Why You Should Read This: The document below reviews the environmental impact likely from a State Revolving Fund project. As part of the environmental review, you are entitled to provide comments. If you have concerns about the environmental impact of this project, raise them now. We encourage public input in this decision making process.

IOWA STATE REVOLVING FUND
ENVIRONMENTAL INFORMATION DOCUMENT

PROJECT IDENTIFICATION

Applicant: City of Melbourne
County: Marshall
State: Iowa
Melbourne WWTF Improvements Project

SRF Number: CS1921186 01
Iowa DNR Project Number: S2020-0313A

COMMUNITY DESCRIPTION

Location: The City of Melbourne is located in Marshall County, Iowa approximately 35 miles northeast of Des Moines, Iowa and 55 miles southwest of Waterloo, Iowa.

Population: The Iowa Department of Natural Resources requires the planning period for proposed improvements extend at least 20 years beyond the date when the improvements are scheduled to begin operation. The planning period will be 20 years and extend to the year 2044. It is assumed that a population of approximately 780 will be maintained through the design life of the project.

Current Waste Treatment: The existing wastewater treatment facility is located on approximately 35.5 acres of land west of the City of Melbourne. The City of Melbourne's Wastewater Treatment Facility is a three-cell aerated lagoon facility. It has two aerated cells and a quiescent cell. The three cells are separated with floating baffle curtains. The last improvements project was completed in 2004.

Flow enters the facility through a 10-inch sewer. Flow continues from cell 1, aerated to cell 2, aerated flowing over the baffle curtain separation and then from cell 2, aerated to cell 3, quiescent zone flowing over the baffle curtain separation. From the final quiescent zone of cell 3, water is discharged to the effluent manhole to Unnamed Creek that leads to North Skunk River.

Before the construction of the three-cell aerated lagoon facility in 2004 the City of Melbourne utilized a three-cell controlled discharge lagoon system. Flow entered cell 1, primary (east side of the facility) then exited to cell 2, secondary (northwest side of the facility) and to cell 3, secondary (southwest side of the facility) though pipe. From the secondary cells water was discharged to the effluent manhole to Unnamed Creek leading to North Skunk River.

The new permit issued to the city of Melbourne by the Iowa DNR indicates that the classification for Unnamed Creek is general use. With these stream classifications, the permit limits for the treatment facility have changed to what are commonly termed "end of pipe" limits. The proposed rules and classification impose stricter ammonia discharge limitations and require disinfection of the facilities effluent. Aerated lagoons, such as the one serving the city of Melbourne, are generally unable to meet the proposed end of pipe limits on ammonia without enhancement.

PROJECT DESCRIPTION

Purpose: The purpose of this project is to make improvements to the wastewater treatment facilities to enhance their reliability, increase capacity and to replace obsolete system to safely and reliably operate the City of Melbourne's wastewater system for the next 20 years.

Proposed Improvements: The proposed project includes converting the existing aerated lagoon system to a larger, controlled discharge lagoon system and all necessary connections and appurtenances. Existing parts of the treatment facility will be updated as necessary and continue to be used, including the primary and secondary cells.

Receiving Stream: The facility currently discharges its treated wastewater into Unnamed Creek to North Skunk River. Unnamed Creek is classified as Class A2, secondary contact recreational use waters. Class A2 waters are secondary contact waters in which recreational or other uses may result in contact with the water that is either incidental or accidental. During the recreational use, the probability of ingesting appreciable quantities of water is minimal. Class A2 uses include fishing, commercial and recreational boating, any limited contact incidental to shoreline activities and activities in which users do not swim or float in the water body while on a boating activity.

North Skunk River, which is fed by unnamed creek, is designated as Class B (WW2). Class B(WW2) are those in which flow or other physical characteristics are capable of supporting a resident aquatic community that includes a variety of native nongame fish and invertebrate species. The flow and other physical characteristics limit the maintenance of warm water game fish populations. These waters generally consist of small perennially flowing streams.

