stone Street and run west along Stone Street for approximately 600 feet before terminating at a transformer in the existing Stone Street Wastewater Lift Station. As these areas have already been heavily disturbed by residential and industrial development, no adverse effects on RTE species are expected.

The Licensee proposes to implement a bat protection measure (tree clearing along the existing and proposed transmission line route under the supervision of a City arborist only during winter months to avoid potential impacts on roosting bats.

4.8 RECREATION AND LAND USE

4.8.1 Existing Environment

4.8.1.1 Regional Recreation Facilities and Use

4.8.1.1.1 Midewin National Tallgrass Prairie

The Midewin National Tallgrass Prairie (MNTP) is a tallgrass prairie reserve and US National Grassland operated by the United States Forest Service (USFS). The first national tallgrass prairie designated in the US and the largest conservation site in northeast Illinois, it is located on the site of the former Joliet Ammunition Plant between the towns of Elwood, Manhattan and Wilmington in western Will County.

Nearly 9,000 acres of MNTP are open to the public with 33 miles of trail for hiking, biking and horseback riding. The Midewin Welcome Center offers interpretive signs and displays that highlight the cultural and natural history of the land. Visitors to the welcome center will find out more about Midewin's history and mission and how restoration is occurring. The welcome center has a variety of programs and tours from April to October. During the winter months a lecture on nature and conservation related topics is held in the conference room. (USFS 2022)

4.8.1.1.2 Kankakee River State Park

Enveloping both sides of the Kankakee River for approximately 11 miles in an area six miles northwest (downstream) of the City of Kankakee, this state park comprises about 4,000 acres (see **Figure 4.8-1**). Kankakee River State Park offers anglers, canoeists, hunters, campers, hikers, bicyclists, and other outdoor enthusiasts an unspoiled setting. The park has boat ramps at the Warner Bridge Day Use Area and the Area 9 parking lot on the south side of the river. Seasonal hunting programs include archery deer, waterfowl, and upland game hunting. For camping enthusiasts, Kankakee River State Park's popular campgrounds offer more than 200 campsites. Group and equestrian campgrounds are also available. (IDNR 2022m)

4.8.1.1.3 Momence Wetlands Land and Water Reserve

Managed by the IDNR, this 519-acre reserve located along the Kankakee River three to four miles west of the Indiana border is used primarily by deer, turkey, squirrel, and waterfowl hunters. The reserve includes 60 acres of upland woods, 400 acres of bottomland forest/wetland, 21 acres of grass meadow, and several parking areas. (IDNR 2022n)

4.8.1.1.4 Aroma Land and Water Reserve

This 140-acre reserve is managed by the Kankakee River Valley Forest Preserve District (KRVFPD). A 1.2-mile walking trail winds through several different types of natural areas, including high quality forest, prairie and wetland ecosystems. It also has nearly one-quarter mile of Kankakee River frontage and the associated floodplain forest. Approximately 40 percent of the reserve is wetland that lies within the floodplain of the Kankakee River. In the spring the wet oak forest gives a spectacular wildflower display, while the wetland and sand prairie are the most colorful in the summer. There is ample parking in a lot on Hieland Road next to the playground. (KRVFPD 2022)

4.8.1.1.5 Shannon Bayou

This 46-acre preserve is located in Aroma Park along the Kankakee River. Managed by KRVFPD, it includes an environmental education center offering programs about natural history, ecology, and preservation of open space in the Kankakee River Valley. A walking trail features plantings of many native trees and plants, including native tallgrass prairie species and a butterfly garden of native plants. The site includes a three-quarter mile asphalt and fine gravel walking trail, a picnic shelter, and picnic tables. (KRVFPD 2022)

4.8.1.1.6 Gooseberry Island State Natural Area

This 13.7-acre preserve is an island in the Iroquois River (upstream of its confluence with the Kankakee River) that is best reached by boat from the access point at the bridge over the Kankakee River in Aroma Park. The island, managed by IDNR, is known for its exceptionally large trees and essentially undisturbed forest communities. The inaccessibility of the site apparently prevented logging and other types of disturbances from occurring. The island also has a rich herbaceous flora. (IDNR 2022o)

4.8.1.1.7 Gar Creek Trail and Prairie Restoration

Approximately 85 acres in size, this KRVFPD site is located adjacent to Kankakee Community College. A 16-acre restored tall grass prairie was planted in 1992. A three-quarter mile trail begins at the prairie and winds along Gar Creek through oak woodland and down to the banks of the Kankakee River. At river's edge, the trail connects with the Kankakee Riverfront Trail Project, which starts at the River Road Ball Diamonds. It then continues through Kankakee Community College, Kankakee River Valley Forest Preserve, and Shapiro Development Center. The trail connects through the City of Kankakee and runs through the Perry Farm, which is a part of the Bourbonnais Township Park District. (KRVFPD 2022)

4.8.1.2 Illinois SCORP

The 2021-2025 State Comprehensive Outdoor Recreation Plan (SCORP, IDNR 2021b) included the results of a 2020 resident survey of outdoor recreation demand. Among the over 2,700 Illinois residents that responded to the survey, nearly all agreed that they value outdoor recreation resources. Respondents evaluated the importance of recreation opportunities in their everyday lives with response categories that ranged from “not at all important” to “very important.” Results indicated that 83.4% of respondents believe outdoor recreation plays an important role in their everyday life, which is comparable to how residents rated the overall importance of outdoor recreation in a similar 2014 survey.

The average number of times survey respondents participated in outdoor recreation during the previous year (2019) was as follows (in part):

- Pleasure Walking (25)

- Running/Jogging (10)
- Bicycling (On Roads) (10)
- Bicycling (On Trails) (6)
- Off-Highway Vehicle Use (5)
- Playground Use (5)
- Golf (5)
- Outdoor Basketball (5)
- Swimming (Outdoor Pool) (5)
- Wildlife/Bird Watching (5)
- Scenic Drives (5)
- Hiking (5)
- Fishing (4)
- Hunting (4)
- Swimming (Lake or River) (4)
- Picnicking (4)

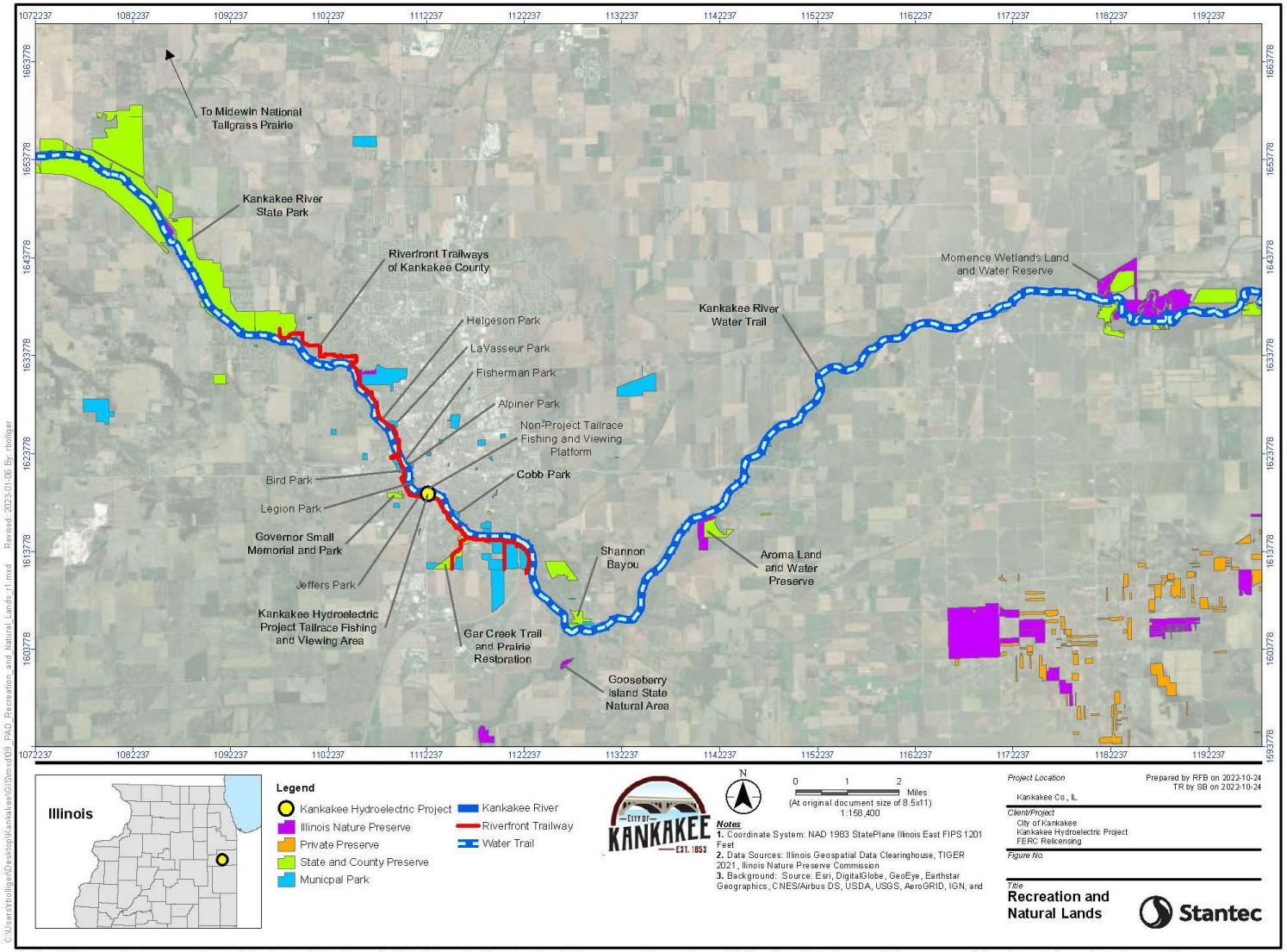


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Figure 4.8-1. State, Municipal, Public, and Private Managed Recreation and Natural Areas in the Kankakee Project Region

4.8.1.3 Recreation Facilities and Use in the Kankakee Project Vicinity

4.8.1.3 .1 Cobb Park

Located approximately one mile upstream of Kankakee Dam on the north bank of the river, this non-Project Kankakee Valley Park District (KVPD 2020) site provides the following:

- Rentable Pavilion
- Open Space / Field
- Playground
- Restrooms
- Tennis Courts
- Walking/Exercise Trails

Cobb Park is situated within the Riverview Historic District, which has been included on the National Register of Historic Places (see 4.10.1 for additional information).

4.8.1.3.2 Kankakee Hydroelectric Project Tailrace Fishing and Viewing Area

The Kankakee Project includes one developed recreational facility located within the Project Boundary. The facility is maintained and operated by the Licensee and open to the public (**Figure 4.8-3**). No user fees are collected. The recreation area is located immediately downstream of the Project's powerhouse along the left (south) shoreline. A lighted asphalt parking area (with accessible stall) and lighted concrete foot paths (accessible) and stairway lead to a lighted, concrete tailrace fishing platform with wooden railings and seats. Tailrace fishing is accessible at various tailwater surface elevations. The Project recreation area is operated by the Licensee and no user fees are collected.

Photographs of the Project recreational facility are included in **Appendix E.**

No recent recreational use information is available for this area. FERC granted the Licensee exemption from recreational use monitoring and reporting (Form 80) requirements in 1997.

Because the existing turbine-generator units are currently non-operational, tailrace recreational fishing success and user numbers are reduced, relative to periods when the units are in operation. The Licensee proposes to monitor use of the Project tailrace fishing and viewing area following repair or replacement of the turbine-generators to obtain more representative use data. Recreation use monitoring and reporting methods will be included in a Recreation Management Plan, which is to be prepared as part of FERC relicensing.

4.8.1.3.3 Non-Project Tailrace Fishing and Viewing Platform

A non-Project, public fishing and viewing platform is located withing the Project Boundary. This platform is maintained and operated by the Licensee and open to the public (**Figure 4.8-3**). No user fees are collected. The platform is located immediately downstream of Kankakee Dam along the right (north) shoreline. It was built atop the foundation of the former McGrew Flour Mill, which was demolished in 1950 (see Section 4.10 for additional information). The concrete and decorative patterned concrete platform is surrounded by decorative metal railings, some of which allow wheelchair users to fish. Decorative lighting and a gate that allows public access to the river's edge via a metal staircase are also provided. No vehicle parking is provided at this location.

Photographs of the non-Project fishing and viewing platform are included in **Appendix E**.

4.8.1.3.4 Jeffers Park

Located approximately 200 feet downstream of Kankakee Dam on the south bank of the river, this non-Project Kankakee Valley Park District (KVPD 2020) site provides the following:

- Rentable Building
- Basketball Courts
- Boat Access
- Open Space / Field
- Playground
- Walking/Exercise Trails

4.8.1.3.5 Governor Small Memorial and Park

This non-Project State Historic Site and Park is located approximately one-half mile downstream of Kankakee Dam and south of the river, near the intersection of West Water Street and South 8th Avenue. This non-Project Kankakee Valley Park District (KVPD 2020) site provides the following:

- Governor Lennington Small Historical Marker
- Rentable Building
- Civic Auditorium
- Open Space / Field
- Walking/Exercise Trails
- Kankakee County Historical Society

Additional Information regarding this site is contained in **Section 4.10.1**.

4.8.1.3.6 Legion Park

This non-Project park is located about 1,500 feet downstream of Kankakee Dam on the right (east) bank of the river between West River Street and West Hickory Street. The Project transmission line runs through this KVPD park in an underground conduit. A rentable pavilion open space/field, and playground are found at this location (KVPD 2020).

4.8.1.3.7 Bird Park

This non-Project park, located approximately 3,500 feet downstream of Kankakee Dam on the left (west) bank of the river between the Station Street and the railroad bridge north of Court Street, is owned and operated by KVPD. Facilities at this park (KVPD 2020) include:

- Rentable Building
- Rentable Pavilion
- Band Shell
- Boat Access
- Open Space / Ballfields

- Playground
- Restrooms
- River Front
- Walking/Exercise Trails

4.8.1.3.8 Alpiner Park

Across the river (east bank) from Bird Park, south of Court Street, is Alpiner Park. The Project transmission line runs through this non-Project park in an underground conduit. Facilities at this park (KVPD 2020), which is owned and operated by KVPD include:

- Baseball Fields
- Playground
- Press Box
- Restrooms
- River Front

4.8.1.3.9 Fisherman Park

Across the river (east bank) from the Bird Park ballfields, north of Court Street and south of West Bridge Street, is Fisherman Park. This non-Project park, owned and operated by KVPD, includes open space/field and riverfront access (KPVD 2020)

4.8.1.3.10 LaVasseur Park

Located along the right (east) bank of the river North of Gregg St and south of North 5th Street is KVPD's LaVasseur Park. This non-Project park includes baseball fields, open space, walking/exercise trails (KPVD 2020). The Project transmission line runs through this non-Project park in an underground conduit.

4.8.1.3.11 Helgeson Park

Located on the right (east) bank of the river between LaVasseur Park and the KRMA WWTP is Helgeson Park, which is owned and operated by the Village of Bradley. This non-project park includes open space, picnic areas, walking paths, and a playground. The Project transmission line runs through this non-Project park in an underground conduit.

4.8.1.3.12 Kankakee River Water Trail

In 2016, the National Park Service (NPS) announced the addition of the Kankakee River to the National Water Trails System. The National Water Trails System is a distinctive national network of exemplary water trails that are cooperatively supported and sustained. The Kankakee River is one of 21 designated National Water Trail Systems in the United States. The river from Momence to the confluence of the Illinois River allows boating and paddling through urban and suburban areas, with a long run through Kankakee State Park before meeting the Illinois River near Channahon. Currently, through trips are not advised between Aroma Park (just south of the confluence of the Iroquois and Kankakee Rivers) and Bird Park in Kankakee due to the hydroelectric dam and the Canadian National Railroad Bridge in downtown Kankakee. Portage around the dam is difficult and requires a mile walk from the boat ramp upstream of the dam to the next launch spot. (City of Kankakee 2018)

4.8.1.3.13 Riverfront Trailways of Kankakee County

The Riverfront Trailways of Kankakee County was a vision that began in 1999 with the formulation of the Kankakee County Greenways and Trails Plan, a regional trail and open space corridor that would provide environmental, recreational, and aesthetic enhancements to the County. Phase 1 of the Riverfront Trailways, funded through federal grants, local financial partners, and private donors, became a reality when it opened to the public in 2009. Local financial partners included the City of Kankakee, Kankakee Community College, Kankakee County, Kankakee River Valley Forest Preserve, Kankakee Valley Park District, the Village of Bourbonnais, and the Village of Bradley, with easements provided by Aqua Illinois and Shapiro Developmental Center. Today, the regional trail connects Illinois Route 57 in southwest Kankakee, through Bradley, and into Bourbonnais. The fourth phase will connect Perry Farm Park in Bourbonnais north to Kankakee State Park. (City of Kankakee 2018)

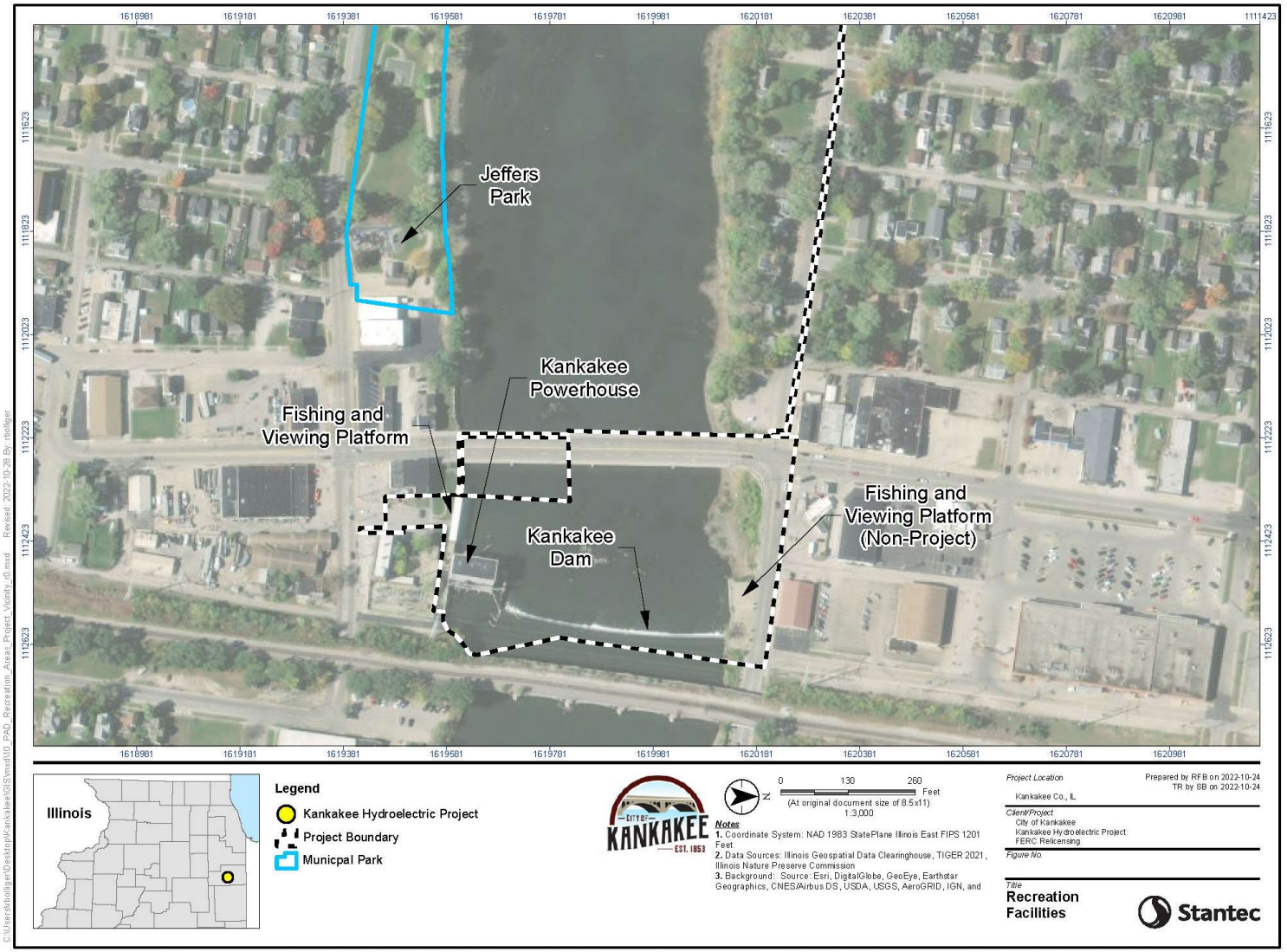

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Figure 4.8-2. Recreational Facilities in the Kankakee Project Vicinity

4.8.1.4 Recreation Needs

4.8.1.4.1 Illinois SCORP

Findings from the 2020 Illinois Outdoor Recreation Survey (SCORP, IDNR 2021) indicated that more than two-thirds of Illinoisans stated there should be more public access to lakes, rivers, and streams and more than 80 percent stated that wildlife habitats should be protected and restored, and over 90 percent stated outdoor recreation is important to their quality of life. Moreover, findings from recreation provider and resident surveys pointed to the following priority areas:

- Promote Health Benefits of Nature-Based Activities
- Encourage Communities to Plan for Active Transportation
- Develop Park and Nature-Based Outdoor Recreation Programs that Foster Social Interaction

4.8.1.4.2 Needs Identified During Pre-PAD Consultation

The City's (Licensee) Kankakee Riverwalk Master Plan (City of Kankakee 2018) proposed a series of pathways, developments, and in-river whitewater paddling course (controlled access and non-motorized boat passage in the vicinity of the Project dam) to reinvigorate downtown and raise awareness of its existing public outdoor spaces. Implementation of the Riverwalk Master Plan is ongoing and may or may not include creation of the whitewater paddling course. Development of the whitewater paddling course, if undertaken, would be done in such a way so as not to jeopardize operation of the Kankakee Hydroelectric Project.

