

**Why You Should Read This:** The document below reviews the environmental impact likely from a project. This project is planned to be federally funded through your tax dollars; therefore, you are entitled to take part in its review. 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**  
**FINDING OF NO SIGNIFICANT IMPACT**

November 10, 2022

**To: All Interested Citizens, Government Agencies, and Public Groups**

An environmental review has been performed based on the procedures for implementing the National Environmental Policy Act (NEPA), for the proposed agency action below:

**Applicant:** City of Morning Sun  
**County:** Louisa  
**State:** Iowa

**SRF Number:** CS1921036 01  
**Iowa DNR Project Number:** W2019-0130A

Other Federal Funding: Requesting from CDBG (\$300,000) and Water and Wastewater Treatment Financial Assistance Program (\$100,000)

The City of Morning Sun, Iowa is planning an upgrade to their wastewater treatment plant (WWTP). The city has applied for financial assistance through the State Revolving Fund (SRF) loan program to build the project. The State Revolving Loan Program is a program authorized by the Environmental Protection Agency (EPA) and administered by the Iowa Department of Natural Resources (DNR) in partnership with the Iowa Finance Authority.

The City of Morning Sun is located in Louisa County, Iowa approximately 20 miles northwest of Burlington, Iowa and 7 miles southwest of Wapello, Iowa. The population of Morning Sun according to the 2020 US Census was 726. The design population equivalent for the year 2042 is 726.

The existing WWTP was constructed in 1971, which included a two-cell controlled discharge lagoon. The site is on a 21.77-acre parcel on 99-year lease to the City. During 1996, the City updated their plant to a two-cell aerated lagoon system with a quiescent cell. The quiescent cell is

created by a baffle curtain installed length-wise along the west side in Cell #2. The raw sewage is conveyed to the plant by two main lift stations. The treatment facility with capacities includes lift stations, Aeration Cell #1, Aeration Cell #2, Quiescent Cell, Effluent Flow Meter, and two blowers. The existing aerated lagoon system is unable to meet the water quality based effluent limits for ammonia and which take effect on November 1, 2022.

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 Morning Sun's wastewater system for at least the next 20 years.

The proposed project includes the construction of a new blower and control building and the construction of a new earthen bermed quiescent cell with valve chamber. The proposed project will also include the removal of lagoon sludge and replace air valves and diffusers. There would also be the addition of flow meters, replacement of influent and effluent structures, and installation of a standby generator. The project is also proposing to install water and gas lines along the gravel access lane from near the southeast corner of the WWTP site, east, to the east side of 173rd Avenue (N. Washington Street). The treated wastewater from the proposed facility will discharge to Roff Creek. It has a use stream designation of A-1. The Roff Creek is classified as a water stream.

The project will not significantly affect the pattern and type of land use (industrial, commercial, agricultural, recreational, and 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.

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. No historic properties will be adversely affected by the proposed project. 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 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.

Minimum separation distances will be maintained. Noise during construction will be maintained at tolerable levels through controls on construction activities. Any construction debris will be removed from the site for proper disposal. Adverse environmental effects from construction activities will be minimized with proper construction practices, inspection, prompt clean up and other appropriate measures. Areas temporarily disturbed by the construction will be restored.

It has been determined that the proposed action will result in no significant impacts to the surrounding environment. This determination is based on a careful review of the engineering report, the environmental assessment and other supporting data which are on file at the Department of Natural Resources' office in Des Moines, Iowa. These are available for public review upon request. A copy of the environmental assessment is attached. This Department will not take any administrative action on the project for at least thirty (30) calendar days from the above date. Persons disagreeing with the above environmental decision may submit comments to the department during this period. Please direct your comments to me at [casey.laskowski@dnr.iowa.gov](mailto:casey.laskowski@dnr.iowa.gov) or 515-204-5672.

Sincerely,

Casey Laskowski  
Environmental Specialist  
502 E. 9<sup>th</sup> Street  
Des Moines, IA 50319-0034

Enclosures: Environmental Assessment  
Project Map

Distribution

List (email): Benjamin Carhoff, Hart-Frederick Consultants  
Randy Krutzfield, Hart-Frederick Consultants  
Brittini Rahmus, Southeast Iowa Regional Planning  
Edward Boling, Council on Environmental Quality  
Jake Hansen, Iowa Department of Agriculture and Land Stewardship  
Ken Sharp, Iowa Department of Public Health  
Sarah Petersen, Iowa Department of Public Health  
Nichole Hansen, Iowa Economic Development Authority  
Ingrid Gronstal, Iowa Environmental Council  
Tracy Scebold, Iowa Finance Authority  
Tony Toigo, Iowa Finance Authority  
Mickey Shields, Iowa League of Cities

Jane Clark, Sierra Club  
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Kelly Beard-Tittone, USEPA Region VII  
Morning Sun News Herald

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**IOWA STATE REVOLVING FUND**  
**ENVIRONMENTAL ASSESSMENT DOCUMENT**

***PROJECT IDENTIFICATION***

**Applicant:** City of Morning Sun  
**County:** Louisa  
**State:** Iowa

**SRF Number:** CS1921036 01  
**Iowa DNR Project Number:** W2019-0130A

Other Federal Funding: Requesting from CDBG (\$300,000) and Water and Wastewater Treatment Financial Assistance Program (\$100,000)

***COMMUNITY DESCRIPTION***

**Location:** The City of Morning Sun is located in Louisa County, Iowa approximately 20 miles northwest of Burlington, Iowa and 7 miles southwest of Wapello, Iowa.