ALTERNATIVES CONSIDERED

Alternatives Considered: Four treatment alternatives were considered. They include 1) continue to use the existing aerated lagoon treatment facility at its current outfall, 2) convert the facility back to a controlled discharge lagoon, 3) construct a new mechanical treatment plant, or 4) modify existing facility to an enhanced treatment aerated lagoon.

Reasons for Selection of Proposed Alternative: The existing aerated lagoon facility will most likely not be able to meet the effluent limits that have been given by the Iowa Department of Natural Resources. An un-enhanced aerated lagoon treatment facility is no longer a viable treatment alternative for the City (Alternative 1).

Alternative 2 involves converting the existing facility back to a new controlled discharge lagoon. The key disadvantage of this alternative is the limitation for additional flow volume treatment. If the City had future high wet weather flows, there would not be the flexibility to add treatment volume, and work to mitigate I&I would be required. The key advantage associated with the controlled discharge lagoon is the significantly lower estimated construction and operating and maintenance costs.

Alternative 3 involves constructing a new mechanical wastewater treatment plant. One type of mechanical plant was considered, a Sequencing Batch Reactor (SBR) Mechanical Plant. The new mechanical wastewater treatment plant would require an equalization basin to handle all flows above Average Wet Weather (AWW) flows, preliminary treatment equipment and UV disinfection. It would also require solids disposal and a Grade III wastewater treatment plant operator. The City's current plant requires only a Grade IL operator. Some of the disadvantages associated with a new mechanical wastewater treatment plant include having to provide solids disposal, the higher capital cost of construction and the higher operating and maintenance costs associated with a mechanical facility. Current City staff would also need additional training to achieve the Grade III Operator's license or a new Grade III Operator would need to be hired.

Alternative 4 involves converting the aerated lagoon treatment facility into an enhanced treatment aerated lagoon facility. Three processes were considered, the OPTAER/SAGR process by Nexom and the Lemtec™ process by Lemna Technologies, Inc. Both processes require UV disinfection. Of these processes, Lemna and TriplePoint NitrOx had both the lowest capital cost and the lowest annual operation and maintenance cost.

The selected alternative is Alternative 4, conversion of the existing aerated lagoon system back to a controlled discharge lagoon. With this conversion, future I&I projects may become necessary if wet weather flows exceed the storage volume.

The project site was selected for the availability of land, proximity to existing infrastructure, as well as minimization of the impacts to the environment. Approximately 3 acres of land acquisition from a neighboring land owner was necessary.

MEASURES TAKEN TO ASSESS IMPACT

Coordination and Documentation with Other Agencies and Special Interest Groups: The following Federal, state and local agencies were provided an opportunity to comment on the proposed project to better assess the potential impact to the environment:

Flandreau Santee Sioux
Ho-Chunk Nation
Iowa Tribe of Kansas and Nebraska
Iowa Tribe of Oklahoma
Kickapoo Tribe in Kansas
Kickapoo Tribe of Oklahoma
Lower Sioux Indian Community Council
Miami Tribe of Oklahoma
Omaha Tribe of Nebraska
Otoe-Missouria Tribe
Pawnee Nation of Oklahoma
Peoria Tribe of Indians of Oklahoma
Ponca Tribe of Indians of Oklahoma
Ponca Tribe of Nebraska
Prairie Band Potawatomi Nation
Prairie Island Indian Community
Sac & Fox Nation of Mississippi in Iowa
Sac & Fox Nation of Missouri
Sac & Fox Nation of Oklahoma
Santee Sioux Nation

Shakopee Mdewakanton Sioux Community
Sisseton-Wahpeton Oyate
Spirit Lake Tribal Council
Three Affiliated Tribes Mandan, Hidatsa & Arikara Nations
Upper Sioux Tribe
Winnebago Tribal Council
Yankton Sioux Tribe

No adverse comments have been received from any agencies or general public to date. Conditions placed on the applicant by the above agencies in order to assure no significant impact are included in the Summary of Reasons for Concluding No Significant Impact section.