4.8.1.5 Federal and State Wild and Scenic Rivers, Trails, and Wilderness Areas

No portions of the Kankakee Project area or vicinity have been included for study or designated as National Trails, Wilderness, or for inclusion in any federal or state recreational, wild, or scenic rivers system.

4.8.1.6 Land Use and Management

While Kankakee County is primarily agricultural in character, land use in the Project vicinity is mainly urban (commercial, industrial, and high-density residential development) and open space (KVPD) parkland (**Figure 4.8-4**).

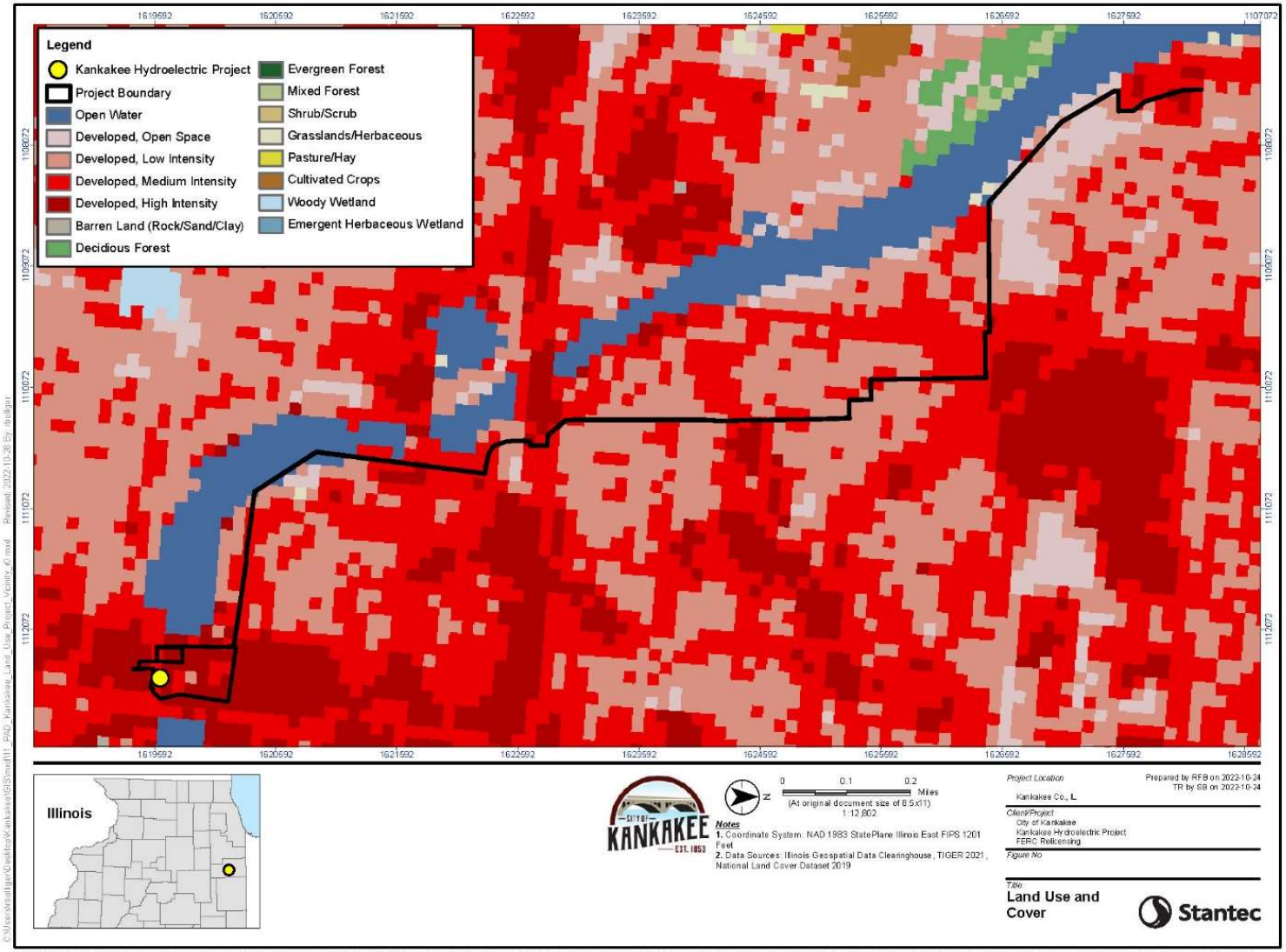

Figure 4.8-3. Land Use and Cover in the Kankakee Project Vicinity

4.8.1.7 Shoreline Buffer Zone

The Kankakee Pool (Reservoir) is controlled by Kankakee Dam. The dam is owned by IDNR and leased to the Licensee for hydropower purposes. Releases from the dam are made in coordination with IDNR.

The Project boundary does not include the Kankakee Reservoir and the Licensee does not provide public access to the reservoir shorelines. The Project powerhouse is used for generating purposes and "off limits" for security and safety reasons.

A Project tailrace fishing and viewing area is located immediately downstream of the powerhouse. A non-Project fishing and viewing platform is located immediately downstream of Kankakee Dam along the right (north) shoreline. It was built atop the foundation of the former McGrew Flour Mill, which was demolished in 1950.

The Licensee prohibits boating activities near the Kankakee Dam and Project powerhouse. In accordance with the Project's FERC Public Safety Plan a boat barrier is installed above the dam each spring and removed each fall. "Danger" signs are located downstream of the dam/powerhouse on the north and south shorelines. "Designated No Boating Zone" signs were installed upstream and downstream of the dam/powerhouse during 2022.

There is no shoreline management plan or policy regarding permitting of piers, docks, or other shoreline facilities.

4.8.2 Resource Impacts

The proposed action consists of continued operation and maintenance of the existing Project in essentially the same manner as at present. There are no planned changes to the Project's existing run-of-river mode of operation (with river flow releases made in coordination with IDNR).

The Kankakee Hydroelectric Project has been in-place for over 30 years and the existing recreational resources and land uses in and around the Project have developed in response to its operation.

As described above, the region surrounding the Kankakee Hydroelectric Project contains numerous outdoor recreational facilities and opportunities. The Project provides additional Kankakee River shoreline fishing opportunities and compliments the supply and provision of abundant recreation opportunities in the region.

The Project provides a recreational facility and viewing area immediately downstream from the powerhouse along the left (south) shoreline at the Project's tailrace. The Licensee proposes to continue operation and maintenance of this existing recreational facility, which is not currently overused, during the term of the next license in accordance with existing License Article 405.

While the Licensee proposes to repair or replace existing turbine-generator equipment, this work will take place in the powerhouse and no adverse effects on recreational resources are expected.

The Licensee also proposes to provide Project electricity to its Stone Street Wastewater Lift Station via a new 12.5 kV overhead transmission line (on 40 to 45-foot-tall wood poles that resemble other overhead portions of the Project transmission line) that taps into the existing line on the south side of Stone Street and run west along Stone Street for approximately 600 feet before terminating at a transformer in the existing Stone Street Wastewater Lift Station. As no recreational resources are present in this area, no adverse effects are expected.

Consistent with Article 401 of the existing FERC license, the Licensee proposes to operate the project in a run-of-river mode.

The Licensee proposes to conduct a recreation facility inventory, condition assessment, and a demand/need assessment to meet FERC relicensing requirements, further define existing conditions, and inform impact assessment. Recreation issues (if any) identified during these studies, along with a plan for maintaining and operating the existing recreation facility, will be addressed in a Recreation

Management Plan, which is to be prepared as part of FERC relicensing. As described previously, recreation use monitoring and reporting methods will also be included in this Recreation Management Plan.

4.9 VISUAL RESOURCES

4.9.1 Existing Environment

About 94 percent of the county, including the Project area, is nearly level to gently sloping. The rest is rolling to steep and is in morainal areas or on the prominent sandhills. The highest elevation, about 740 feet above sea level, is in the northeastern part of the county. The lowest elevation, about 550 feet, is at the point where the Kankakee River leaves the county at the Will County line. (NRCS undated)

Kankakee County's history is rooted in agriculture. In the early 1900s, native prairie was converted to productive farmland through the use of varying drainage techniques. Today, approximately 81 percent of the County's land is used for farming purposes. Contributing factors of farmland productivity are the creeks, wetlands, and floodplains of the Kankakee River watershed. (Kankakee County 2005)

The Kankakee River in Kankakee County is a scenic, cultural, and recreational resource. The reach between the state line and Momence is a naturally meandering stream with a sandy bottom, traversing an area of timber and relatively undisturbed wetlands, commonly called the "Momence Wetlands." (IDENR 1981)

Between Aroma Park and the city of Kankakee, a deep-water area called Six Mile Pool (actually, 4.7 miles long) was formed by the construction of the Project's Kankakee Dam. The deeper water has long been used for recreational boating, and fine homes have been built in the surrounding area. The river in this area is noted for high water quality, excellent sport fishing, and scenic beauty. (IDENR 1981)

The Riverview National Historic District is located about one-half mile upstream of Kankakee Dam on the right (north) shoreline. This 78.2-acre area is the oldest intact residential neighborhood in the city. The district includes 118 contributing buildings, including two Frank Lloyd Wright houses. (Wikipedia undated). Additional information regarding this district is included in **Section 4.10.1.2**.

The Kankakee State Hospital National Historic District is located about one-half mile upstream of Kankakee Dam on the left (south shoreline). This 119-acre area includes the hospital, built in the late 19th and early 20th century, associated structures, and surrounding landscapes. The district includes 19 contributing buildings (NPS 1995). Additional information regarding this district is included in **Section 4.10.1.3**.

The County and City of Kankakee experienced major economic declines in the late 1970s and early 1980s, which resulted in employment, population decline, and associated urban decay. The County rebounded in the 1990s with a focus on transportation, food, and chemical industries. In recent decades the County has undergone economic restructuring. Growth pressures from the greater Chicago Metropolitan area have begun to spur a new of cycle residential and nonresidential investment in the County. (Kankakee County 2005).

Approximately one-quarter mile north of Kankakee Dam and hydroelectric project is the 40-acre Kankakee Downtown National Historic District. The district includes 73 buildings which form the commercial and governmental center of the city, most of which are grouped along Court Street and Schuyler Avenue. Kankakee's Courthouse Square and the 1908 Kankakee County Courthouse are part of the district; other government buildings in the district include Kankakee's post office, police and fire station, and armory. Many popular architectural styles of the nineteenth and twentieth centuries are represented in the district; the Italianate, Neoclassical, and Art Deco styles are among the most common. (Wikipedia undated a). Additional information regarding this district is included in **Section 4.10.1.1**.

Immediately upstream of Kankakee Dam is an attractive concrete arched railroad bridge, currently owned and operated by the Canadian National Railway Company.

The Project's Kankakee Dam is a 440-foot-long and ten-foot-high concrete dam topped by a two-foot-high inflatable rubber dam, which allows the Licensee to vary the surface of the reservoir. The rubber dam is fully inflated during normal Project operation and a 500 cfs, or inflow, whichever is greater, flow maintained over the Kankakee Dam (in accordance with existing License Article 402) to protect fishery resources in the Kankakee River. Flow over the dam enhances its appearance.

Founded on the remains of an old powerplant, the Kankakee Hydroelectric Project powerhouse and associated facilities are comprised of forms, lines, colors, and textures that blend into the surrounding urban landscape. The existing concrete powerhouse enclosure is approximately 103 feet long and 40 feet wide.

A 2.4-mile-long, 12.5 kV transmission line extends from the powerplant to the KRMA WWTP in Kankakee, passing through commercial, industrial, high density residential, and open space (KVPD parkland) land uses. The transmission line crosses the Kankakee River in a conduit attached to South McMullen Drive (Edward McBroom) Bridge and is, therefore, visually hidden from view. and terminates at the KRMA WWTP located along the river downstream near West Brookmont Boulevard. Overhead portions of the transmission line are suspended on standard 40-45-foot-tall wooden poles that resemble other existing power poles in the area. Five segments of the transmission line (1.5-miles total, including the bridge crossing in a conduit) are located underground in existing rights-of-way, while the remaining four segments (0.9-mile total) are located aboveground.

Underground segments of the transmission line include: West of Fifth Avenue and south of Station Street (including Legion Park, managed by Kankakee Valley Park District (KVPD)); North of Station Street, including the Court Street and railroad crossings; North of Park Drive and South of 735 North Ninth Avenue; and Gregg Street west of Kennedy Drive, including LaVasseur Park (KVPD), Helgeson Park (Village of Bradley), and the KRMA WWTP. Overhead segments of the transmission line include: West River Street between 295 West River Street and Legion Park; North of Court Street and south of the railroad, in the alleyway between Eight Avenue and Ninth Avenue; North of 735 North Ninth Avenue and west of Kennedy Drive, in the alleyway between Ninth Avenue and Tenth Avenue; and Gregg Street east of Kennedy Drive.

Photographs of the Kankakee Hydroelectric Project, Project and non-Project recreational facilities in the Project vicinity, and the Project electrical transmission line are contained in **Appendix E**.

4.9.2 Resource Impacts

The proposed action consists of continued operation and maintenance of the existing Project in essentially the same manner as at present. There are no planned changes to the Project's existing run-of-river mode of operation (with river flow releases made in coordination with IDNR). Similarly, there are no planned changes to the Project's minimum flow (500 cfs or inflow, whichever is less) requirement.

The Kankakee Hydroelectric Project has been in-place for over 30 years and the existing visual resources in and around the Project have developed in response to its operation.

While the Licensee proposes to repair or replace existing turbine-generator equipment, this work will take place in the powerhouse. Therefore, no adverse effects on visual resources are expected.

The Licensee also proposes to provide Project electricity to its Stone Street Wastewater Lift Station via a new 12.5 kV overhead transmission line (on 40 to 45-foot-tall wood poles that resemble other overhead portions of the Project transmission line) that taps into the existing line on the south side of Stone Street and run west along Stone Street for approximately 600 feet before terminating at a transformer in the existing Stone Street Wastewater Lift Station. Construction of this new transmission line would result in the clearing of up to seven (7) mature ornamental trees located in the front yards of homes located on Stone Street. Consistent with Article 403 of the existing license, the Licensee will file an erosion control plan as it relates to construction of the proposed transmission line. Also, consistent with Article 404 of the existing license, the Licensee will file a visual character incompatibility minimization plan for the proposed transmission line. Temporary construction activities would be visible

to homeowners on Stone Street. Following the completion of construction, the line would exhibit forms, lines, colors, and textures that are similar to the numerous other transmission lines in the vicinity.

The City Department of Public Works has a tree planting program. A City arborist will determine trees to be removed and replaced as part of the proposed Stone Street transmission line extension.

4.10 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

4.10.1 Existing Environment

In considering a new license for the Project, FERC has the lead responsibility for compliance with applicable federal laws, regulations, and policies pertaining to historic properties, including the National Historic Preservation Act of 1966 (NHPA), as amended. Section 106 of the NHPA (Section 106) requires federal agencies to take into account the effects of their undertakings on historic properties and to afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment.

The Section 106 process (defined at 36 CFR Part 800) is intended to accommodate historic preservation concerns with the needs of federal undertakings through a process of consultation with agency officials, the State Historic Preservation Office(s) (SHPO[s]), federally recognized Indian Tribes, and other parties with a potential interest in an undertaking's effects on historic properties. The goals of the Section 106 process are to:

- Identify historic properties that may be affected (directly and/or indirectly) by an undertaking;
- Assess the effects of an undertaking on historic properties; and
- Seek ways to avoid, minimize, or mitigate adverse effects on historic properties through consultation.

Historic properties are defined in 36 CFR Part 800 as any pre-contact or historic period district, site, building, structure, or individual object listed in or eligible for inclusion in the National Register of Historic Places (NRHP). This term includes artifacts, records, and remains that are related to and located within historic properties, as well as properties of traditional religious and cultural importance (often referred to as "traditional cultural properties" or TCPs) that meet the NRHP criteria.

The Secretary of the Interior has established the criteria for evaluating properties for inclusion in the National Register (36 CFR Part 60). In accordance with the criteria, properties are eligible if they are significant in American history, architecture, archaeology, engineering, or culture. The quality of significance is present in historic properties that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- Are associated with events that have made a significant contribution to the broad patterns of our history; or
- Are associated with the lives of persons significant in our history; or
- Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant or distinguishable entity whose components may lack individual distinction; or
- Have yielded or may be likely to yield information important in prehistory or history.

4.10.1.1 Kankakee Project Vicinity

In anticipation of Kankakee Project relicensing, the Licensee conducted a review of publicly available information from National Register of Historic Preservation (NPS), Illinois State Historic Preservation Office (SHPO, IDNR), and other relevant records to identify previously reported historic and archaeological resources within the Project's vicinity.

The Kankakee region was used by Illini and Miami Indians at the time of the first European contact in the 1670s and 1680s. By 1685, the Miami were sufficiently numerous that the Kankakee River was called the River of the Miami. Kickapoo and Mascouten also were in the region from 1679 until the 1760s. Potawatomi Indians hunted along the Kankakee River in the 1760s, and by the 1770s the Potawatomi, Ottawa and Chippewa nations - "The Three Fires" - dominated the area. The most extensive village was "Rock Village" or "Little Rock Village" inside the present-day Kankakee River State Park near the mouth of Rock Creek. In 1830, it was the site of the last great Indian Council. Following the Black Hawk War in 1832, the Potawatomi ceded all of their land along the Kankakee and Illinois rivers to the United States. Most Potawatomi left the area by the end of the decade, except for Chief Shaw-waw-nas-see, whose grave is commemorated by a boulder along the nature trail at Rock Creek. (IDNR 2022, About Kankakee River)

Noel Le Vasseur and other fur traders, including Hubbard Chabare and Bourbonnais, traded with the Potawatomi along the Kankakee and Iroquois rivers in the 1820s. When the Potawatomi left the area in 1838, Le Vasseur persuaded a number of his fellow French Canadians to emigrate from Quebec to the Bourbonnais Township area. (IDNR 2022p)

4.10.1.1.1 Downtown Kankakee National Historic District

As noted in **Section 4.9.1**, the 40-acre downtown district of Kankakee is on the National Register of Historic Places (NRHP). The district, located about one-quarter mile north of the dam and hydroelectric project, includes 73 buildings which form the commercial and governmental center of the city, most of which are grouped along Court Street and Schuyler Avenue. While development in the district began in the 1850s, the oldest surviving building in the district is from 1864; the newest contributing buildings are from the mid-twentieth century. Kankakee's Courthouse Square and the 1908 Kankakee County Courthouse are part of the district; other government buildings in the district include Kankakee's post office, police and fire station, and armory. Most of the district's other buildings are one- to three-story brick or stone commercial buildings. Many popular architectural styles of the nineteenth and twentieth centuries are represented in the district; the Italianate, Neoclassical, and Art Deco styles are among the most common. The district was added to the HRHP in 2018. (Wikipedia undated, Kankakee Downtown Historic District accessed 11/28/2022)

4.10.1.1.2 Riverview National Historic District

The Riverview National Historic District is located about one-half mile upstream of Kankakee Dam on the right (north) shoreline. River Street, a major traffic bearing east-west artery, forms the northern boundary of the district. South of River Street, lot sizes and houses generally become larger. Wildwood Avenue, the eastern border of the district, borders Cobb Park. The Kankakee River forms the western diagonal border of the district. Within these boundaries, the character of the district is achieved by a variety of unifying elements: age and styles of housing stock, absence of intrusions, generous and uniform setbacks, proximity to the river and to Cobb Park, and random growth of indigenous oaks. (NPS 1986)

This 78.2-acre area is the oldest intact residential neighborhood in the city. The district includes 118 contributing buildings, including two Frank Lloyd Wright houses. (Wikipedia undated, Kankakee Riverview Historic District accessed 11/28/22). The district was added to the NRHP in 1986.