ENVIRONMENTAL IMPACT SUMMARY

Construction: Traffic patterns within the community may be disrupted and above normal noise levels in the vicinity of the construction equipment can be anticipated during construction and should be a temporary problem. Adverse environmental impacts on noise quality will be handled by limited hours of contractor work time during the day. Other adverse environmental effects from construction activities will be minimized by proper construction practices, inspection, prompt cleanup, and other appropriate measures. Areas temporarily disturbed by the construction will be restored. Solid wastes resulting from the construction project will be regularly cleared away with substantial efforts made to minimize inconvenience to area residents.

Care will be taken to maintain dirt to avoid erosion and runoff. The proposed project will disturb one or more acres of soil; therefore, the applicant is required to obtain an NPDES General Permit Number 2 (for storm water discharge associated with construction activities) and abide by its terms. Provided that this permit is obtained and the terms of which are abided by, no significant impact to surface water quality, fish, shellfish, wildlife, or their natural habitats is expected.

Temporary air quality degradation may occur due to dust and fumes from construction equipment. The applicant shall take reasonable precautions to prevent the discharge of visible emissions of fugitive dusts beyond the lot line of the property during the proposed project (567 Iowa Administrative Code IAC 23.3(2)“c”).

This project may require the disposal of sewage sludge. It is the responsibility of the applicant to ensure that the disposal of any sewage sludge complies with applicable requirements found in 40 CFR Part 503 and 567 Iowa Administrative Code IAC 67.

Historical/Archaeological: Various Native American tribes with an interest in the area were provided information regarding the project. This project will not be receiving federal funds through SRF. As such, this project is not considered a federal undertaking as defined in §300320 under the National Historic Preservation Act, 54 U.S.C. 300101 et seq. for the purpose of the SRF environmental review. If this SRF project receives federal funds from other sources, it is the responsibility of the applicant to ensure all federal requirements are met for that funding.

However, if project activities uncover any item(s) that might be of archaeological, historical, or architectural interest, or if important new archaeological, historical, or architectural data should be encountered in the project area, the applicant should make reasonable efforts to avoid further impacts to the property until an assessment can be made by an individual meeting the Secretary of the Interior’s professional qualifications standards (36 CFR Part 61).

Environmental: The project area was screened for the presence of wetlands, floodplains, and sovereign lands. The proposed project will not interfere with any State-owned parks, recreational areas or open spaces. The project will not impact wetlands. The project will not impact any wild and scenic rivers as none exist within the State of Iowa. This project will not impact the 100-year floodplain

Endangered Species Act Section 7 consultation is not required for this non-federal SRF project. Section 9 of the Endangered Species Act may apply and other wildlife conservation laws such as the Migratory Bird Treaty Act of 1918 and the Bald and Golden Eagle Protection Act of 1940. However, if any State- or Federally-listed threatened or endangered species or communities are found during the planning or construction phases, additional studies and/or mitigation may be required. No adverse impacts are expected to result from this project, such as those to surface water quantity, or groundwater quality or quantity.

Land Use and Trends: The project will not displace population nor will it alter the character of existing residential areas. Approximately three acres of farmland will be permanently removed from production. Further investigation of the farmland conversion impact is not required for this environmental review as this project is not a federal undertaking for SRF.

This project should not impact population trends as the presence or absence of existing water/sewer infrastructure is unlikely to induce significant alterations in the population growth or distribution given the myriad of factors that influence development in this region. Similarly, this project is unlikely to induce significant alterations in the pattern and type of land use.

Irreversible and Irretrievable Commitment of Resources: Fuels, materials, and various forms of energy will be utilized during construction.