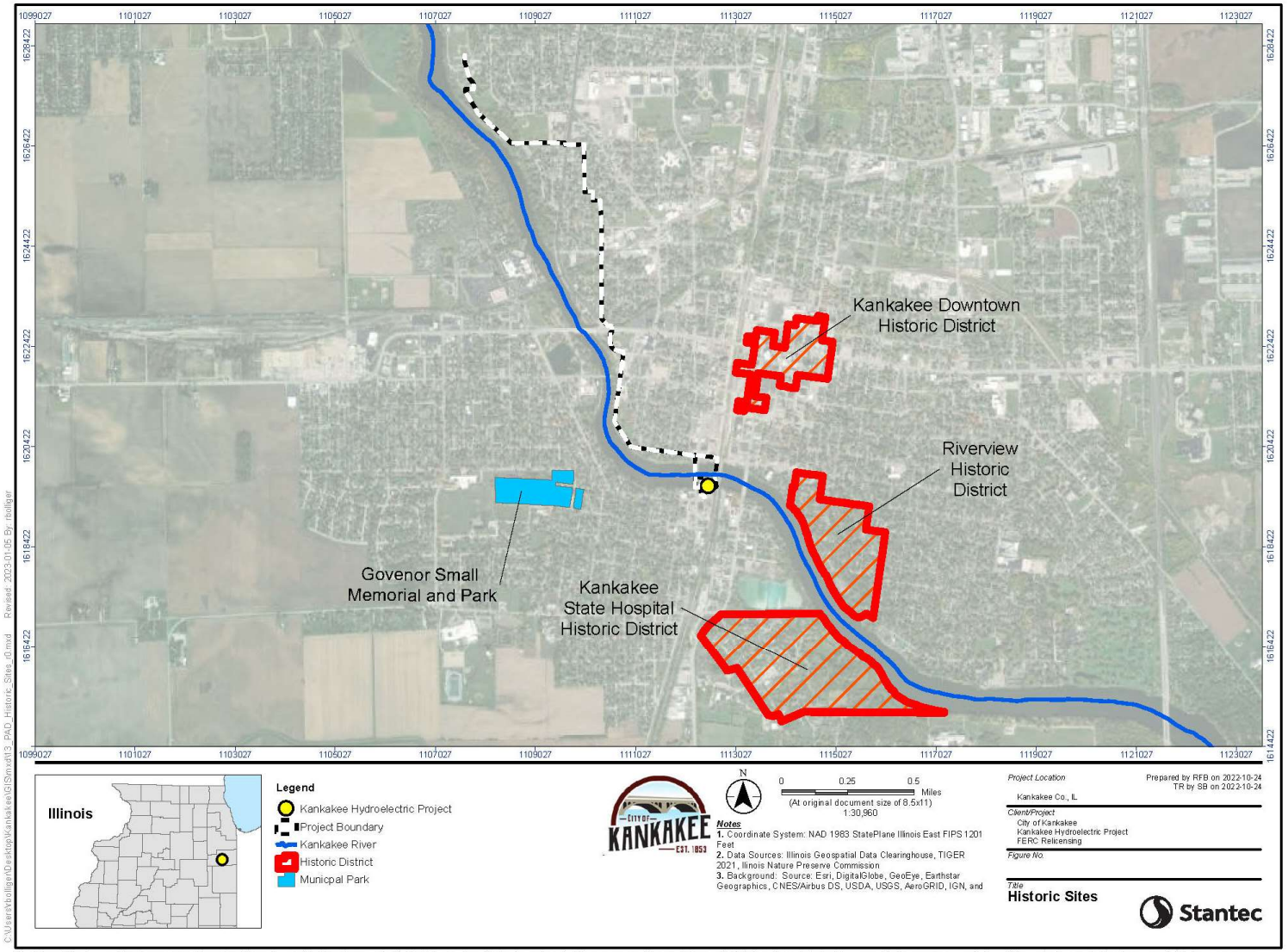

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Figure 4.10-1. Historic Districts and Sites in Kankakee Project Vicinity

4.10.1.1.3 Kankakee State Hospital National Historic District

The Kankakee State Hospital National Historic District is located about one-half mile upstream of Kankakee Dam on the left (south shoreline). This 119-acre area includes structures built in the late 19th and early 20th century, along with surrounding landscapes. The district includes 19 contributing buildings (NPS 1995). The district was added to the NRHP in 1995.

The site plan published in 1883, shows buildings laid out in a symmetrical pattern within broadly curving roads. The main building, the Administration Center, is a four-story structure with a stately seven story tower which has been an identifying icon for the people of Kankakee ever since its erection. A standard "Kirkbride model" hospital contained wings to either side for patients and was on the main axis of the complex. Two broad avenues present the appearance of village streets, bordered with sidewalks and shaded by elms and maples. Elegant streetlamps and park furniture completed the desired village atmosphere. About twenty detached cottages, four of which remain, reflected the new philosophy of a village atmosphere for the treatment of the mental illness. (NPS 1995)

The architecture of the central portion of the district is unified by the continuous use of rusticated limestone, low pitched roofs with diamond shaped shingles, and the sparse use of Late Victorian medieval ornament - sometimes Gothic Revival, sometimes Romanesque Revival. In areas bordering the central portion the architecture is almost all classically inspired. Here the buildings are usually one story, the material is red brick, roofs are again flat or very low-pitched, shingles are red, the windows are sometimes Palladian, and the white limestone ornament shows a free, but simplified version of the various Classical orders. (NPS 1995)

Significant aspects of the original landscape plan remain, such as the winding roads, the oval turnaround, an ash grove with bandstand, a pine grove, and other plantings. (NPS 1995)

4.10.1.1.4 Governor Small State Historic Site

This State Historic Site and Park is located approximately one-half mile downstream of Kankakee Dam and south of the river, near the intersection of West Water Street and South 8th Avenue. An interpretive plaque honors Lennington Small, the 26th governor of Illinois. Born in 1862, Small grew up on a Kankakee County farm, becoming a banker and farmer before entering politics. Small served as a state senator and then Illinois treasurer before his election to the governor's office in 1920. He died in 1936. Nine years later, the Governor Small Commission was formed and soon purchased two plots of land for the memorial park and plaque. Today the area is home to the Kankakee County Historical Society. (IDNR undated)

4.10.1.2 Kankakee Project Area

Based on a review of publicly available information, there are no designated historical or archaeological sites within the Kankakee Project boundary.

Kankakee Dam was originally constructed of wood in 1858. It was replaced by a concrete structure in 1906. A two-foot-high inflatable rubber dam with a steel plate fixed to the upstream face of the bladder was installed in 2004. This rubber dam replaced a series of old, wooden flashboards that regularly washed out during high-flow events.

The existing Kankakee Project powerhouse was built upon the foundation of a former hydroelectric powerhouse. During the 1950s, the old powerhouse was abandoned, machinery removed, and superstructure razed. The five substructure turbine bays and draft tubes were filled with rubble from the demolition. In 1984 the old powerhouse substructure was found to be sound and suitable for development of the new (existing) concrete powerhouse enclosure and related hydroelectric equipment. The concrete floor and subfloor were removed together with rubble from the bays and draft tubes, and accumulated sediment in the intake area. Three draft tubes were enlarged and extended into the tailrace area to improve turbine efficiency. The fourth and fifth draft tube bays were abandoned. Headgate bulkheads were patched and resurfaced. New stoplog slots, bar screens, and shut-off gates were installed.

Vertical concrete walls protect the intake and tailrace channels, upstream and downstream from the powerhouse, minimizing the chance that erosion exposes cultural resources.

A non-Project, public fishing and viewing platform is located withing the Project Boundary. This platform is maintained and operated by the Licensee and open to the public. The platform is located immediately downstream of Kankakee Dam along the right (north) shoreline. It was built atop the foundation of the former McGrew Flour Mill, which was demolished in 1950. The mill initially was erected in 1841 about two miles downstream from where Kankakee would be settled a decade later. The wooden gristmill building was later sold and moved to Kankakee Dam to provide a reliable source of waterpower. In the 1870s, James McGrew harnessed the power of moving water for use by industries located to the north and west of the mill. Using a series of belts and pulleys connected to a waterwheel beneath the mill, McGrew furnished power to at least five factories. In 1890, a flour dust explosion set fire to McGrew's Mill. While the wooden section of the mill was destroyed, the stone portion remained. The mill was rebuilt entirely of stone and continued to operate until 1907, when the property was sold and converted from grain milling to electrical power generation, using five waterwheels and three reciprocating engines. A separate system, waterwheel and one engine, was dedicated to generating direct current to run the Kankakee Electric Railway's trolley cars. In 1910 and 1911 the property was sold again. In 1914 the Public Service Company of Northern Illinois shut down the waterwheels and generators and switched operations to the new plant recently completed on the south bank of the river (i.e., the site of the current hydroelectric project). Equipment was removed and the millrace closed off. For the next 36 years, prior to its demolition in 1950, the building was used for storage. (Daily Journal 2019)

4.10.2 Resource Impacts

While the Licensee proposes to repair or replace existing turbine-generator equipment, no adverse effects on historical, archaeological, or cultural resources are expected.

The Licensee also proposes to provide Project electricity to its Stone Street Wastewater Lift Station via a new 12.5 kV overhead transmission line that taps into the existing line and run west along Stone Street for approximately 600 feet before terminating at a transformer in the existing lift station. As these areas have already been heavily disturbed by residential and industrial development, no adverse effects are expected.

Consistent with Article 403 of the existing FERC license, the Licensee proposes to file an erosion control plan as it relates to construction activity at the project.

Consistent with Article 406 of the existing FERC license, the Licensee proposes to comply with the Programmatic Agreement entered with the State Historic Preservation Officer.

The Project will undergo cultural resources consultation under the Section 106 process. The Section 106 process (defined at 36 CFR Part 800) is intended to accommodate historic preservation concerns with the needs of federal undertakings through a process of consultation with agency officials, the SHPO, federally recognized Indian Tribes, and other parties with a potential interest in an undertaking's effects on historic properties.

Because the Project boundary (including the proposed transmission line to the Stone Street Lift Station) encompasses all lands that are necessary for Project purposes, all Project-related operations, potential enhancement measures, and routine maintenance activities associated with the implementation of a license issued by the Commission are expected to take place within the Project boundary. The proposed APE is consistent with the potential scope of Project effects and the manner in which the Commission has defined the APEs for other hydroelectric relicensings.

While the continued operation and maintenance of the Kankakee Project (including the proposed repair or replacement of turbine-generators and proposed installation of the Stone Street Wastewater Lift Station transmission line) is not anticipated to have adverse impacts on historical, archaeological, or cultural resources, the Licensee proposes to perform a Phase 1 cultural resources survey of the Project area/APE to confirm this finding. The primary objective of a Phase 1 cultural resources survey, which would be performed in accordance with state and federal regulations, is to identify and record all cultural

resources within a project area. Additional information concerning this Phase 1 survey is included in Section 5 of this PAD.

4.11 TRIBAL RESOURCES

4.11.1 Existing Environment

As noted above (**Section 4.10.1.1**), the Kankakee region was used by Illini, Miami, Kickapoo, Mascouten, Potawatomi, Ottawa, and Chippewa Indians between the time of first European contact and the 1820s.

No federal or state recognized tribes currently exist in Illinois. Also, no tribes appear on FERC's Initial Consultation Contact List for FERC hydropower licensing in Illinois. However, in an attempt to engage tribes potentially interested in the FERC relicensing of the Kankakee Hydroelectric Project this PAD will be transmitted to the US Bureau of Indian Affairs (BIA), Advisory Council on Historic Preservation (ACHP), Illinois SHPO, and to the following tribes with potential interests in the Project vicinity:

- Citizen Potawatomi Nation, Oklahoma
- Forest County Potawatomi Community of Wisconsin
- Hannahville Indian Community, Michigan
- Kickapoo Tribe of Indians of the Kickapoo Reservation in Kansas
- Kickapoo Tribe of Oklahoma
- Little Traverse Bay Bands of Odawa Indians, Michigan
- Menominee Indian Tribe of Wisconsin
- Miami Tribe of Oklahoma
- Peoria Tribe of Indians of Oklahoma
- Prairie Band Potawatomi Nation

4.11.2 Resource Impacts

The Kankakee Hydroelectric Project is operated in a run-of-river mode with releases coordinated with the IDNR. While steeply sloping, the Kankakee River shoreline in the Project area is lined with concrete walls and/or stone riprap to protect it from erosion. No areas of soil erosion or instability are present in Project area portions of the Kankakee River shoreline.

The Licensee proposes to repair or replace existing turbine-generator equipment. This work would be done within the powerhouse. Therefore, no adverse effects on tribal resources are expected.

The Licensee also proposes to provide Project electricity to its Stone Street Wastewater Lift Station via a new 12.5 kV overhead transmission line (on 40 to 45-foot-tall wood poles that resemble other overhead portions of the Project transmission line) that taps into the existing line on the south side of Stone Street and run west along Stone Street for approximately 600 feet before terminating at a transformer in the existing Stone Street Wastewater Lift Station. As these areas have already been heavily disturbed by residential and industrial development, no adverse effects are expected.

Consistent with Article 401 of the existing FERC license, the Licensee proposes to operate the project in a run-of-river mode.

Consistent with Article 403 of the existing FERC license, the Licensee proposes to file an erosion control plan as it relates to construction activity at the project.

Consistent with Article 406 of the existing FERC license, the Licensee proposes to comply with the Programmatic Agreement entered with the State Historic Preservation Officer.

The Project will undergo cultural resources consultation under the Section 106 process. The Section 106 process (defined at 36 CFR Part 800) is intended to accommodate historic preservation concerns with the needs of federal undertakings through a process of consultation with agency officials, the SHPO, and federally recognized Indian Tribes.

4.12 SOCIOECONOMIC RESOURCES

4.12.1 Existing Environment

Kankakee County is a small urban county in the northeast section of Illinois. There was a slight decrease in population growth within Kankakee County from 2010 to 2020. The 2021 population was 106,601. The largest portion of residents are 5 to 17 years of age, the second highest portion is over the age of 65 years. The racial composition of Kankakee County has is 79.1% white and 15.2% black. The percent of the population that is Hispanic/ Latino is 10%. A larger percentage of older Kankakee County residents (65 or older) are living in poverty than in Illinois, as a whole. (PHC 2018)

Sixteen percent of the Kankakee County population are living in poverty. Poverty is disproportionally high among blacks, Native Americans/ Alaskan Natives, individuals with mixed race, and those with Hispanic/ Latino ethnicity. The unemployment rate Unemployment rate (5.9 percent in August 2022) has been declining since 2013, but remains higher than Illinois and the United States, as a whole. Low-income individuals are linked to services, including Medicaid, Supplemental Nutritional Assistance Program (SNAP), and free/reduced lunch for children. The percent of children eligible for free/reduced lunch is 57%. (PHC 2018)

The City of Kankakee is a regional center for agricultural trade such as soybeans, corn, vegetables, and flowers. The city also manufactures a variety of items including pharmaceuticals, chemicals, flooring products, metal products and processed foods. The major sectors for employment in Kankakee are healthcare, education, government, accommodation and food services, manufacturing, social assistance, finance and insurance, and construction. (CityTownInfo.com 2020, https://www.citytowninfo.com/places/illinois/kankakee/work, accessed 12/6/2022)

Some of the popular jobs in the City of Kankakee primarily filled by college graduates are teachers, wholesale and manufacturing sales representatives, managers, accountants and auditors, social and human service assistants, librarians, financial managers, and pharmacists. (CityTownInfo.com 2020, https://www.citytowninfo.com/places/illinois/kankakee/work, accessed 12/6/2022)

Major employers in the City of Kankakee include:

- Riverside Healthcare
- Shapiro Developmental Center
- Provena St. Mary's Hospital
- CIGNA Healthcare
- Baker & Taylor Co
- Sears Logistics Services
- CSL Behring
- Cognic Corp

- Armstrong World Industries
- Esselte
- Nucor Steel
- Van Drunen Farms
- Merisant
- Flanders-Precisionaire
- Peddinghaus Corp
- Valspar
- Micro Inks Corp
- Olivet Nazarene University
- Kankakee Community College

Opportunity Zones are an economic development tool that allows people to invest in distressed areas. Their purpose is to spur economic growth and job creation in low-income communities while providing tax benefits to investors. The only federally designated opportunity zone within Kankakee County, the Kankakee Riverfront Opportunity Zone (see **Figure 4.12-1**) includes the Downtown Kankakee Historic District, the Kankakee Riverfront, and much of the Kankakee Hydroelectric Project area.

In addition to its status as a federally designated opportunity zone, the Kankakee Riverfront is a Tax Increment Financing (TIF) District (see **Section 6.2** and **Figure 4.12-1** for additional information). By establishing this TIF District the City may facilitate physical improvements, remove blighted conditions, and provide funding sources for improvement projects.

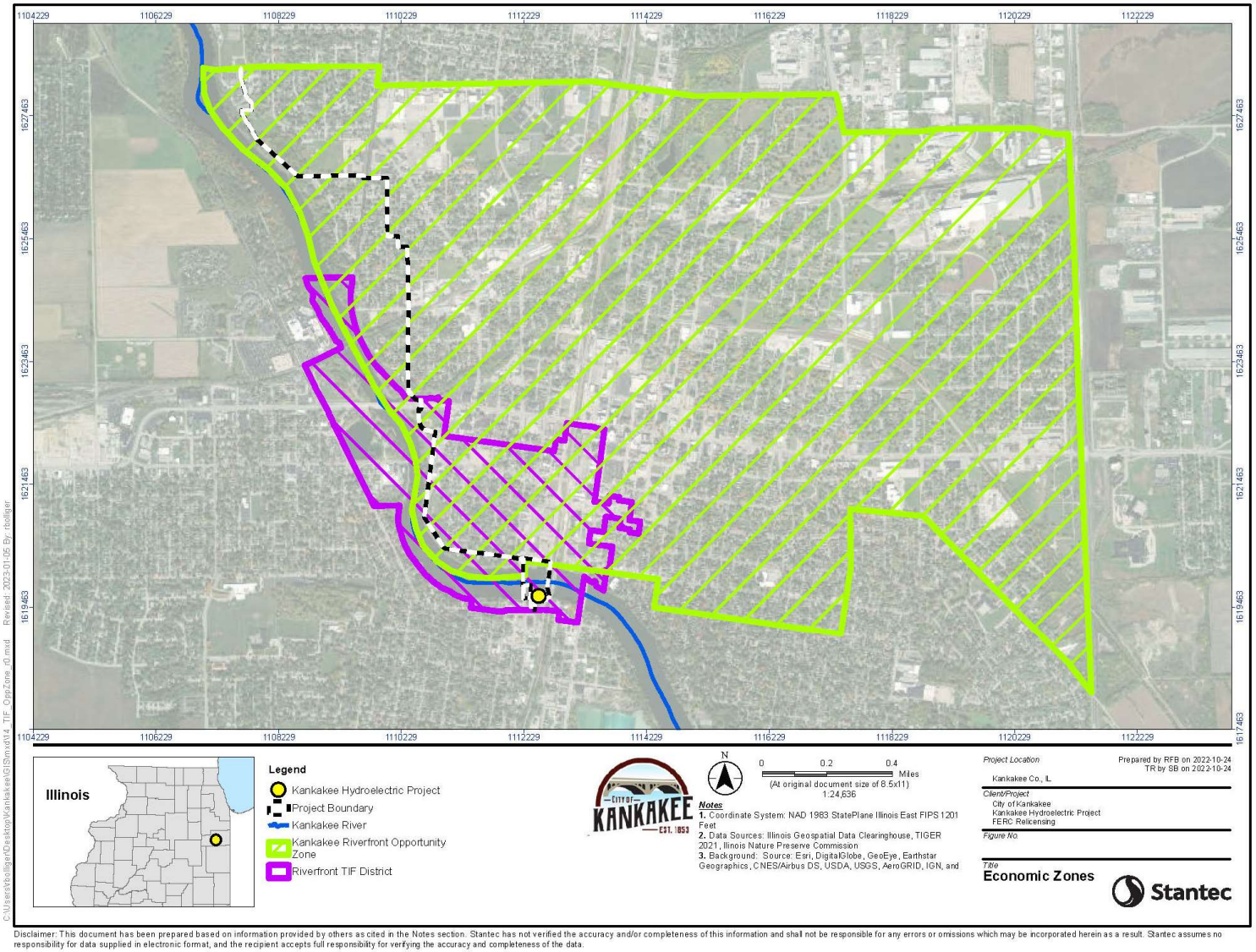

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Figure 4.12-1. Opportunity Zone and TIF District in Kankakee Project Vicinity

4.12.2 Resource Impacts

The Project is linked to the City Environmental Services Utility Sewer Services SCADA system and operated remotely from the City Environmental Services Utility Sewer Services. The dam, powerhouse, and related features are visually inspected by City staff once or twice daily. Power produced by the Kankakee Hydroelectric Project is used to offset electricity costs related to operation of the KRMA WWTP, which is jointly owned by the City of Kankakee and the villages of Aroma Park, Bourbonnais and Bradley.