Nondiscrimination: All programs, projects, and activities undertaken by DNR in the SRF programs are subject to federal anti-discrimination laws, including the Civil Rights Act of 1964, section 504 of the Rehabilitation Act of 1973, and section 13 of the Federal Water Pollution Control Amendments of 1972. These laws prohibit discrimination on the basis of race, color, national origin, sex, disability, or age.

POSITIVE ENVIRONMENTAL EFFECTS TO BE REALIZED FROM THE PROPOSED PROJECT

Positive environmental effects will be improved treatment of the wastewater from the City of Melbourne, compliance with effluent discharge permit limits, reduced discharge of the pollutants and nutrients to the receiving stream, and improved water quality in the receiving stream.

SUMMARY OF REASONS FOR CONCLUDING NO SIGNIFICANT IMPACT

- The project will not significantly affect the pattern and type of land use (industrial, commercial, agricultural, recreational, residential) or growth and distribution of population.
- The project will not conflict with local, regional or State land use plans or policies.
- The project will not impact wetlands.
- The project will not affect threatened and endangered species or their habitats. If any State- or Federally-listed threatened or endangered species or communities are found during the planning or construction phases, additional studies and/or mitigation may be required. Section 9 of the Endangered Species Act may apply and other wildlife conservation laws such as the Migratory Bird Treaty Act of 1918 and the Bald and Golden Eagle Protection Act of 1940.
- The project will not displace population, alter the character of existing residential areas, or convert significant farmlands to non-agricultural purposes.

- The project will not affect the 100-year flood plain.
- The project will not have effect on parklands, preserves, other public lands, or areas of recognized scenic or recreational value.
- Various Native American tribes with an interest in the area were provided information regarding the project.
- This project will not be receiving federal funds through SRF. As such, this project is not considered a federal undertaking as defined in §300320 under the National Historic Preservation Act, 54 U.S.C. 300101 et seq. for the purpose of the SRF environmental review. If this SRF project receives federal funds from other sources, it is the responsibility of the applicant to ensure all federal requirements are met for that funding.
- If project activities uncover any item(s) that might be of archaeological, historical, or architectural interest, or if important new archaeological, historical, or architectural data should be encountered in the project APE, the applicant should make reasonable efforts to avoid further impacts to the property until an assessment can be made by an individual meeting the Secretary of the Interior's professional qualifications standards (36 CFR Part 61).
- The project will not have a significant adverse effect upon local ambient air quality provided the applicant takes reasonable precautions to prevent the discharge of visible emissions of fugitive dusts beyond the lot line of the property during the proposed project (567 IAC 23.3(2)"c").
- The project will not have a significant adverse effect upon local ambient noise levels, surface water quantity, groundwater quality or quantity, or water supply.
- No significant impact to surface water quality, fish, shellfish, wildlife, or their natural habitats is expected provided that an NPDES General Permit Number 2 (for storm water discharge associated with construction activities) is obtained and the terms of which are abided by.

The project description, scope, and anticipated environmental impacts detailed above are accurate and complete to the best to my knowledge.