The existing run-of-river Project has beneficial effects on socioeconomic resources. The Six Mile Pool (actually, 4.7 miles long) was formed by the construction of the Project's Kankakee Dam. The deeper water has long been used for recreational boating and fishing.

The Project has been in-place for over 30 years and the existing socioeconomic resources for the area around the Project have developed in response to its operation. No potential adverse issues related to socioeconomic resources were identified during development of this PAD.

The pool serves as a scenic backdrop for many residences, including those that make up the Riverview National Historic District, which is located on the north shore. The pool also serves as a scenic backdrop for the Kankakee State Hospital National Historic District, which is located on the south shore.

As required by existing License Article 402, the Project releases a minimum flow of 500 cfs, or inflow, whichever is less, from the project reservoir over the dam. This minimum release enhances the visual appearance of the dam, which is visible from numerous key view locations throughout downtown Kankakee, including Project and non-Project viewing platforms near the south and north abutments of the dam, respectively. This minimum release also enhances fish and aquatic resources in the river downstream of the dam.

In addition, the Project's fishing and viewing platform, located immediately downstream of the powerhouse, provides recreational opportunities to citizens of the City and County.

To meet current Commission guidelines regarding Environmental Justice the Licensee will prepare a table of racial, ethnic, and poverty statistics for each state, county, and census block group within the geographic scope of analysis (i.e., areas within one mile of the existing Project boundary). Additional information concerning this table and associated socioeconomic study efforts is contained in **Section 5.0.**

5.0 PRELIMINARY ISSUES AND PROPOSED STUDIES

5.1 GEOLOGY AND SOILS

5.1.1 Preliminary Issues

The Kankakee Hydroelectric Project is operated in a run-of-river mode with releases coordinated with the IDNR in accordance with the original FERC License. The Kankakee River shoreline in the Project vicinity is lined with concrete walls and/or stone riprap to protect it from erosion. No areas of shoreline erosion or instability are apparent. Similarly, no known areas of erosion have been noted during transmission line operations and maintenance activities.

The Licensee proposes to provide Project electricity to its Stone Street Wastewater Lift Station to offset electrical use and associated pumping costs at this facility. A new 12.5 kV overhead transmission line on wood poles would tap into the existing line and run west along Stone Street for approximately 600 feet before terminating at a transformer in the existing lift station. Ground disturbance will be limited to digging holes for transmission line poles.

Consistent with Article 403 of the existing FERC license, the Licensee proposes to file an erosion control plan as it relates to construction activity at the project.

5.1.2 Proposed Studies

No studies are proposed specific to geology and soils. Existing information is adequate to describe these resources and to assess potential impacts in relicensing.

5.2 WATER RESOURCES

5.2.1 Preliminary Issues

The Licensee (City) does not currently monitor water temperature or dissolved oxygen (DO) at the Project intake or tailrace discharge as part of its existing FERC license. As the turbine-generator units are currently out of service, any monitoring of the Project intake or discharge would not provide insight into Project effects (if any) on water quality.

As described above, all water temperature and DO measurements taken during 2020 and 2021 complied with State of Illinois standards.

Consistent with Article 401 of the existing FERC license, the Licensee proposes to operate the project in a run-of-river mode.

Consistent with Article 402 of the existing FERC license, the Licensee proposes to release a minimum flow of 500 cfs, or inflow, whichever is less, from the project reservoir.

Consistent with Article 403 of the existing FERC license, the Licensee proposes to file an erosion control plan as it relates to construction activity at the project.

5.2.2 Proposed Studies

The Licensee proposes to monitor water temperature and dissolved oxygen in the Project discharge following repair or replacement of the turbine-generators. Proposed monitoring and reporting methods will be detailed in a Water Quality Monitoring Plan to be prepared as part of FERC relicensing.

5.3 FISHERIES AND AQUATIC RESOURCES

5.3.1 Preliminary Issues

Run-of-river operations and required minimum flows result in little Project impact on the aquatic community. The Project was constructed at an existing dam so impacts to resources created by impounding a free-flowing river are not directly related to Kankakee Project operations. Potential fishery concerns primarily deal with maintaining angling opportunities as the Kankakee tailrace provides a popular and productive fishing area.

Consistent with Article 401 of the existing FERC license, the Licensee proposes to operate the project in a run-of-river mode.

Consistent with Article 402 of the existing FERC license, the Licensee proposes to release a minimum flow of 500 cfs, or inflow, whichever is less, from the project reservoir.

Consistent with Article 403 of the existing FERC license, the Licensee proposes to file an erosion control plan as it relates to construction activity at the project.

5.3.2 Proposed Studies

No studies are proposed specific to fisheries and aquatic resources. Existing information is adequate to describe these resources and to assess potential impacts in relicensing.

5.4 WILDLIFE AND BOTANICAL RESOURCES

5.4.1 Potential Issues

The Licensee proposes to continue operating the Project in a run-of-river mode in coordination with IDNR. No changes in vegetative maintenance of the existing transmission line corridor are proposed, and no impacts are anticipated from continued Project operation.

The Licensee also proposes to provide Project electricity to its Stone Street Wastewater Lift Station via a new 12.5 kV overhead transmission line on 40 to 45-foot-tall wood poles that resemble other overhead portions of the Project transmission line. The new line would tap into the existing line on the south side of Stone Street and run west along Stone Street for approximately 600 feet before terminating at a transformer in the existing Stone Street Wastewater Lift Station. These areas have already been heavily disturbed by residential and industrial development. Construction of this new transmission line would result in the clearing of up to seven (7) mature ornamental trees located in the front yards of homes located on Stone Street. All clearing would be performed under the supervision of the City Department of Public Work's certified arborist.

Much of the existing transmission line associated with the Kankakee Hydroelectric Project is located underground, including nearly all areas located in open space (parks). The transmission line crossing of the Kankakee River is in a conduit attached to the South McMullen Drive Bridge, rather than on overhead poles or towers. In addition, nearly all overhead portions of the existing transmission line (with the notable exception of the Soldier Creek crossing) are on relatively low (40 to 45-foot-tall) wooden poles located in industrial, commercial, and dense residential (in paved alleyways and along paved roadways) areas with limited bird habitat value. Therefore, the Licensee believes that the Project's adverse impact to birds is minimal.

The City Department of Public Works has a tree planting program. A City arborist will determine trees to be removed and replaced as part of the proposed Stone Street transmission line extension.

The Licensee proposes to implement a bat protection measure (tree clearing along the existing and proposed transmission line route under the supervision of a certified arborist only during winter months to avoid potential impacts on roosting bats).

5.4.2 Proposed Studies

No studies are proposed specific to wildlife and botanical resources. Existing information is adequate to describe these resources and to assess potential impacts in relicensing.

5.5 WETLANDS, RIPARIAN & LITTORAL HABITAT

5.5.1 Potential Issues

The Kankakee Project is operated in a run-of-river mode with releases coordinated with IDNR. In accordance with existing License 402, the Project release a minimum flow of 500 cfs, or inflow, whichever is less, from the project reservoir to the river below. The Project has been in-place for over 30 years. The existing wetland, riparian, and littoral habitats in and around the Project have developed in response to its operation.

The Licensee proposes to continue operating the Project in a run-of-river mode in coordination with IDNR during the next license term. Due to the limited wetland and riparian habitat located within the

Project boundary, ongoing vegetative maintenance activities, and the existing Project's run-of-river operation, no impacts are anticipated from continued Project operation.

5.5.2 Proposed Studies

No studies are proposed specific to wetlands, riparian, or littoral habitat. Existing information is adequate to describe these resources and to assess potential impacts in relicensing.

5.6 RARE, THREATENED, AND ENDANGERED SPECIES

5.6.1 Potential Issues

The Kankakee Project is operated in a run-of-river mode with releases coordinated with IDNR. Lands within the Project boundary are highly urbanized (paved and/or maintained turfgrass). Areas around the powerhouse are enclosed by fencing. The Project has been in-place for over 30 years. The existing wildlife and botanical resources in and around the Project have developed in response to its operation.

The Licensee proposes to continue operating the Project in a run-of-river mode in coordination with the IDNR during the next license term. As required by existing License Article 402, the Licensee also proposes to release a minimum flow of 500 cfs, or inflow, whichever is less, from the project reservoir during the next license term.

The Licensee proposes to provide Project electricity to its Stone Street Wastewater Lift Station via a new 12.5 kV overhead transmission line on 40 to 45-foot-tall wood poles that tap into the existing line and runs west for approximately 600 feet before terminating at a transformer in the existing lift station. As these areas have already been heavily disturbed by residential and industrial development, no adverse effects on RTE species are expected.

The Licensee proposes to prepare and implement a bat protection measure (tree clearing under the supervision of a certified arborist only during winter months to avoid potential impacts on roosting bats) as part of relicensing.

5.6.2 Proposed Studies

No studies are proposed specific to RTE species. Existing information is adequate to describe these resources and to assess potential impacts in relicensing.

5.7 RECREATION, LAND USE AND MANAGEMENT

5.7.1 Potential Issues

The region surrounding the Kankakee Hydroelectric Project contains numerous outdoor recreational facilities and opportunities. The Project provides additional Kankakee River shoreline fishing opportunities and compliments the supply and provision of abundant recreation opportunities in the region.

The Project provides a recreational facility and viewing area immediately downstream from the powerhouse along the left (south) shoreline at the Project's tailrace. The Licensee proposes to continue operation and maintenance of this existing recreational facility, which is not currently overused, during the term of the next license.

In accordance with existing License Article 405 the Licensee proposes to continue over the term of the new license to operate and maintain the Project tailrace fishing and viewing area.

While the Licensee proposes to repair or replace existing turbine-generator equipment, this work will take place in the powerhouse and no adverse effects on recreational resources are expected.

The Licensee also proposes to provide Project electricity to its Stone Street Wastewater Lift Station via a new 12.5 kV overhead transmission line that taps into the existing line and runs west along Stone Street for approximately 600 feet before terminating at a transformer in the existing Stone Street Wastewater Lift Station. As no recreational resources are present in this area, no adverse effects are expected.

Consistent with Article 401 of the existing FERC license, the Licensee proposes to operate the project in a run-of-river mode.

5.7.2 Proposed Studies

The Licensee proposes to conduct a recreation facility inventory, condition assessment, and a demand/need assessment to meet FERC relicensing requirements, further define existing conditions, and inform impact assessment. Recreation issues (if any) identified during these studies, along with a plan for maintaining and operating the existing recreation facility, will be addressed in a Recreation Management Plan, which is to be prepared as part of FERC relicensing. Recreation use monitoring and reporting (to be performed after repair or replacement of the turbines-generators) methods will also be included in this Recreation Management Plan.

5.8 VISUAL RESOURCES

5.8.1 Potential Issues

The proposed action consists of continued operation and maintenance of the existing Project in essentially the same manner as at present. There are no planned changes to the Project's existing run-of-river mode of operation (with river flow releases made in coordination with IDNR). Similarly, there are no planned changes to the Project's minimum flow (500 cfs or inflow, whichever is less) requirement.

While the Licensee proposes to repair or replace existing turbine-generator equipment, this work will take place in the powerhouse. Therefore, no adverse effects on visual resources are expected.

The Licensee also proposes to provide Project electricity to its Stone Street Wastewater Lift Station via a new 12.5 kV overhead transmission line (on 40 to 45-foot-tall wood poles that resemble other overhead portions of the Project transmission line) that taps into the existing line on the south side of Stone Street and run west along Stone Street for approximately 600 feet before terminating at a transformer in the existing lift station. Construction of this new transmission line would result in the clearing of up to seven (7) mature ornamental trees located in the front yards of homes located on Stone Street. Consistent with Article 403 of the existing license, the Licensee will file an erosion control plan as it relates to construction of the proposed transmission line. Also, consistent with Article 404 of the existing license, the Licensee will file a visual character incompatibility minimization plan for the proposed transmission line. Temporary construction activities would be visible to homeowners on Stone Street. Following the completion of construction, the line would exhibit forms, lines, colors, and textures that are similar to the numerous other transmission lines in the vicinity.

The City Department of Public Works has a tree planting program. A City arborist will determine trees to be removed and replaced as part of the proposed Stone Street transmission line extension.

5.8.2 Proposed Studies

No studies are proposed specific to visual resources. Existing information is adequate to describe this resource and to assess potential impacts in relicensing.

5.9 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

5.9.1 Potential Issues

While the Licensee proposes to repair or replace existing turbine-generator equipment, no adverse effects on historical, archaeological, or cultural resources are expected.

The Licensee also proposes to provide Project electricity to its Stone Street Wastewater Lift Station via a new 12.5 kV overhead transmission line that taps into the existing line and runs west along Stone Street for approximately 600 feet before terminating at a transformer in the existing lift station. As these areas have already been heavily disturbed by residential and industrial development, no adverse effects are expected.

Consistent with Article 403 of the existing FERC license, the Licensee proposes to file an erosion control plan as it relates to construction activity at the project.

Consistent with Article 406 of the existing FERC license, the Licensee proposes to comply with the Programmatic Agreement entered with the State Historic Preservation Officer.

5.9.2 Proposed Studies

The Project will undergo cultural resources consultation under the Section 106 process. The Section 106 process (defined at 36 CFR Part 800) is intended to accommodate historic preservation concerns with the needs of federal undertakings through a process of consultation with agency officials, the SHPO, federally recognized Indian Tribes, and other parties with a potential interest in an undertaking's effects on historic properties.

Because the Project boundary (including the proposed transmission line to the Stone Street Lift Station) encompasses all lands that are necessary for Project purposes, all Project-related operations, potential enhancement measures, and routine maintenance activities associated with the implementation of a license issued by the Commission are expected to take place within the Project boundary. The proposed APE is consistent with the potential scope of Project effects and the manner in which the Commission has defined the APEs for other hydroelectric relicensings.

While the continued operation and maintenance of the Kankakee Project (including the proposed repair or replacement of turbine-generators and proposed installation of the Stone Street Wastewater Lift Station transmission line) are not anticipated to have adverse impacts on historical, archaeological, or cultural resources, the Licensee proposes to perform a Phase 1 cultural resources survey of the Project area/APE to confirm this finding. The primary objective of a Phase 1 cultural resources survey, which would be performed in accordance with state and federal regulations, is to identify and record all cultural resources within a project area. A report, conforming to the guidelines of the Archaeological Resources Management Reports, would be prepared and included in Licensee's draft license application (DLA) and final license application (FLA) as "privileged" information, and would only be provided to FERC, SHPO, and interested Native American tribal chairs or their designated tribal representatives.

5.10 TRIBAL RESOURCES

5.10.1 Potential Issues

No federal or state recognized tribes currently exist in Illinois. Also, no tribes appear on FERC's Initial Consultation Contact List for FERC hydropower licensing in Illinois. However, in an attempt to engage tribes potentially interested in the FERC relicensing of the Kankakee Hydroelectric Project this PAD will be transmitted to the US Bureau of Indian Affairs (BIA), Illinois SHPO, and to tribes with potential interests in the Project vicinity:

The Licensee proposes to repair or replace existing turbine-generator equipment. This work would be done within the powerhouse. Therefore, no adverse effects on tribal resources are expected.

The Licensee also proposes to provide Project electricity to its Stone Street Wastewater Lift Station via a new 12.5 kV overhead transmission line that taps into the existing line and runs west along Stone Street for approximately 600 feet before terminating at a transformer in the existing lift station. As these areas have already been heavily disturbed by residential and industrial development, no adverse effects are expected.

Consistent with Article 403 of the existing FERC license, the Licensee proposes to file an erosion control plan as it relates to construction activity at the project.

Consistent with Article 406 of the existing FERC license, the Licensee proposes to comply with the Programmatic Agreement entered with the State Historic Preservation Officer.

The Project will undergo cultural resources consultation under the Section 106 process. The Section 106 process (defined at 36 CFR Part 800) is intended to accommodate historic preservation concerns with the needs of federal undertakings through a process of consultation with agency officials, the SHPO, and federally recognized Indian Tribes.

5.10.2 Proposed Studies

As noted in above (see **Section 5.9.2**), the Project will undergo the FERC required cultural resources consultation under the Section 106 process and include Tribes as interest is expressed.

5.11 SOCIOECONOMIC RESOURCES

5.11.1 Potential Issues

The Project is linked to the City Environmental Services Utility Sewer Services SCADA system and operated remotely from the City Environmental Services Utility Sewer Services. The dam, powerhouse, and related features are visually inspected by City staff once or twice daily. Power produced by the Kankakee Hydroelectric Project is used to offset electricity costs related to operation of the KRMA WWTP, which is jointly owned by the City of Kankakee and the villages of Aroma Park, Bourbonnais and Bradley.

The existing run-of-river Project has beneficial effects on socioeconomic resources. The Six Mile Pool (actually, 4.7 miles long) was formed by the construction of the Project's Kankakee Dam. The deeper water has long been used for recreational boating and fishing.

In addition, the Project's fishing and viewing platform, located immediately downstream of the powerhouse, provides recreational opportunities to citizens of the City and County.

5.11.2 Proposed Studies

To meet current Commission guidelines regarding Environmental Justice the Licensee will undertake a desktop study and prepare a table of racial, ethnic, and poverty statistics for each state, county, and census block group within the geographic scope of analysis (i.e., areas within one mile of the existing Project boundary). The table will include information from the US Census Bureau's most recently available American Community Survey 5-year Estimates for each state, county, and block group (wholly or partially) within the geographic scope of analysis. The Licensee will also identify environmental justice populations by block group, using the data obtained above, by applying the following methods included in US EPA's Promising Practices for Environmental Justice (EJ) Methodologies in National Environmental Policy Act (NEPA) Reviews (2016). A map will be prepared that shows the Project boundary and location(s) of any Project-related construction in relation to any identified environmental justice communities within the geographic scope. Anticipated project-related impacts on any environmental justice communities will be described. If environmental justice communities are present, Licensee public outreach efforts will be undertaken. If needed, mitigation measures to avoid and/or minimize Project effects on environmental justice communities will be proposed. Any non-English speaking groups will be identified and efforts to communicate with these groups described. Schools,

hospitals, and other sensitive receptors in the geographic scope of analysis will be mapped and any Project-related effects on these receptors described.

6.0 COMPREHENSIVE PLANS

6.1 RELEVANT QUALIFYING FEDERAL, STATE, AND TRIBAL PLANS

In accordance with 18 CFR §5.6(d)(4)(III and IV) the Licensee reviewed FERC's March 2022 List of Comprehensive Plans for Illinois. Section 10(a)(2)(A) of the Federal Power Act 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 2022 FERC List of Comprehensive Plans includes eight plans for Illinois. Several of the listed plans were deemed to be irrelevant to the Kankakee Project. For example, the Kankakee River contains no wild/scenic river designated or eligible segments; therefore, the Nationwide Rivers Inventory is not relevant to relicensing. The following plans are identified at this time as potentially applicable to the Kankakee Project:

- Illinois Department of Natural Resources. 2008. Illinois Statewide Comprehensive Outdoor Recreation Plan (SCORP): 2009-2014. Springfield, Illinois. December 2009.
- Illinois Environmental Protection Agency. 1992. Illinois Water Quality Management Plan. Springfield, Illinois. December 1992.
- 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.
- US Fish and Wildlife Service. undated b. Fisheries USA: The Recreational Fisheries Policy of the US Fish and Wildlife Service. Washington, D.C.

6.1.1 Illinois SCORP

The 2019-2014 Illinois Statewide Comprehensive Outdoor Recreation Plan (SCORP) has been superseded by a 2021-2025 SCORP (IDNR 2021b). This current version includes findings from a 2020 survey of Illinois residents (see **Section 4.8.1.1.7**). It also outlines the following four priority areas to further meet the recreational needs of Illinoisans:

- Improve Health and Wellness
- Access to Parks and Recreation
- Natural Resources and Conservation Management
- Funding and Economic Development

6.1.2 Illinois Water Quality Management Plan

The Illinois Water Quality Management Plan (WQMP) identifies the policies and recommendations of the State of Illinois for the protection of water quality and the control of point and nonpoint source pollution. The WQMP provides a unifying framework for wastewater facilities planning, basin planning, and area-wide planning carried out in Illinois under Sections 201, 303(e), and 208 of the Clean Water Act, respectively. This unifying framework guides the implementation of Illinois' point and nonpoint source water pollution control programs. (IDNR 2022q)

The WQMP addresses the control of pollution sources, maintenance of stream use and water quality standards (see **Section 4.3.1.2**), protection of ground water resources, and control of hydrologic

modifications. In addition to the assurance of sound economic and environmental decision making, the WQMP is also intended to serve as a tool to protect the Federal and State investment in pollution control facilities. The original WQMP has been frequently amended to reflect specific changes in various program elements. (IDNR 2022q)

6.1.3 Upper Mississippi River & Great Lakes Region Joint Venture Implementation Plan

The Upper Mississippi River & Great Lakes Region Joint Venture Implementation Plan (UMRGLR JVIP) was updated in 2007 (USFWS 2007, UMRGLR JVIP). A primary goal of the JVIP is to integrate continental migratory bird priorities into conservation actions at regional, state, and smaller scales by providing wildlife managers guidance in designing landscapes with greater value to birds. The approach uses four primary elements: 1) biological planning and resource assessment, 2) landscape conservation design, 3) program delivery, and 4) evaluation by means of monitoring and research. Use of science-based decision tools should more effectively increase landscape carrying capacity for birds through targeted habitat protection, restoration, and enhancement.

Habitat conservation recommendations in this Implementation Plan are based on separate bird-group habitat conservation strategies (JV bird-group strategies) developed for waterfowl, waterbirds, shorebirds, and landbirds. The technical bird-group strategies provide estimates of what, where, when, and how much habitat is required in the region to increase and sustain populations of priority bird species at target levels. Habitat objectives for each bird-group were pooled by primary cover type, overlap in habitat requirements between groups was eliminated, and resulting habitat conservation goals for “all birds” was presented. The document also provides general information concerning the JV partnership, regional landscape characteristics, and program delivery. JV planning documents (this all-bird plan and associated bird-group strategies) establish explicit regional bird population and habitat conservation objectives, and use several sources of data and advancing technological tools to increase planning efficiency.

The Kankakee Hydroelectric Project is located in the Eastern Tallgrass Prairie Bird Conservation Region (BCR 22). Bird Conservation Region 22 includes what were formerly tall and lush grasslands in Illinois, Indiana, Ohio, Iowa and adjoining states. The modern landscape is largely agricultural. Primary threats to native upland and wetland communities include urbanization, recreational development, and agricultural expansion.

6.1.4 Fisheries USA

The recreational fisheries policy (Fisheries USA) defines USFWS’ role in the management of recreational fishery resources. It represents an effort by USFWS (undated b) to unite all USFWS recreational fishery capabilities under a single policy to enhance US recreational fisheries. The policy was drafted in 1989. Goals listed in the policy include:

- Ensuring that recreational fisheries are given full conservation in future water resource projects;
- Identifying and remediating the effects of contaminants on fisheries;
- Developing access to waters previously unavailable for fishing;
- Restoring or enhancing depleted or declining fisheries;
- Optimizing productivity of existing fisheries through habitat and water quality improvement; and
- Utilizing angler education programs to adjust expectation of what constitutes a successful fishing experience.

During the relicensing process, further evaluations will be conducted regarding potential conformity with the Illinois SCORP, Illinois WQMP, UMRGLR JVIP, Fisheries USA, and associated documents.

6.2 OTHER RELEVANT RESOURCE MANAGEMENT PLANS

The City (Licensee) completed a Kankakee Riverfront Master Plan in 2018 (City of Kankakee 2018). In 2017, City leaders engaged a planning, design, and engineering team to consider riverfront improvement opportunities, create a compelling long-term riverfront vision, and complete a multi-dimensional strategy that includes a series of incremental implementation actions. The Kankakee Riverfront Master Plan summarizes the team's findings and recommendations, which include:

- Construct and program a package of distinctive river attractions that appeal to a wide range of residents, workers and regional visitors
- Construct three-dimensional connections to, along, across, and in the river, including a Riverwalk from Court Street to Schuyler Avenue, a Schuyler Avenue Boat Dock, a Washington Avenue Boat Launch, and an In-River Paddling Course (controlled access and non-motorized boat passage)
- Downtown, neighborhood links (streetscape improvements on Court Street, Station Street, Washington Avenue, Schuyler Avenue, River Street, and Water Street)
- River access (variety of river edge access points for pedestrians and boaters)

Related to the Kankakee Riverfront Master Plan, the City (Licensee) prepared a Riverfront Tax Increment Financing (TIF) District Redevelopment Plan and Program Draft Report in 2019 (City of Kankakee 2019). Establishing the Riverfront TIF District can facilitate physical improvements, remove blighted conditions, and provide funding sources for improvement projects. These improvements will not only help improve the physical conditions and economic development of the TIF redevelopment area, but also enhance the quality of life of adjacent neighborhoods and for all residents of Kankakee. The boundaries of the TIF redevelopment area were carefully established in adherence to eligibility criteria and include only those parcels which would benefit by the proposed Redevelopment Plan and Program. The TIF redevelopment area includes properties generally located along the Kankakee River in downtown Kankakee, including much of the Kankakee Hydroelectric Project area (see **Figure 4.12-1**).

7.0 SUMMARY OF CONTACTS

7.1 PRE-PAD QUESTIONNAIRE

In September 2022 the Licensee sent a Pre-PAD Questionnaire (**Appendix A**) to the following entities with potential interest in participating in the Kankakee Hydroelectric Project relicensing process:

- US Army Corps of Engineers, Rock Island District Regulatory Branch
- USFWS, Illinois-Iowa Ecological Services Field Office
- Advisory Council on Historic Preservation (ACHP)
- Illinois Historic Preservation Agency, State Historic Preservation Office
- IDNR, Division of Natural Heritage
- Illinois Department of Transportation, Office of Planning and Programming
- IEPA
- Kankakee County Planning Department
- KRMA

To date, the ACHP and Illinois SHPO have responded to the questionnaire (**Appendix A**). In its email dated November 8, 2022, ACHP noted that it doesn't get involved in the review until the federal agency, in this case FERC, makes a determination that there will be adverse effects to historic properties. In that case, the federal agency is required to notify ACHP, and provide information about the undertaking, etc. ACHP then decides if it will formally enter the Section 106 consultation to facilitate the consultation to develop steps to resolve the adverse effects. In its email dated September 20, 2022, the Illinois SHPO stated that it has no awareness of any project-related issues for the Kankakee Hydroelectric Project FERC relicensing.

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Appendix A

Pre-PAD Questionnaire, Distribution, and Responses

Kankakee Hydroelectric Project, FERC No. 8632
FERC Relicensing - Pre-Application Document Information Questionnaire

The City of Kankakee, Illinois (City), is the Licensee of the Kankakee Hydroelectric Project (Project, Federal Energy Regulatory Commission (FERC) No. 8632), located along the Kankakee River in Kankakee County, Illinois (see attached map). The Licensee, with assistance from Stantec, is preparing a Pre-Application Document (PAD) that provides FERC and other entities with existing, relevant, and reasonably available information pertaining to the Project.

The current FERC License for the Project expires on April 30, 2028. The Licensee must notify FERC of its intent to file a new license application for the Project, including a PAD, on or before April 30, 2023.

This FERC Relicensing PAD Information Questionnaire will be used to help identify issues and related information needs regarding relicensing of the Project, and to develop preliminary study plans. Information gathered for the PAD will be used throughout the relicensing process to prepare documents analyzing the effects of FERC relicensing on the Project area and surroundings.

Your organization has been identified as a possible source of information for the PAD. To allow information to be included in the PAD, the Licensee requests that you complete the following Questionnaire to the best of your ability. Please return the completed Questionnaire to Stantec's Rick Bolliger (email: rick.bolliger@stantec.com) within 30 days, if possible.

Comments and/or questions regarding this Questionnaire may be sent to Stantec's Rick Bolliger (email: rick.bolliger@stantec.com; phone: 312-831-3070).

The City of Kankakee respectfully request the following:

Information about person completing the questionnaire:

Name and Title: _____
Organization: _____
Address: _____
_____
Phone: _____
Email Address: _____

1. Do you or your organization know of existing, relevant, and reasonably available information that describes the existing project environment or known effects of the Kankakee Hydroelectric Project?

☐ Yes (*if yes, please complete 1a through 1f*) ☐ No, *(if no, please go to 2)*

a. If *yes,* please check the box(es) to indicate the specific resource area(s) that the information relates to:

☐ Geology and soils
☐ Water resources
☐ Fish and aquatic resources
☐ Wildlife and botanical resources
☐ Wetlands, riparian, and littoral habitat
☐ Rare, threatened, and endangered species
☐ Recreation and land use
☐ Aesthetic resources
☐ Cultural resources
☐ Socio-economic resources
☐ Tribal resources
☐ Other resources information

b. Based on the specific resources listed in 1a, are you aware of any specific project-related issues pertaining to the identified resource area(s)? *(Additional information may be provided on Sheet 4 of this questionnaire).*

☐ Yes *(if yes, please list specific issues below).* ☐ No

Resource Area **Specific Issue**

c. Based on the resource issues identified in 1b, are you aware of any potential studies or information needs associated with the identified issues? *(Additional information may be provided on Sheet 4 of this questionnaire).*

☐ Yes *(Please list potential studies or information needs below).* ☐ No

Potential Studies or Information Needs

d. Please briefly describe the information (see 1a) or list available documents: *(Additional information may be provided on Sheet 4 of this questionnaire).*

e. Where can we obtain this information?

f. Please indicate whether there is a specific representative other than yourself you wish to designate for potential follow-up contact by the Licensee or other representative for the resource area(s) checked above. (*Additional information may be provided on Sheet 4 of this questionnaire)*

Representative Contact Information

Name: _____
Address _____
_____
Phone: _____
Email Address: _____

Name: _____
Address: _____
_____
Phone: _____
Email Address: _____

2. Do you or your organization plan to participate in the Kankakee Hydroelectric Project FERC relicensing proceeding?

☐ Yes ☐ No

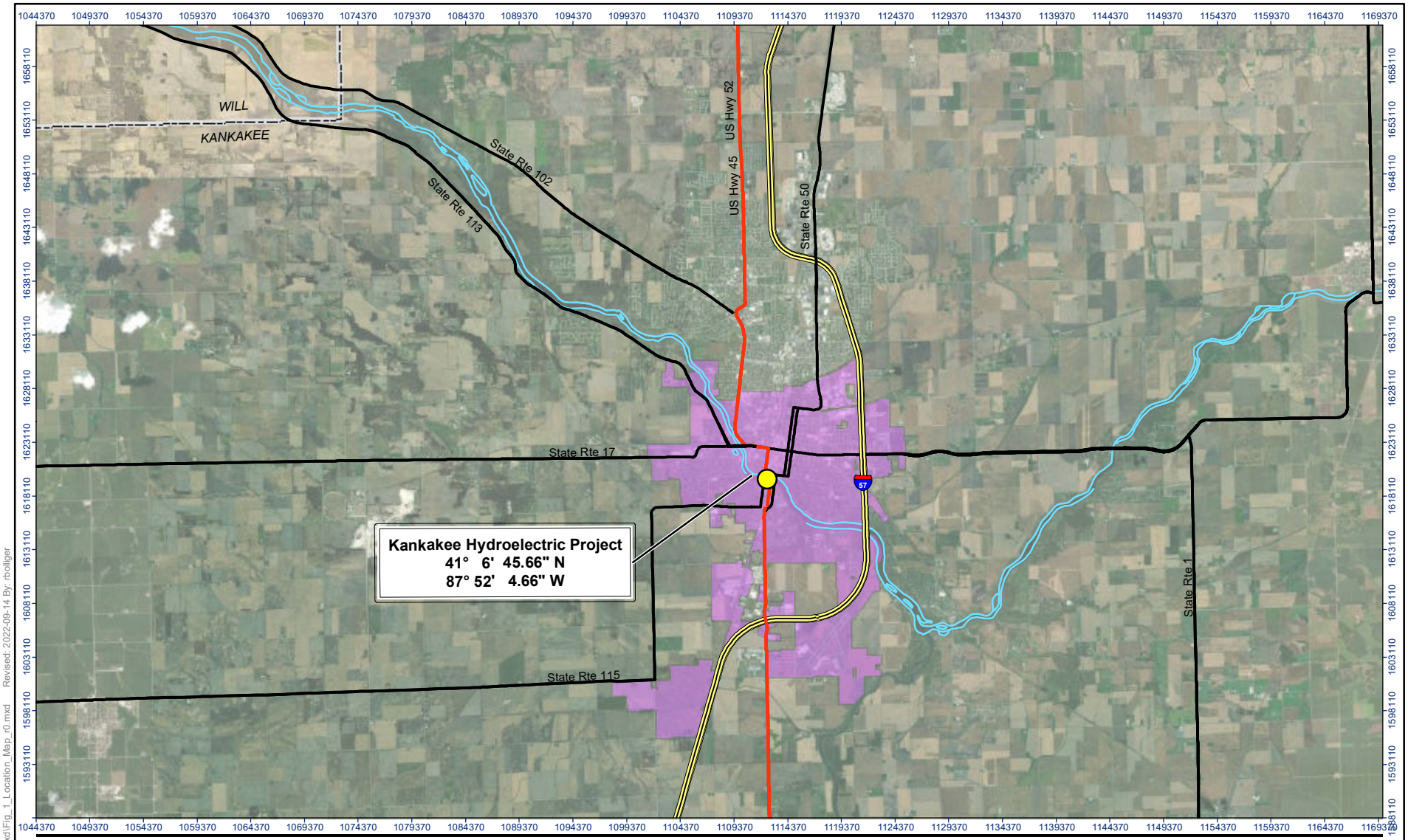
Comments

3. Do you or your organization have any objections to the City's use of FERC's Traditional Licensing Process (TLP), instead of the default Integrated Licensing Process (ILP), for the Kankakee Hydroelectric Project relicensing proceeding?

☐ Yes ☐ No

Comments

Additional Information or Comments: ***(Please indicate applicable section).***



Legend

- Powerhouse Location
- County Boundary
- City of Kankakee
- Interstate
- US Route
- State Route
- Kankakee River

N

0 1 2 Miles

(At original document size of 8.5x11)

1:158,400

Notes

1. Coordinate System: NAD 1983 StatePlane Illinois East FIPS 1201 Feet

2. Data Sources: Illinois Geospatial Data Clearinghouse, TIGER 2021

3. Background: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Project Location
Kankakee Co., IL

Prepared by RFB on 2022-09-14
TR by SB on 2022-09-14

Client/Project
City of Kankakee
Kankakee Hydroelectric Project
FERC Relicensing

Figure No.
1

Title
Location Map

Stantec

C:\Users\rbolliger\Desktop\Kankakee\GIS\mxd\Fig_1_Location_Map_r0.mxd Revised: 2022-09-14 By: rbolliger

Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

From:	John Eddins
To:	Bedross, Steven
Cc:	Zachary J Newton; Waller, Hiedi; Gilbert, Kirby; Bolliger, Rick
Subject:	Re: [External] Kankakee Hydroelectric Project FERC Relicensing: Pre-Application Document Information Questionnaire
Date:	Tuesday, November 8, 2022 10:37:54 AM

Steve
Thanks for the notification. ACHP doesn't get involved in the review until the federal agency, in this case FERC, makes a determination that there will be adverse effects to historic properties. In that case, the federal agency is required to notify us, and provide information about the undertaking, etc. ACHP then decides whether or not it will formally enter the Section 106 consultation to facilitate the consultation to develop steps to resolve the adverse effects.

At this point, the proponent should be engaging with the SHPO, tribes, other consulting parties as directed by FERC to identify any historic properties that may be affected, assess effects, etc.

As we are not local to the project area, there is very little we can provide at this point in the project review.

Pretty much, we only weigh in on process, ie., the federal ageny's compliance with the requirements of the Section 106 implementing regulations.

Thanks,
John

John T. Eddins PhD
ACHP
202-517-0211
https://www.achp.gov/
e106-online section 106 documentation submittal system now available to all federal agencies on the web at: **https://www.achp.gov/e106-email-form**
ACHP offers NEW free and low-cost e-learning courses for the public, applicants, and NEPA-106 practitioners. Learn more at: **https://www.achp.gov/training/elearning**

From: Bedross, Steven <steven.bedross@stantec.com>
Sent: Monday, November 7, 2022 5:27 PM
To: John Eddins <jeddins@achp.gov>
Cc: Zachary J Newton <zjnewton@citykankakee-il.gov>; Waller, Hiedi <Hiedi.Waller@stantec.com>; Gilbert, Kirby <kirby.gilbert@stantec.com>; Bolliger, Rick <rick.bolliger@stantec.com>
Subject: [External] Kankakee Hydroelectric Project FERC Relicensing: Pre-Application Document Information Questionnaire

Mr. Eddins:

The City of Kankakee would greatly appreciate your input regarding the upcoming FERC relicensing of its hydroelectric project. Please see the emails below and attached questionnaire.

Thank you.

Steve Bedross
Senior Environmental Planner
Stantec

From: John Eddins <jeddins@achp.gov>
Sent: Monday, September 19, 2022 12:15 PM
To: Bedross, Steven <steven.bedross@stantec.com>
Subject: Re: [External] Kankakee Hydroelectric Project FERC Relicensing: Pre-Application Document Information Questionnaire

Steven
Thanks for the notification.
I handle all FERC cases that come to the ACHP.
Please direct all future notifications to me, and please removes our Acting Executive Director, Reid Nelson, from your mailing list.
thanks.
John

John T. Eddins PhD
ACHP
202-517-0211
https://www.achp.gov/
e106-online section 106 documentation submittal system now available to all federal agencies on the web at: **https://www.achp.gov/e106-email-form**
ACHP offers NEW free and low-cost e-learning courses for the public, applicants, and NEPA-106 practitioners. Learn more at: **https://www.achp.gov/training/elearning**

From: Bedross, Steven [mailto:steven.bedross@stantec.com]
Sent: Friday, September 16, 2022 10:37 AM
To: Reid Nelson <rnelson@achp.gov>
Cc: Zachary J Newton <zjnewton@citykankakee-il.gov>; Waller, Hiedi <Hiedi.Waller@stantec.com>; Gilbert, Kirby <kirby.gilbert@stantec.com>; Bolliger, Rick <rick.bolliger@stantec.com>
Subject: [External] Kankakee Hydroelectric Project FERC Relicensing: Pre-Application Document Information Questionnaire

Mr. Nelson:

The City of Kankakee, Illinois (City), is the Licensee of the Kankakee Hydroelectric Project (Project, Federal Energy Regulatory Commission (FERC) No. 8632), located along the Kankakee River in Kankakee County, Illinois. The Licensee, with assistance from Stantec, is preparing a Pre-Application Document (PAD) that provides FERC and other entities with existing, relevant, and reasonably available information pertaining to the Project.