_____ _____

Signature of the Mayor, City of Melbourne Date

_____

Printed Name of the Mayor, City of Melbourne

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USGS Topographic Map

Melbourne WWTF Improvements Project
Melbourne, Iowa

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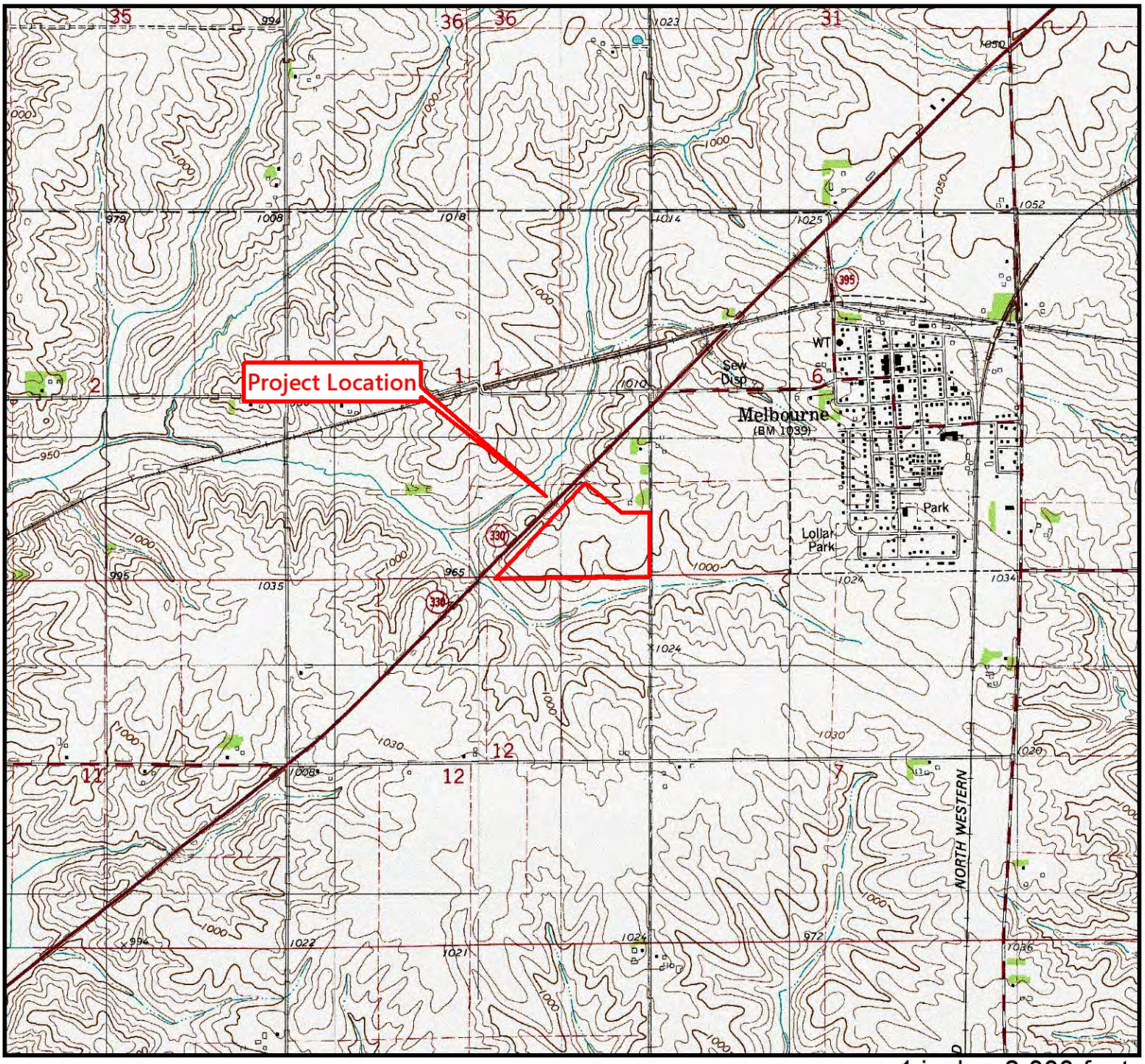

1 inch = 2,000 feet

0 1,000 2,000 3,000 4,000 5,000 Feet

Marshall County. Image source: Wikipedia, 2026.

USGS 7.5 Minute Quadrangle: Melbourne
Section: 01; Township: 82N; Range: 20W
Date: 1975