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Thanks for your help.

Steve Bedross
Senior Environmental Planner
Stantec

Caution: This email originated from outside of Stantec. Please take extra precaution.
Attention: Ce courriel provient de l'extérieur de Stantec. Veuillez prendre des précautions supplémentaires.
Atención: Este correo electrónico proviene de fuera de Stantec. Por favor, tome precauciones adicionales.

From:	Bedross, Steven
To:	John Eddins
Cc:	Zachary J Newton; Waller, Hiedi; Gilbert, Kirby; Bolliger, Rick
Subject:	Kankakee Hydroelectric Project FERC Relicensing: Pre-Application Document Information Questionnaire
Date:	Monday, November 7, 2022 4:27:00 PM
Attachments:	Kankakee Hydro Pre-PAD Questionnaire w Map_Sep 2022.pdf

Mr. Eddins:

The City of Kankakee would greatly appreciate your input regarding the upcoming FERC relicensing of its hydroelectric project. Please see the emails below and attached questionnaire.

Thank you.

Steve Bedross
Senior Environmental Planner
Stantec

From: John Eddins <jeddins@achp.gov>
Sent: Monday, September 19, 2022 12:15 PM
To: Bedross, Steven <steven.bedross@stantec.com>
Subject: Re: [External] Kankakee Hydroelectric Project FERC Relicensing: Pre-Application Document Information Questionnaire

Steven
Thanks for the notification.
I handle all FERC cases that come to the ACHP.
Please direct all future notifications to me, and please removes our Acting Executive Director, Reid Nelson, from your mailing list.
thanks.
John

John T. Eddins PhD
ACHP
202-517-0211
https://www.achp.gov/
e106-online section 106 documentation submittal system now available to all federal agencies on the web at: **https://www.achp.gov/e106-email-form**
ACHP offers NEW free and low-cost e-learning courses for the public, applicants, and NEPA-106 practitioners. Learn more at: **https://www.achp.gov/training/elearning**

From: Bedross, Steven [mailto:steven.bedross@stantec.com]
Sent: Friday, September 16, 2022 10:37 AM
To: Reid Nelson <rnelson@achp.gov>
Cc: Zachary J Newton <zjnewton@citykankakee-il.gov>; Waller, Hiedi <Hiedi.Waller@stantec.com>; Gilbert, Kirby <kirby.gilbert@stantec.com>; Bolliger, Rick <rick.bolliger@stantec.com>

Subject: [External] Kankakee Hydroelectric Project FERC Relicensing: Pre-Application Document Information Questionnaire

Mr. Nelson:

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Thanks for your help.

Steve Bedross
Senior Environmental Planner
Stantec

From:	Bedross, Steven
To:	dskimerhorn@k3county.net
Cc:	Zachary J Newton; Waller, Hiedi; Gilbert, Kirby; Bolliger, Rick
Subject:	Kankakee Hydroelectric Project FERC Relicensing: Pre-Application Document Information Questionnaire
Date:	Monday, November 7, 2022 4:10:00 PM
Attachments:	Kankakee Hydro Pre-PAD Questionnaire w Map_Sep 2022.pdf

Mr. Skimerhorn:

The City of Kankakee would greatly appreciate your input regarding the upcoming FERC relicensing of its hydroelectric project. Please see the email below and attached questionnaire.

Thank you.

Steve Bedross
Senior Environmental Planner
Stantec

From: Bedross, Steven
Sent: Friday, September 16, 2022 9:56 AM
To: dskimerhorn@k3county.net
Cc: Zachary J Newton <zjnewton@citykankakee-il.gov>; Waller, Hiedi <Hiedi.Waller@stantec.com>; Gilbert, Kirby <kirby.gilbert@stantec.com>; Bolliger, Rick <rick.bolliger@stantec.com>
Subject: Kankakee Hydroelectric Project FERC Relicensing: Pre-Application Document Information Questionnaire

Mr. Skimerhorn:

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Thanks for your help.

Steve Bedross
Senior Environmental Planner

From:	Bedross, Steven
To:	ann.holtrop@illinois.gov
Cc:	Zachary J Newton; Waller, Hiedi; Gilbert, Kirby; Bolliger, Rick
Subject:	Kankakee Hydroelectric Project FERC Relicensing: Pre-Application Document Information Questionnaire
Date:	Monday, November 7, 2022 4:14:00 PM
Attachments:	Kankakee Hydro Pre-PAD Questionnaire w Map_Sep 2022.pdf

Ms. Holtrop:

The City of Kankakee would greatly appreciate your input regarding the upcoming FERC relicensing of its hydroelectric project. Please see the email below and attached questionnaire.

Thank you.

Steve Bedross
Senior Environmental Planner
Stantec

From: Bedross, Steven
Sent: Friday, September 16, 2022 9:40 AM
To: ann.holtrop@illinois.gov
Cc: Zachary J Newton <zjnewton@citykankakee-il.gov>; Waller, Hiedi <Hiedi.Waller@stantec.com>; Gilbert, Kirby <kirby.gilbert@stantec.com>; Bolliger, Rick <rick.bolliger@stantec.com>
Subject: Kankakee Hydroelectric Project FERC Relicensing: Pre-Application Document Information Questionnaire

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Thanks for your help.

Steve Bedross
Senior Environmental Planner

From:	Bedross, Steven
To:	Bieneman, Holly A.
Cc:	Zachary J Newton; Waller, Hiedi; Gilbert, Kirby; Bolliger, Rick
Subject:	FW: Kankakee Hydroelectric Project FERC Relicensing: Pre-Application Document Information Questionnaire
Date:	Monday, November 7, 2022 4:17:00 PM
Attachments:	Kankakee Hydro Pre-PAD Questionnaire w Map_Sep 2022.pdf

Ms. Bieneman:

The City of Kankakee would greatly appreciate your input regarding the upcoming FERC relicensing of its hydroelectric project. Please see the email below and attached questionnaire.

Thank you.

Steve Bedross
Senior Environmental Planner
Stantec

From: Bedross, Steven
Sent: Friday, September 16, 2022 9:52 AM
To: holly.bieneman@illinois.gov
Cc: Zachary J Newton <zjnewton@citykankakee-il.gov>; Waller, Hiedi <Hiedi.Waller@stantec.com>; Gilbert, Kirby <kirby.gilbert@stantec.com>; Bolliger, Rick <rick.bolliger@stantec.com>
Subject: Kankakee Hydroelectric Project FERC Relicensing: Pre-Application Document Information Questionnaire

Ms. Bieneman:

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Thanks for your help.

Steve Bedross
Senior Environmental Planner

From:	Bedross, Steven
To:	barb.lieberoff@illinois.gov
Cc:	Zachary J Newton; Waller, Hiedi; Gilbert, Kirby; Bolliger, Rick
Subject:	Kankakee Hydroelectric Project FERC Relicensing: Pre-Application Document Information Questionnaire
Date:	Monday, November 7, 2022 4:19:00 PM
Attachments:	Kankakee Hydro Pre-PAD Questionnaire w Map_Sep 2022.pdf

Ms. Lieberoff:

The City of Kankakee would greatly appreciate your input regarding the upcoming FERC relicensing of its hydroelectric project. Please see the email below and attached questionnaire.

Thank you.

Steve Bedross
Senior Environmental Planner
Stantec

From: Bedross, Steven
Sent: Friday, September 16, 2022 9:43 AM
To: barb.lieberoff@illinois.gov
Cc: Zachary J Newton <zjnewton@citykankakee-il.gov>; Waller, Hiedi <Hiedi.Waller@stantec.com>; Gilbert, Kirby <kirby.gilbert@stantec.com>; Bolliger, Rick <rick.bolliger@stantec.com>
Subject: Kankakee Hydroelectric Project FERC Relicensing: Pre-Application Document Information Questionnaire

Ms. Lieberoff:

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Thanks for your help.

Steve Bedross
Senior Environmental Planner

From:	Bedross, Steven
To:	Art@krmawastewater.com
Cc:	Zachary J Newton; Waller, Hiedi; Gilbert, Kirby; Bolliger, Rick
Subject:	Kankakee Hydroelectric Project FERC Relicensing: Pre-Application Document Information Questionnaire
Date:	Monday, November 7, 2022 4:20:00 PM
Attachments:	Kankakee Hydro Pre-PAD Questionnaire w Map_Sep 2022.pdf

Mr.Strother:

The City of Kankakee would greatly appreciate your input regarding the upcoming FERC relicensing of its hydroelectric project. Please see the email below and attached questionnaire.

Thank you.

Steve Bedross
Senior Environmental Planner
Stantec

From: Bedross, Steven
Sent: Friday, September 16, 2022 10:02 AM
To: Art@krmawastewater.com
Cc: Zachary J Newton <zjnewton@citykankakee-il.gov>; Waller, Hiedi <Hiedi.Waller@stantec.com>; Gilbert, Kirby <kirby.gilbert@stantec.com>; Bolliger, Rick <rick.bolliger@stantec.com>
Subject: Kankakee Hydroelectric Project FERC Relicensing: Pre-Application Document Information Questionnaire

Mr. Strother:

The City of Kankakee, Illinois (City), is the Licensee of the Kankakee Hydroelectric Project (Project, Federal Energy Regulatory Commission (FERC) No. 8632), located along the Kankakee River in Kankakee County, Illinois. The Licensee, with assistance from Stantec, is preparing a Pre-Application Document (PAD) that provides FERC and other entities with existing, relevant, and reasonably available information pertaining to the Project.

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The attached FERC Relicensing PAD Information Questionnaire will be used to help identify issues and related information needs regarding relicensing of the Project, and to develop preliminary study plans. Information gathered for the PAD will be used throughout the relicensing process to prepare documents analyzing the effects of FERC relicensing on the Project area and surroundings.

Your organization has been identified as a possible source of information for the PAD. To allow information to be included in the PAD, the Licensee requests that you complete the attached Questionnaire to the best of your ability. Please return the completed Questionnaire to Stantec's Rick Bolliger (email: rick.bolliger@stantec.com) within 30 days, if possible. Comments and/or questions regarding this Questionnaire may be sent to Stantec's Rick Bolliger (email: rick.bolliger@stantec.com; phone: 312-831-3070).

Thanks for your help.

Steve Bedross
Senior Environmental Planner

From:	Bedross, Steven
To:	James.C.Kelley@usace.army.mil
Cc:	Zachary J Newton; Waller, Hiedi; Gilbert, Kirby; Bolliger, Rick
Subject:	Kankakee Hydroelectric Project FERC Relicensing: Pre-Application Document Information Questionnaire
Date:	Monday, November 7, 2022 4:33:00 PM
Attachments:	Kankakee Hydro Pre-PAD Questionnaire w Map_Sep 2022.pdf

Mr. Kelley:

The City of Kankakee would greatly appreciate the Rock Island District's input regarding the upcoming FERC relicensing of its hydroelectric project. Please see the emails below and attached questionnaire.

Thank you.

Steve Bedross
Senior Environmental Planner
Stantec

From: Kelley, James C Jr CIV USARMY CEMVR (USA) <James.C.Kelley@usace.army.mil>
Sent: Monday, September 26, 2022 9:23 AM
To: Bedross, Steven <steven.bedross@stantec.com>
Cc: Zachary J Newton <zjnewton@citykankakee-il.gov>; Waller, Hiedi <Hiedi.Waller@stantec.com>; Gilbert, Kirby <kirby.gilbert@stantec.com>
Subject: RE: Kankakee Hydroelectric Project FERC Relicensing: Pre-Application Document Information Questionnaire

The project questionnaire has been received and a project manager will respond back to you.

Jim Kelley
Project Manager
Eastern Branch
Regulatory Division
Rock Island District Corps of Engineers
P.O. Box 2004
Rock Island, IL 61204-2004
309-794-5373
309-794-5191(fax)

From: Bedross, Steven <steven.bedross@stantec.com>
Sent: Friday, September 16, 2022 9:27 AM
To: IllinoisMORegulatory <IllinoisMORegulatory@usace.army.mil>
Cc: Zachary J Newton <zjnewton@citykankakee-il.gov>; Waller, Hiedi <Hiedi.Waller@stantec.com>; Gilbert, Kirby <kirby.gilbert@stantec.com>
Subject: [Non-DoD Source] Kankakee Hydroelectric Project FERC Relicensing: Pre-Application Document Information Questionnaire

To Whom it May Concern,

The City of Kankakee, Illinois (City), is the Licensee of the Kankakee Hydroelectric Project (Project, Federal Energy

Regulatory Commission (FERC) No. 8632), located along the Kankakee River in Kankakee County, Illinois. The Licensee, with assistance from Stantec, is preparing a Pre-Application Document (PAD) that provides FERC and other entities with existing, relevant, and reasonably available information pertaining to the Project.

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Thanks for your help.

Steve Bedross
Senior Environmental Planner
Stantec

From:	Bedross, Steven
To:	rockisland@fws.gov
Cc:	Zachary J Newton; Waller, Hiedi; Gilbert, Kirby; Bolliger, Rick
Subject:	Kankakee Hydroelectric Project FERC Relicensing: Pre-Application Document Information Questionnaire
Date:	Monday, November 7, 2022 4:23:00 PM
Attachments:	Kankakee Hydro Pre-PAD Questionnaire w Map_Sep 2022.pdf

To Whom it May Concern,

The City of Kankakee would greatly appreciate The US Fish and Wildlife Service's input regarding the upcoming FERC relicensing of its hydroelectric project. Please see the email below and attached questionnaire.

Thank you.

Steve Bedross
Senior Environmental Planner
Stantec

From: Bedross, Steven
Sent: Friday, September 16, 2022 9:33 AM
To: rockisland@fws.gov
Cc: Zachary J Newton <zjnewton@citykankakee-il.gov>; Waller, Hiedi <Hiedi.Waller@stantec.com>; Gilbert, Kirby <kirby.gilbert@stantec.com>; Bolliger, Rick <rick.bolliger@stantec.com>
Subject: Kankakee Hydroelectric Project FERC Relicensing: Pre-Application Document Information Questionnaire

To Whom it May Concern,

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Thanks for your help.

Steve Bedross

From:	Wallace, Carol
To:	Bedross, Steven
Cc:	Zachary J Newton; Waller, Hiedi; Gilbert, Kirby; Bolliger, Rick
Subject:	Subject: [External] Kankakee Hydroelectric Project FERC Relicensing: Pre-Application Document Information Questionnaire
Date:	Tuesday, September 20, 2022 1:27:20 PM
Attachments:	image001.jpg

Steven,

The SHPO has no awareness of any project-related issues for the Kankakee Hydroelectric Project FERC relicensing.

CJ Wallace

Pronouns: she/her/hers (Tell me more!)

Regulatory Review & Compliance Manager

Illinois State Historic Preservation Office

Office 217-785-5027 Mobile 217-761-0104

Carol.Wallace@Illinois.gov

Member – IDNR Diversity, Equity, Accessibility, and Inclusion (DEAI)

State of Illinois - CONFIDENTIALITY NOTICE: The information contained in this communication is confidential, may be attorney-client privileged or attorney work product, may constitute inside information or internal deliberative staff communication, and is intended only for the use of the addressee. Unauthorized use, disclosure or copying of this communication or any part thereof is strictly prohibited and may be unlawful. If you have received this communication in error, please notify the sender immediately by return e-mail and destroy this communication and all copies thereof, including all attachments. Receipt by an unintended recipient does not waive attorney-client privilege, attorney work product privilege, or any other exemption from disclosure.

From:	Bedross, Steven
To:	carey.mayer2@illinois.gov
Cc:	Zachary J Newton; Waller, Hiedi; Gilbert, Kirby; Bolliger, Rick
Subject:	Kankakee Hydroelectric Project FERC Relicensing: Pre-Application Document Information Questionnaire
Date:	Friday, September 16, 2022 9:48:00 AM
Attachments:	Kankakee Hydro Pre-PAD Questionnaire w Map_Sep 2022.pdf

Ms. Mayer:

The City of Kankakee, Illinois (City), is the Licensee of the Kankakee Hydroelectric Project (Project, Federal Energy Regulatory Commission (FERC) No. 8632), located along the Kankakee River in Kankakee County, Illinois. The Licensee, with assistance from Stantec, is preparing a Pre-Application Document (PAD) that provides FERC and other entities with existing, relevant, and reasonably available information pertaining to the Project.

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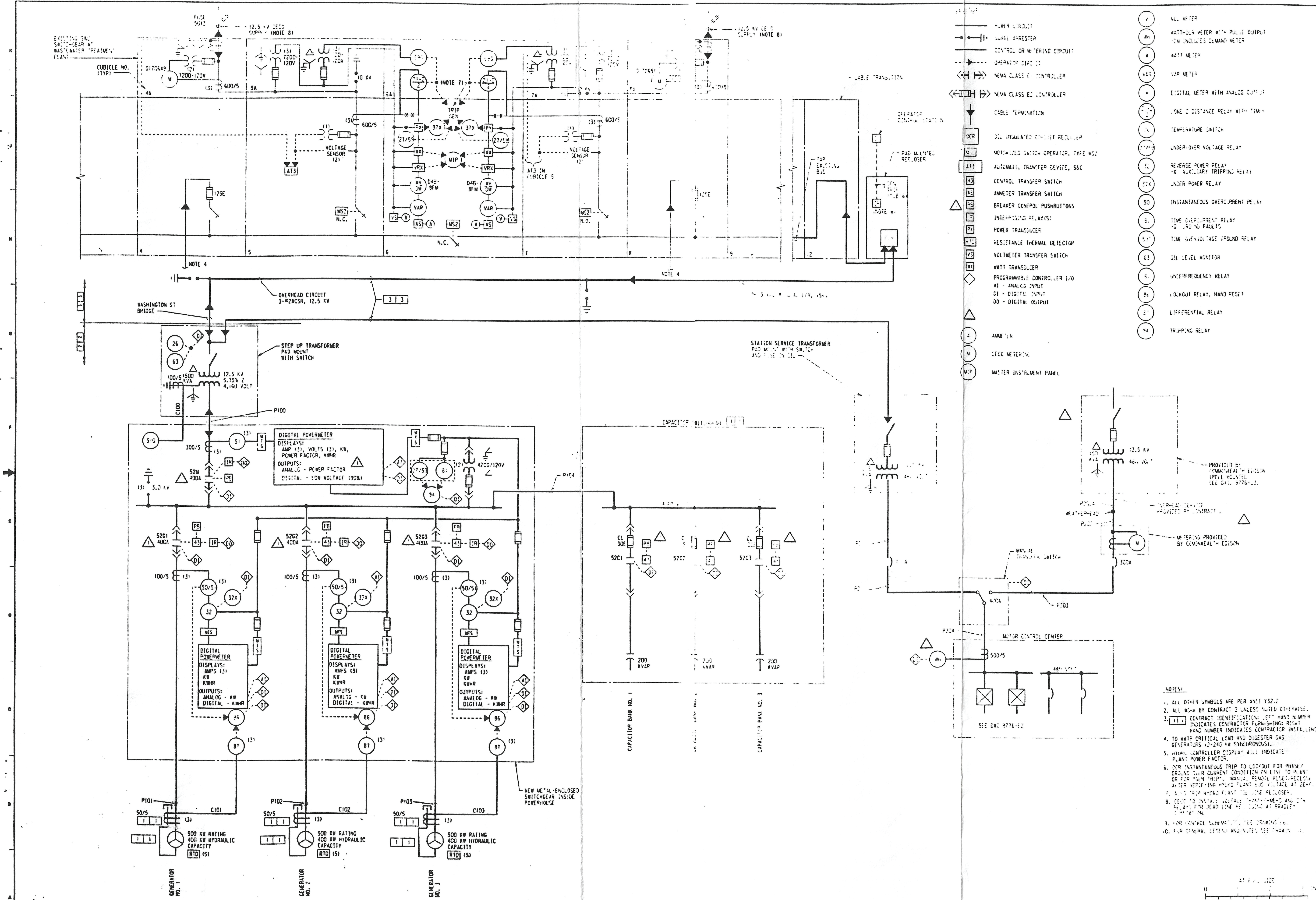
Thanks for your help.

Steve Bedross
Senior Environmental Planner
Stantec

Appendix B

Kankakee Hydroelectric Project Main One-Line Electrical Diagram



12.5 KV CECO SUPPLY (NOTE 8)
EXISTING S&C SWITCHGEAR AT WASTEWATER TREATMENT PLANT
CUBICLE NO. (TYP)
(NOTE 7)
TRIP GEN
VOLTAGE SENSOR (2)
AT3 IN CUBICLE 5
NOTE 4
OVERHEAD CIRCUIT 3-#2ACSR, 12.5 KV
WASHINGTON ST BRIDGE
STEP UP TRANSFORMER PAD MOUNT WITH SWITCH
12.5 KV 5.75% Z 4,160 VOLT
P100
DIGITAL POWERMETER
DISPLAYS: AMP (3), VOLTS (3), KW, POWER FACTOR, KWHR
OUTPUTS: ANALOG - POWER FACTOR
DIGITAL - LOW VOLTAGE (90%)
STATION SERVICE TRANSFORMER
CAPACITOR BANK NO. 1
CAPACITOR BANK NO. 3
200 KVAR
MOTOR CONTROL CENTER
METERING PROVIDED BY COMMONWEALTH EDISON
NEW METAL-ENCLOSED SWITCHGEAR INSIDE POWERHOUSE
500 KW RATING 400 KW HYDRAULIC CAPACITY
GENERATOR NO. 1
GENERATOR NO. 2
GENERATOR NO. 3
POWER CIRCUIT
SURGE ARRESTER
CONTROL OR METERING CIRCUIT
NEMA CLASS E2 CONTROLLER
CABLE TERMINATION
OIL INSULATED CIRCUIT RECLOSER
AUTOMATIC TRANSFER DEVICE, S&C
CONTROL TRANSFER SWITCH
AMMETER TRANSFER SWITCH
BREAKER CONTROL PUSHBUTTONS
POWER TRANSDUCER
RESISTANCE THERMAL DETECTOR
VOLTMETER TRANSFER SWITCH
WATT TRANSDUCER
AI - ANALOG INPUT
DI - DIGITAL INPUT
DO - DIGITAL OUTPUT
AMMETER
CECO METERING
MASTER INSTRUMENT PANEL
VOLTMETER
WATT METER
VAR METER
TEMPERATURE SWITCH
UNDER POWER RELAY
INSTANTANEOUS OVERCURRENT RELAY
OIL LEVEL MONITOR
UNDERFREQUENCY RELAY
LOCKOUT RELAY, HAND RESET
DIFFERENTIAL RELAY
TRIPPING RELAY
NOTES:
1. ALL OTHER SYMBOLS ARE PER ANSI Y32.2

DESIGNED	R.C. WALKER
DRAWN	P. MAHAS
CHECKED	R.C. WALKER
APPROVED	V. McALLISTER
APPROVED	R.D. PEISCHAUER
DATE	SEP. 7, 1990

STANLEY CONSULTANTS

KANKAKEE HYDROELECTRIC PROJECT
CITY OF KANKAKEE, ILLINOIS

ELECTRICAL ONE-LINE DIAGRAM
PRIMARY SYSTEM

NO. 9776-E1

Appendix C

Kankakee Hydroelectric Project Boundary Map

0.00 acres of federal land are occupied by the Kankakee Hydroelectric Project. Licensee has acquired easements on parcels owned by private parties.

Ref Point - 3
X Coord. 1110339.7
Y Coord. 1622995.1

T31N, R12E, Section 31

KANKAKEE RIVER

FLOW

Transmission Line
(right-of-way varies from 3 to 20 feet wide).
Portions of the Transmission Line are buried
and portions are overhead.

Ref Point - 2
X Coord. 1111065.0
Y Coord. 1620398.7

Kankakee River
Streambank

Transmission Line
on Bridge in Conduit

Fishing and
Viewing Platform

Fishing and
Viewing Platform
(Non-Project)

Kankakee
Powerhouse

Project
Boundary

Existing
Kankakee Dam

PLSS Boundary

T30N, R13W, Section 6

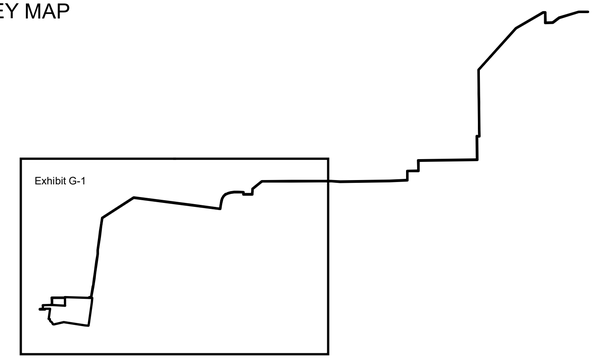
T30N, R13W, Section 5

T31N, R12E, Section 32

Ref Point -1
X Coord. 1112673.3
Y Coord. 1620195.5

6TH
5TH
4TH
3RD
WEST
WASHINGTON
MCMULLEN
BOURBONNAIS
HICKORY
STATION
MERCHANT
COURT
WATER
BRIDGE
STONE
8TH
9TH
7TH

KEY MAP



SURVEYOR'S STATEMENT

I hereby state that the Kankakee Hydroelectric Project Boundary delineated on this Exhibit "G" was developed based on the NAD 1983, Illinois State Plane, East Zone Coordinates. The USA boundary and additional tract(s) are shown within reasonable accuracies (+/- 40 feet) as required in 18CFR 4.14 to show their correct geographical location on the referenced topographical map in this Exhibit G.

By ..... Date .....

LEGEND

- Reference Point
- Recreational Area
- Stream
- Road
- Kankakee River
- Project Site and Powerhouse
- Project Boundary
- PLSS
- Non-Federal Parcel
- Federal Parcel

Projection: NAD 1983 StatePlane Illinois East FIPS 1201 Feet
Source Data: US Census, Tiger Data (2021), Kankakee Co.

CITY OF KANKAKEE
KANKAKEE HYDROELECTRIC PROJECT

FERC LICENSE No. 8632 — FERC DWG No. P-8632-XX

PROJECT BOUNDARY

0 150 300 450 600 Feet

DATE:	SCALE:	
January 18, 2022	AS NOTED	EXHIBIT G-1

SURVEYOR'S STATEMENT

I hereby state that the Kankakee Hydroelectric Project Boundary delineated on this Exhibit "G" was developed based on the NAD 1983, Illinois State Plane, East Zone Coordinates. The USA boundary and additional tract(s) are shown within reasonable accuracies (+/- 40 feet) as required in 18CFR 4.14 to show their correct geographical location on the referenced topographical map in this Exhibit G.

By ..... Date .....

LEGEND

- Reference Point
- Recreational Area
- Stream
- Road
- Kankakee River
- Project Site and Powerhouse
- Project Boundary
- PLSS
- Non-Federal Parcel
- Federal Parcel

Projection: NAD 1983 StatePlane Illinois East FIPS 1201 Feet
Source Data: US Census, Tiger Data (2021), Kankakee Co.

Transmission Line
(right-of-way varies from 3 to 20 feet wide).
Portions of the Transmission Line are buried
and portions are overhead.

KANKAKEE RIVER

FLOW

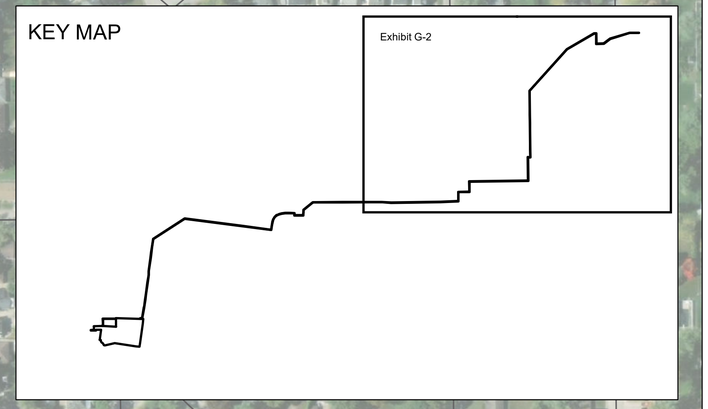
PLSS Boundary

Reference Point 4
X Coord. 1109615.0
Y Coord. 1623821.3

Reference Point 5
X Coord. 1109735.0
Y Coord. 1627043.4

Reference Point 6
X Coord. 1107851.3
Y Coord. 1627925.9

KEY MAP



KENNEDY
RIVER
HARBOR
PARK
10TH
9TH
8TH
WILLIAMS
GREGG
WILSON
BECKMAN
ZEISLER
INGLESH
BROOKMONT
BISHOP
5TH

170930100006
170930301005
170930416014
160931203003
160931203005
160931204007
160931204013
160931205034
160931206028
160931206003
160931206004
160931206005
160931206006
160931206007
160931206008
160931206009
160931206010
160931206011
160931206022
160931207001
160931207006
160931207021
160931207009
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160931210017
160931210023
160931210020
160931210021
160931210022
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160931207016
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160931214012
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160931215012
160931215013
160931215014
160931215015
160931215005
160931218001
160931218002
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160931221001
160931221002
160931221003
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160931412001
160931414003
160931414013
160931414008
160931414007
160931414006
160932111033
160932111041
160932111044
160932111024
160932111001

T31N, R12E, Section 31
T31N, R12E, Section 30

CITY OF KANKAKEE
KANKAKEE HYDROELECTRIC PROJECT

FERC LICENSE No. 8632 FERC DWG No. P-8632-XX

PROJECT BOUNDARY

0 150 300 450 600 Feet

DATE:	SCALE:	
January 18, 2022	AS NOTED	EXHIBIT G-2

Appendix D

Avifauna Documented in the Vicinity of Kankakee Dam

Change location | Year-round, All years

Kankakee Dam area

Kankakee County (/region/US-IL-091?yr=all&m=),
Illinois (/region/US-IL?yr=all&m=), US (/region/US?yr=all&m=)

Map(/hotspots?hs=L6636973&yr=all&m=)

Directions(https://www.google.com/maps/search/?api=1&query=41.1132243,-87.8670645)

Hotspot navigation

Overview (/hotspot/L6636973?yr=all&m=)

Illustrated Checklist (/hotspot/L6636973/media?yr=all&m=)

VIEW MY...

My eBird (/myebird/L6636973)

Life List (/lifelist/L6636973)

Target Species (/targets?r1=L6636973&bmo=1&emo=12)

Checklists (/mychecklists/L6636973)

EXPLORE...

Hotspot Map (/hotspots?hs=L6636973&yr=all&m=)

Bar Charts (/barchart?r=L6636973&yr=all&m=)

Media (https://ebird.org/media/catalog?regionCode=L6636973)

Printable Checklist (/printableList?regionCode=L6636973&yr=all&m=)

176
Species observed
(/hotspot/L6636973?yr=all&m=)

1736
Complete checklists
(/hotspot/L6636973/activity?yr=all&m=)

Sightings

Updated 4 sec ago.

Last seen (/hotspot/L6636973?yr=all&m=&rank=mrec) First seen (/hotspot/L6636973?yr=all&m=&rank=lrec)

High counts (/hotspot/L6636973?yr=all&m=&rank=hc)

Show all details Sort by

SPECIES NAME (/HOTSPOT/L6636973?YR=ALL&M=&RANK=MREC&HS_SORTBY=TAXON_ORDER&HS_O=ASC)

COUNT (/HOTSPOT/L6636973?YR=ALL&M=&RANK=MREC&HS_SORTBY=COUNT&HS_O=DESC) DATE (/HOTSPOT/L6636973?YR=ALL&M=&RANK=MREC&HS_SORTBY=DATE&HS_O=ASC) OBSERVER

1. **Canada Goose(/species/cangoo/L6636973)**
   # 30 4 Nov 2022 (/checklist/S121845897) Jed Hertz
2. **Mallard(/species/mallar3/L6636973)**
   # 2 4 Nov 2022 (/checklist/S121845897) Jed Hertz
3. **Rock Pigeon(/species/rocpig/L6636973)**
   # 9 4 Nov 2022 (/checklist/S121845897) Jed Hertz
4. **Killdeer(/species/killde/L6636973)**
   # 1 4 Nov 2022 (/checklist/S121845897) Jed Hertz
5. **Ring-billed Gull(/species/ribgul/L6636973)**
   # 2 4 Nov 2022 (/checklist/S121845897) Jed Hertz
6. **Great Blue Heron(/species/grbher3/L6636973)**
   # 1 4 Nov 2022 (/checklist/S121845897) Jed Hertz
7. **Turkey Vulture(/species/turvul/L6636973)**
   # 2 4 Nov 2022 (/checklist/S121845897) Jed Hertz
8. **Bald Eagle(/species/baleag/L6636973)**
   # 1 4 Nov 2022 (/checklist/S121845897) Jed Hertz
9. **Belted Kingfisher(/species/belkin1/L6636973)**
   # 1 4 Nov 2022 (/checklist/S121845897) Jed Hertz
10. **Red-bellied Woodpecker(/species/rebwoo/L6636973)**
    # 1 4 Nov 2022 (/checklist/S121845897) Jed Hertz
11. **Blue Jay(/species/blujay/L6636973)**

1 | 4 Nov 2022 (/checklist/S121845897) | Jed Hertz

12. **American Crow(/species/amecro/L6636973)**
3 | 4 Nov 2022 (/checklist/S121845897) | Jed Hertz

13. **European Starling(/species/eursta/L6636973)** *
2 | 4 Nov 2022 (/checklist/S121845897) | Jed Hertz

14. **American Robin(/species/amerob/L6636973)**
6 | 4 Nov 2022 (/checklist/S121845897) | Jed Hertz

15. **House Finch(/species/houfin/L6636973)** *
1 | 4 Nov 2022 (/checklist/S121845897) | Jed Hertz

16. **Downy Woodpecker(/species/dowwoo/L6636973)**
1 | 30 Oct 2022 (/checklist/S121572825) | Jed Hertz

17. **Peregrine Falcon(/species/perfal/L6636973)**
1 | 30 Oct 2022 (/checklist/S121572825) | Jed Hertz

18. **House Sparrow(/species/houspa/L6636973)** *
2 | 30 Oct 2022 (/checklist/S121572825) | Jed Hertz

19. **Hairy Woodpecker(/species/haiwoo/L6636973)**
1 | 28 Oct 2022 (/checklist/S121455692) | Jed Hertz

20. **Golden-crowned Kinglet(/species/gockin/L6636973)**
1 | 28 Oct 2022 (/checklist/S121455692) | Jed Hertz

21. **Common Grackle(/species/comgra/L6636973)**
1 | 28 Oct 2022 (/checklist/S121455692) | Jed Hertz

22. **Osprey(/species/osprey/L6636973)**
1 | 25 Oct 2022 (/checklist/S121292290) | Jed Hertz

23. **Cooper's Hawk(/species/coohaw/L6636973)**
1 | 25 Oct 2022 (/checklist/S121292290) | Jed Hertz

24. **Yellow-rumped Warbler(/species/yerwar/L6636973)**

1 25 Oct 2022 (/checklist/S121292290) Jed Hertz

25. **Northern Cardinal(/species/norcar/L6636973)**
1 23 Oct 2022 (/checklist/S121181107) Jed Hertz

26. **Carolina Wren(/species/carwre/L6636973)**
1 22 Oct 2022 (/checklist/S121105869) Jed Hertz

27. **Red-breasted Nuthatch(/species/rebnut/L6636973)**
1 21 Oct 2022 (/checklist/S121047504) Jed Hertz

28. **White-breasted Nuthatch(/species/whbnut/L6636973)**
1 21 Oct 2022 (/checklist/S121047504) Jed Hertz

29. **Gadwall(/species/gadwal/L6636973)**
1 20 Oct 2022 (/checklist/S120993304) Jed Hertz

30. **Northern Flicker(/species/norfli/L6636973)**
1 20 Oct 2022 (/checklist/S120993304) Jed Hertz

31. **Ruby-crowned Kinglet(/species/ruckin/L6636973)**
2 20 Oct 2022 (/checklist/S120993304) Jed Hertz

32. **Wood Duck(/species/wooduc/L6636973)**
1 19 Oct 2022 (/checklist/S120944945) Jed Hertz

33. **Red-tailed Hawk(/species/rethaw/L6636973)**
2 19 Oct 2022 (/checklist/S120944945) Jed Hertz

34. **Mourning Dove(/species/moudov/L6636973)**
2 16 Oct 2022 (/checklist/S120778982) Jed Hertz

35. **Chimney Swift(/species/chiswi/L6636973)**
1 16 Oct 2022 (/checklist/S120778982) Jed Hertz

36. **Northern Rough-winged Swallow(/species/nrwswa/L6636973)**
4 16 Oct 2022 (/checklist/S120778982) Jed Hertz

37. **Blue-winged Teal(/species/buwtea/L6636973)**

7 | 14 Oct 2022 (/checklist/S120652321) | Jed Hertz

38. **American Wigeon(/species/amewig/L6636973)**
1 | 14 Oct 2022 (/checklist/S120652321) | Jed Hertz

39. **Blue-headed Vireo(/species/buhvir/L6636973)**
1 | 14 Oct 2022 (/checklist/S120652321) | Jed Hertz

40. **Tree Swallow(/species/treswa/L6636973)**
1 | 14 Oct 2022 (/checklist/S120652321) | Jed Hertz

41. **Barn Swallow(/species/barswa/L6636973)**
1 | 14 Oct 2022 (/checklist/S120652321) | Jed Hertz

42. **Great Egret(/species/greegr/L6636973)**
1 | 12 Oct 2022 (/checklist/S120555126) | Jed Hertz

43. **Palm Warbler(/species/palwar/L6636973)**
4 | 12 Oct 2022 (/checklist/S120555126) | Jed Hertz

44. **American Goldfinch(/species/amegfi/L6636973)**
1 | 11 Oct 2022 (/checklist/S120484884) | Jed Hertz

45. **Snow Goose(/species/snogoo/L6636973)**
1 | 8 Oct 2022 (/checklist/S120228613) | Jed Hertz

46. **Pied-billed Grebe(/species/pibgre/L6636973)**
1 | 6 Oct 2022 (/checklist/S120070119) | Jed Hertz

47. **Cedar Waxwing(/species/cedwax/L6636973)**
2 | 30 Sep 2022 (/checklist/S119708005) | Jed Hertz

48. **Spotted Sandpiper(/species/sposan/L6636973)**
1 | 29 Sep 2022 (/checklist/S119674025) | Jed Hertz

49. **Swainson's Thrush(/species/swathr/L6636973)**
2 | 29 Sep 2022 (/checklist/S119674025) | Jed Hertz

50. **Rose-breasted Grosbeak(/species/robgro/L6636973)**

1 | 29 Sep 2022 (/checklist/S119674025) | Jed Hertz

51. **Ruby-throated Hummingbird(/species/rthhum/L6636973)**
1 | 24 Sep 2022 (/checklist/S119333999) | Jed Hertz

52. **Tufted Titmouse(/species/tuftit/L6636973)**
1 | 24 Sep 2022 (/checklist/S119333999) | Jed Hertz

53. **Blackpoll Warbler(/species/bkpwar/L6636973)**
1 | 24 Sep 2022 (/checklist/S119333999) | Jed Hertz

54. **Red-winged Blackbird(/species/rewbla/L6636973)**
1 | 23 Sep 2022 (/checklist/S119237289) | Jed Hertz

55. **Double-crested Cormorant(/species/doccor/L6636973)**
28 | 21 Sep 2022 (/checklist/S119141763) | Jed Hertz

56. **Bay-breasted Warbler(/species/babwar/L6636973)**
1 | 21 Sep 2022 (/checklist/S119141763) | Jed Hertz

57. **Red-shouldered Hawk(/species/reshaw/L6636973)**
1 | 20 Sep 2022 (/checklist/S119088551) | Jed Hertz

58. **Cliff Swallow(/species/cliswa/L6636973)**
3 | 5 Jul 2022 (/checklist/S114480479) | Maxfield Weakley

59. **Gray Catbird(/species/grycat/L6636973)**
1 | 5 Jul 2022 (/checklist/S114480479) | Maxfield Weakley

60. **Chipping Sparrow(/species/chispa/L6636973)**
1 | 5 Jul 2022 (/checklist/S114480479) | Maxfield Weakley

61. **Northern Parula(/species/norpar/L6636973)**
1 | 5 Jul 2022 (/checklist/S114480479) | Maxfield Weakley

62. **Indigo Bunting(/species/indbun/L6636973)**
1 | 5 Jul 2022 (/checklist/S114480479) | Maxfield Weakley

63. **Great Crested Flycatcher(/species/grcfly/L6636973)**

1 19 Jun 2022 (/checklist/S113279530) Jed Hertz

64. **Warbling Vireo(/species/warvir/L6636973)**

1 19 Jun 2022 (/checklist/S113279530) Jed Hertz

65. **Yellow-throated Vireo(/species/yetvir/L6636973)**

1 18 Jun 2022 (/checklist/S113197144) Jed Hertz

66. **House Wren(/species/houwre/L6636973)**

1 18 Jun 2022 (/checklist/S113197144) Jed Hertz

67. **Baltimore Oriole(/species/balori/L6636973)**

1 18 Jun 2022 (/checklist/S113197144) Jed Hertz

68. **Brown-headed Cowbird(/species/bnhcow/L6636973)**

1 18 Jun 2022 (/checklist/S113197144) Jed Hertz

69. **Black-capped Chickadee(/species/bkcchi/L6636973)**

1 15 Jun 2022 (/checklist/S112992856) Jed Hertz

70. **American Kestrel(/species/amekes/L6636973)**

1 9 Jun 2022 (/checklist/S112525188) Jed Hertz

71. **Eastern Wood-Pewee(/species/eawpew/L6636973)**

1 9 Jun 2022 (/checklist/S112525188) Jed Hertz

72. **Red-eyed Vireo(/species/reevir1/L6636973)**

1 9 Jun 2022 (/checklist/S112525188) Jed Hertz

73. **Red-headed Woodpecker(/species/rehwoo/L6636973)**

1 14 May 2022 (/checklist/S110067300) Jed Hertz

74. **Eastern Kingbird(/species/easkin/L6636973)**

1 14 May 2022 (/checklist/S110067300) Jed Hertz

75. **Yellow Warbler(/species/yelwar/L6636973)**

1 6 May 2022 (/checklist/S109104266) Jed Hertz

76. **Blue-gray Gnatcatcher(/species/buggna/L6636973)**

1 | 5 May 2022 (/checklist/S109037187) | Jed Hertz

77. **Common Yellowthroat(/species/comyel/L6636973)**
1 | 5 May 2022 (/checklist/S109037187) | Jed Hertz

78. **Song Sparrow(/species/sonspa/L6636973)**
1 | 30 Apr 2022 (/checklist/S108491177) | Dave Z.