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Aerial Photograph

Melbourne WWTF Improvements Project
Melbourne, Iowa

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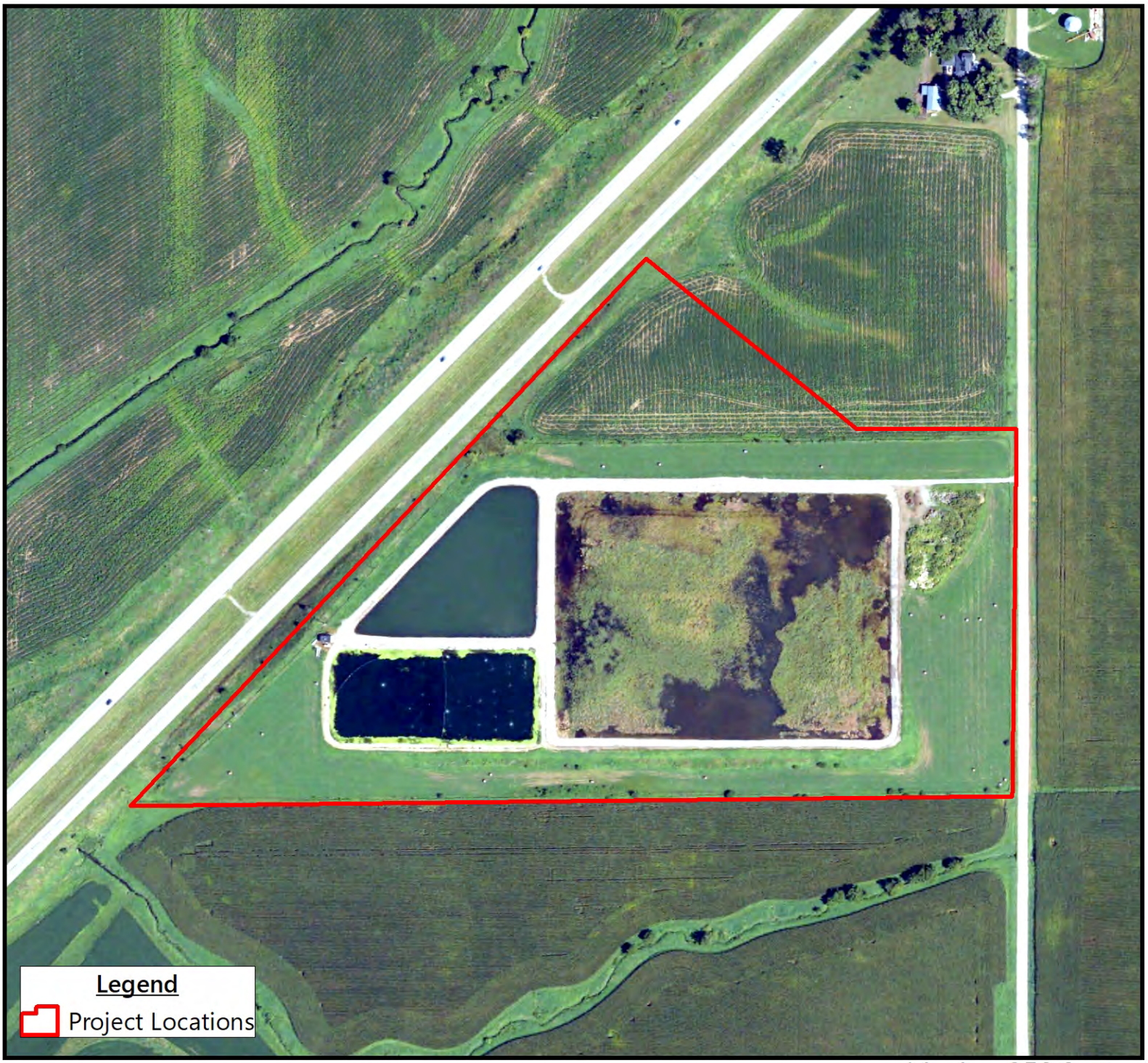

1 inch = 350 feet

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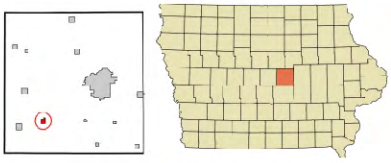

Marshall County. Image source: Wikipedia, 2026.

USGS 7.5 Minute Quadrangle: Melbourne
Section: 01; Township: 82N; Range: 20W
Date: 2025