79. **Eastern Towhee(/species/eastow/L6636973)**
1 | 21 Apr 2022 (/checklist/S107617530) | Jed Hertz

80. **Yellow-bellied Sapsucker(/species/yebsap/L6636973)**
1 | 19 Apr 2022 (/checklist/S107471487) | Jed Hertz

81. **Eastern Phoebe(/species/easpho/L6636973)**
1 | 19 Apr 2022 (/checklist/S107471487) | Jed Hertz

82. **Dark-eyed Junco(/species/daejun/L6636973)**
1 | 10 Apr 2022 (/checklist/S106703346) | Jed Hertz

83. **Greater White-fronted Goose(/species/gwfgoo/L6636973)**
10 | 5 Mar 2022 (/checklist/S104207190) | Jed Hertz

84. **Common Goldeneye(/species/comgol/L6636973)**
1 | 23 Feb 2022 (/checklist/S103568500) | Jed Hertz

85. **Common Redpoll(/species/comred/L6636973)**
13 | 23 Feb 2022 (/checklist/S103568500) | Jed Hertz

86. **Cackling Goose(/species/cacgoo1/L6636973)**
2 | 21 Feb 2022 (/checklist/S103368337) | Colin Dobson

87. **Herring Gull(/species/hergul/L6636973)**
1 | 21 Feb 2022 (/checklist/S103425053) | Jed Hertz

88. **Common Merganser(/species/commer/L6636973)**
1 | 20 Feb 2022 (/checklist/S103223441) | Jed Hertz

89. **American Black Duck(/species/ambduc/L6636973)**

4 | 18 Feb 2022 (/checklist/S102868531) | Jed Hertz

90. **Hooded Merganser(/species/hoomer/L6636973)**
2 | 16 Feb 2022 (/checklist/S102739680) | Jed Hertz

91. **Red-breasted Merganser(/species/rebmer/L6636973)**
1 | 14 Feb 2022 (/checklist/S102635849) | Jed Hertz

92. **Greater Scaup(/species/gresca/L6636973)**
1 | 12 Feb 2022 (/checklist/S102492935) | Jed Hertz

93. **Redhead(/species/redhea/L6636973)**
3 | 5 Feb 2022 (/checklist/S102062145) | Jed Hertz

94. **Mute Swan(/species/mutswa/L6636973)**
1 | 30 Jan 2022 (/checklist/S101720077) | Jed Hertz

95. **Sharp-shinned Hawk(/species/shshaw/L6636973)**
1 | 24 Jan 2022 (/checklist/S101352230) | Jed Hertz

96. **Lesser Scaup(/species/lessca/L6636973)**
3 | 15 Jan 2022 (/checklist/S100772552) | Jed Hertz

97. **American Tree Sparrow(/species/amtspa/L6636973)**
4 | 9 Jan 2022 (/checklist/S100428495) | Jed Hertz

98. **Merlin(/species/merlin/L6636973)**
1 | 21 Nov 2021 (/checklist/S97878880) | Jed Hertz

99. **White-throated Sparrow(/species/whtspa/L6636973)**
1 | 12 Nov 2021 (/checklist/S97475979) | Jed Hertz

100. **Eastern Bluebird(/species/easblu/L6636973)**
2 | 8 Nov 2021 (/checklist/S97306287) | Jed Hertz

101. **Rusty Blackbird(/species/rusbla/L6636973)**
1 | 7 Nov 2021 (/checklist/S97253231) | Jed Hertz

102. **Hermit Thrush(/species/herthr/L6636973)**

1 | 22 Oct 2021 (/checklist/S96555377) | Jed Hertz

103. **American Coot(/species/y00475/L6636973)**
1 | 14 Oct 2021 (/checklist/S96117059) | Jed Hertz

104. **Blackburnian Warbler(/species/bkbwar/L6636973)**
1 | 2 Oct 2021 (/checklist/S95485909) | Jed Hertz

105. **Nashville Warbler(/species/naswar/L6636973)**
1 | 1 Oct 2021 (/checklist/S95436674) | Jed Hertz

106. **Magnolia Warbler(/species/magwar/L6636973)**
2 | 1 Oct 2021 (/checklist/S95436674) | Jed Hertz

107. **Black-throated Green Warbler(/species/btnwar/L6636973)**
1 | 1 Oct 2021 (/checklist/S95436674) | Jed Hertz

108. **Chestnut-sided Warbler(/species/chswar/L6636973)**
1 | 28 Sep 2021 (/checklist/S95295761) | Jed Hertz

109. **Tennessee Warbler(/species/tenwar/L6636973)**
1 | 21 Sep 2021 (/checklist/S94971876) | Jed Hertz

110. **Cape May Warbler(/species/camwar/L6636973)**
1 | 16 Sep 2021 (/checklist/S94733574) | Jed Hertz

111. **American Redstart(/species/amered/L6636973)**
1 | 15 Sep 2021 (/checklist/S94697212) | Jed Hertz

112. **Wilson's Warbler(/species/wlswar/L6636973)**
1 | 14 Sep 2021 (/checklist/S94649527) | Jed Hertz

113. **Eurasian Collared-Dove(/species/eucdov/L6636973)**
1 | 12 Sep 2021 (/checklist/S94553217) | Jed Hertz

114. **Solitary Sandpiper(/species/solsan/L6636973)**
1 | 11 Sep 2021 (/checklist/S94519514) | Jed Hertz

115. **Philadelphia Vireo(/species/phivir/L6636973)**

1 | 11 Sep 2021 (/checklist/S94519514) | Jed Hertz

116. **Northern Waterthrush(/species/norwat/L6636973)**
1 | 9 Sep 2021 (/checklist/S94414605) | Jed Hertz

117. **Green-winged Teal(/species/gnwtea/L6636973)**
1 | 8 Sep 2021 (/checklist/S94384861) | Jed Hertz

118. **Canada Warbler(/species/canwar/L6636973)**
1 | 8 Sep 2021 (/checklist/S94384861) | Jed Hertz

119. **Northern Shoveler(/species/norsho/L6636973)**
4 | 7 Sep 2021 (/checklist/S94327073) | Jed Hertz

120. **Black-and-white Warbler(/species/bawwar/L6636973)**
1 | 5 Sep 2021 (/checklist/S94233502) | Jed Hertz

121. **Pine Warbler(/species/pinwar/L6636973)**
1 | 5 Sep 2021 (/checklist/S94233502) | Jed Hertz

122. **Purple Martin(/species/purmar/L6636973)**
2 | 4 Sep 2021 (/checklist/S94162014) | Jed Hertz

123. **Bank Swallow(/species/banswa/L6636973)**
1 | 4 Sep 2021 (/checklist/S94162014) | Jed Hertz

124. **Caspian Tern(/species/caster1/L6636973)**
1 | 20 Aug 2021 (/checklist/S93497128) | Jed Hertz

125. **Yellow-billed Cuckoo(/species/yebcuc/L6636973)**
1 | 2 Aug 2021 (/checklist/S92659769) | Jed Hertz

126. **Green Heron(/species/grnher/L6636973)**
1 | 25 Jul 2021 (/checklist/S92283089) | Jed Hertz

127. **Brown Thrasher(/species/brnthr/L6636973)**
2 | 28 Apr 2021 (/checklist/S86577814) | Jed Hertz

128. **Bufflehead(/species/buffle/L6636973)**

1 | 5 Mar 2021 (/checklist/S82804166) | Jed Hertz

129. **Canvasback(/species/canvas/L6636973)**

2 | 26 Feb 2021 (/checklist/S82382085) | Eric Johnson

130. **Ring-necked Duck(/species/rinduc/L6636973)**

1 | 26 Feb 2021 (/checklist/S82371995) | Jed Hertz

131. **Ruddy Duck(/species/rudduc/L6636973)**

1 | 26 Feb 2021 (/checklist/S82371995) | Jed Hertz

132. **Trumpeter Swan(/species/truswa/L6636973)**

3 | 22 Feb 2021 (/checklist/S82149998) | Jed Hertz

133. **Northern Pintail(/species/norpin/L6636973)**

1 | 20 Feb 2021 (/checklist/S82007783) | John Hendrickson

134. **Lesser Black-backed Gull(/species/lbbgul/L6636973)**

1 | 7 Feb 2021 (/checklist/S80592362) | Jed Hertz

135. **Brown Creeper(/species/brncre/L6636973)**

1 | 7 Feb 2021 (/checklist/S80592362) | Jed Hertz

136. **Tundra Swan(/species/tunswa/L6636973)**

3 | 18 Jan 2021 (/checklist/S79489457) | Jed Hertz

137. **Swamp Sparrow(/species/swaspa/L6636973)**

2 | 6 Nov 2020 (/checklist/S75897345) | Jed Hertz

138. **Bonaparte's Gull(/species/bongul/L6636973)**

1 | 20 Oct 2020 (/checklist/S75139947) | Jed Hertz

139. **Franklin's Gull(/species/fragul/L6636973)**

1 | 19 Oct 2020 (/checklist/S75099232) | Jed Hertz

140. **Pine Siskin(/species/pinsis/L6636973)**

28 | 19 Oct 2020 (/checklist/S75099232) | Jed Hertz

141. **Purple Finch(/species/purfin/L6636973)**

1 | 8 Oct 2020 (/checklist/S74563659) | Jed Hertz

142. **Lincoln's Sparrow(/species/linspa/L6636973)**

1 | 6 Oct 2020 (/checklist/S74490639) | Jed Hertz

143. **Lesser Yellowlegs(/species/lesyel/L6636973)**

2 | 27 Sep 2020 (/checklist/S74123261) | Jed Hertz

144. **Greater Yellowlegs(/species/greyel/L6636973)**

1 | 26 Sep 2020 (/checklist/S74072710) | Jed Hertz

145. **Least Flycatcher(/species/leafly/L6636973)**

1 | 14 May 2020 (/checklist/S69031872) | Jed Hertz

146. **Gray-cheeked Thrush(/species/gycthr/L6636973)**

2 | 14 May 2020 (/checklist/S69031872) | Jed Hertz

147. **Wood Thrush(/species/woothr/L6636973)**

1 | 14 May 2020 (/checklist/S69031872) | Jed Hertz

148. **Ovenbird(/species/ovenbi1/L6636973)**

1 | 14 May 2020 (/checklist/S69031872) | Jed Hertz

149. **White-crowned Sparrow(/species/whcspa/L6636973)**

2 | 9 May 2020 (/checklist/S68703263) | Molly Ulrich

150. **Field Sparrow(/species/fiespa/L6636973)**

1 | 13 Apr 2020 (/checklist/S67126277) | Jed Hertz

151. **Horned Grebe(/species/horgre/L6636973)**

1 | 6 Mar 2019 (/checklist/S53514908) | Jed Hertz

152. **White-winged Scoter(/species/whwsco2/L6636973)**

1 | 1 Feb 2019 (/checklist/S52266673) | Jed Hertz

153. **Wild Turkey(/species/wiltur/L6636973)**

7 | 24 Jul 2018 (/checklist/S47425188) | Jed Hertz

154. **Fox Sparrow(/species/foxspa/L6636973)**

1 | 1 Apr 2018 (/checklist/S44150802) | Jed Hertz

155. **Long-tailed Duck(/species/lotduc/L6636973)**
1 | 13 Feb 2018 (/checklist/S42736693) | Anne Hughes

156. **Scarlet Tanager(/species/scatan/L6636973)**
1 | 24 May 2017 (/checklist/S37113391) | Jed Hertz

157. **Rough-legged Hawk(/species/rolhaw/L6636973)**
1 | 17 Dec 2016 (/checklist/S33073321) | Jed Hertz

158. **Northern Harrier(/species/norhar2/L6636973)**
1 | 15 Dec 2016 (/checklist/S33030883) | Jed Hertz

159. **Lapland Longspur(/species/laplon/L6636973)**
1 | 27 Nov 2016 (/checklist/S32747983) | Jed Hertz

160. **Common Nighthawk(/species/comnig/L6636973)**
1 | 30 Jun 2016 (/checklist/S30477596) | Jed Hertz

161. **Ross's Goose(/species/rosgoo/L6636973)**
1 | 11 Mar 2014 (/checklist/S17452387) | Jed Hertz

162. **Iceland Gull(/species/y00478/L6636973)**
1 | 6 Jan 2014 (/checklist/S16384891) | Jed Hertz

163. **Brewer's Blackbird(/species/brebla/L6636973)**
1 | 25 Oct 2013 (/checklist/S15534737) | Jed Hertz

164. **Veery(/species/veery/L6636973)**
1 | 2 Sep 2013 (/checklist/S15088276) | Jed Hertz

165. **Sandhill Crane(/species/sancra/L6636973)**
3 | 26 Dec 2012 (/checklist/S12400115) | Jed Hertz

166. **Pectoral Sandpiper(/species/pecsan/L6636973)**
1 | 12 Sep 2012 (/checklist/S11588821) | Jed Hertz

167. **Broad-winged Hawk(/species/brwhaw/L6636973)**

1 | 11 Sep 2012 (/checklist/S11588818) | Jed Hertz

168. **Laughing Gull(/species/laugul/L6636973)**
1 | 9 Sep 2012 (/checklist/S11588814) | Jed Hertz

169. **Winter Wren(/species/winwre3/L6636973)**
1 | 20 Oct 2011 (/checklist/S9039651) | Jed Hertz

170. **Black-crowned Night-Heron(/species/bcnher/L6636973)**
1 | 19 Oct 2011 (/checklist/S9039650) | Jed Hertz

171. **American Pipit(/species/amepip/L6636973)**
1 | 11 Feb 2011 (/checklist/S7925742) | Jed Hertz

172. **Black-legged Kittiwake(/species/bklkit/L6636973)**
1 | 8 Dec 2009 (/checklist/S18185760) | Jed Hertz

173. **Connecticut Warbler(/species/conwar/L6636973)**
1 | 21 Sep 2009 (/checklist/S5614098) | Jed Hertz

174. **Surf Scoter(/species/sursco/L6636973)**
1 | 1 Dec 2006 (/checklist/S4037807) | Jed Hertz

175. **Ring-necked Pheasant(/species/rinphe1/L6636973)**
2 | 29 Jan 2005 (/checklist/S4036149) | Jed Hertz

176. **Great Horned Owl(/species/grhowl/L6636973)**
1 | 29 Jan 2005 (/checklist/S4036149) | Jed Hertz

EXOTIC: ESCAPEE

Graylag Goose(/species/gragoo/L6636973)
2 | 11 Jan 2016 (/checklist/S26844827) | Jed Hertz

HYBRIDS

Mallard x American Black Duck (hybrid)
1 | 14 Feb 2021 (/checklist/S81386653) | Jed Hertz

Swan Goose x Canada Goose (hybrid)

1 | 23 Jan 2015 (/checklist/S21560190) | Jed Hertz

Graylag x Canada Goose (hybrid)

1 | 22 Nov 2014 (/checklist/S20757529) | Jed Hertz

Snow x Ross's Goose (hybrid)

1 | 26 Jan 2005 (/checklist/S4037669) | Jed Hertz

ADDITIONAL TAXA

Greater/Lesser Scaup

17 | 5 Feb 2022 (/checklist/S102066058) | Timothy Geary

Sharp-shinned/Cooper's Hawk

1 | 4 Feb 2022 (/checklist/S101996674) | Chase Siebenborn

waterfowl sp.

5 | 25 Dec 2020 (/checklist/S77976159) | Jed Hertz

hawk sp.

1 | 21 Oct 2020 (/checklist/S75191717) | Jed Hertz

swallow sp.

2 | 9 May 2020 (/checklist/S68703263) | Molly Ulrich

new world sparrow sp.

1 | 9 May 2020 (/checklist/S68703263) | Molly Ulrich

new world warbler sp.

1 | 9 May 2020 (/checklist/S68703263) | Molly Ulrich

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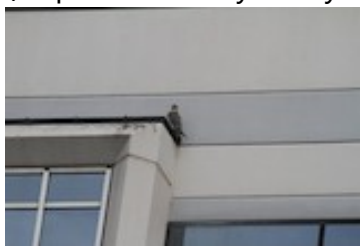
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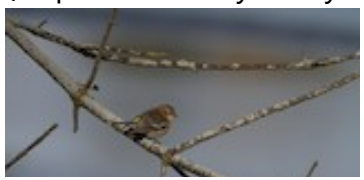



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Maxfield Weakley	5 Jul 2022 (/checklist/S114480479)	22
Kent Weakley	5 Jul 2022 (/checklist/S114487653)	21
Anonymous eBirder	4 Jun 2022 (/checklist/S114831031)	16
Colin Dobson	21 Feb 2022 (/checklist/S103368337)	18
Timothy Geary	5 Feb 2022 (/checklist/S102066058)	2
Chase Siebenborn	4 Feb 2022 (/checklist/S101996674)	7
Derek Rosenberger	4 Feb 2022 (/checklist/S101996657)	7
Jared Brewer	4 Feb 2022 (/checklist/S101997282)	6
Sarah Johnson	1 Feb 2022 (/checklist/S101837419)	7

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1	Jed Hertz	177
2	Kent Weakley	34
3	Maxfield Weakley	26
3	Eric Johnson	26
5	Carl "DJ Playback" Giometti	19
5	Steve Huggins	19
7	Colin Dobson	18

7	Colin Dobson	18	
8	John Hendrickson	17	
8	Ted Wolff	17	
10	Anne Hughes	9	

Appendix E

Photographs of the Kankakee Hydroelectric Project and Vicinity

Kankakee Dam and Powerhouse Intake Channel, Looking North

Powerhouse Intake, Trashracks, and Trashrake, Looking North

Project Tailrace Fishing and Viewing Area, Looking North

Project Tailrace Fishing and Viewing Area, Looking West

Project Tailrace Fishing and Viewing Area, Looking East

South McMullen Drive Bridge (Includes Project Transmission Line Crossing of River in Conduit), Looking Northwest from Tailrace Fishing and Viewing Area

Non-Project Tailrace Fishing and Viewing Platform
at the North Abutment of Dam, Looking West

Project Transmission Line, Looking West
on West River Street Near South 3rd Avenue

Project Transmission Line (on Right), Looking North in Alley between 8th Avenue and 9th Avenue

Non-Project La Vasseur Park
(Project Transmission Line Runs Underground through Park)