**Population:** The population of Morning Sun according to the 2020 US Census was 726. The design population equivalent for the year 2042 is 726.

**Current Waste Treatment:** The existing WWTP was constructed in 1971, which included a two-cell controlled discharge lagoon. The site is on a 21.77-acre parcel on 99-year lease to the City. During 1996, the City updated their plant to a two-cell aerated lagoon system with a quiescent cell. The quiescent cell is created by a baffle curtain installed length-wise along the west side in Cell #2. The raw sewage is conveyed to the plant by two main lift stations. The treatment facility with capacities includes lift stations, Aeration Cell #1, Aeration Cell #2, Quiescent Cell, Effluent Flow Meter, and two blowers. The existing aerated lagoon system is unable to meet the water quality based effluent limits for ammonia and which take effect on November 1, 2022.

## **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 Morning Sun's wastewater system for at least the next 20 years.

**Proposed Improvements:** The proposed project includes the construction of a new blower and control building and the construction of a new earthen bermed quiescent cell with valve chamber. The proposed project will also include the removal of lagoon sludge and replace air valves and diffusers. There would also be the addition of flow meters, replacement of influent and effluent structures, and installation of a standby generator. The project is also proposing to install water and gas lines along the gravel access lane from near the southeast corner of the WWTP site, east, to the east side of 173rd Avenue (N. Washington Street).

**Receiving Stream:** The treated wastewater from the proposed facility will discharge to Roff Creek. It has a use stream designation of A-1. The Roff Creek is classified as a water stream.

## **ALTERNATIVES CONSIDERED**

**Alternatives Considered:** Four alternatives were considered for improved treatment of the wastewater from the City of Morning Sun to comply with all effluent discharge permit limits and regulations.

Alternate 1 - Existing Aerated Lagoon Treatment Facility: The new NPDES permit includes water quality based effluent limits for ammonia nitrogen the new ammonia limits are more restrictive than the previous permit limits. Based upon current collected data, it is our opinion that the existing aerated lagoon treatment facility alone will not be able to meet the new limits during certain times of the year. The existing treatment system with only minor upgrades is not a viable option.

Alternate 2 - Lemna Lemtec™ Biological Treatment Process: The Lemna Lemtec process utilizes a series of aerobic lagoon treatment cells followed by a settling zone and a polishing reactor. The treatment cells are fitted with a floating insulated cover. The polishing reactor consists of concrete tanks with submerged fixed film media arranged in large cubes with bottom aerators to aid in the nitrification of any ammonia remaining in the effluent from the covered lagoons. There is a limited amount of open space at the current facility site. A large portion of one of the current lagoon cells would have to be converted for use as the Lemna process. The Lemna process also assumes a 12-foot water depth in each of the process lagoons. Based on the as-built plans of the previous facility upgrade, the current lagoons have a water depth of 5.8-feet and additional earthwork would be required for this option. The process also requires pretreatment,

consisting of screening, but not grit removal. Since the current facility is fed by two lift station and not directly fed by gravity sewers, the screening operation is handled at the lift stations.

Alternate 3 - Triplepoint's NitrOx™ Process: Triplepoint's NitrOx™ Process utilizes an aerated reactor with suspended fixed film media, essentially the same as a moving bed bioreactor (MBBR), to help nitrify ammonia in the effluent from aerated lagoons. During cold weather, a heat exchanger maintains the water temperature in the reactor at a minimum of 41°F to promote biological nitrification. The Nitrox reactor is integrated into the treatment system between the last aerated cell and the outlet. Recent data from the manufacturer indicates that the quiescent cell after the reactor and prior to the outlet is not necessary. The Nitrox process includes four concrete tanks and blowers in a separate blower building. The process equipment is a compact "add-on" and would not require conversion of the current treatment lagoons, however, some earthwork would be required to relocate an existing drainage ditch. The process and new quiescent cell can be located adjacent to Cell #2 such that a disinfection or other processes could be added if required by future NPDES permits. Replacement of the effluent structure may be required to accommodate the additional piping from the quiescent cell.

Alternate 4 - Nexom Submerged Attached Growth Reactor (SAGR): The SAGR® consists of a clean stone bed that is fully aerated using LINEAR FBA® aeration. The system is constructed of sacrificial wooden walls, covered with an impermeable membrane liner. Water flows through the substrate either horizontally or vertically. A layer of insulating mulch at the surface prevents ice formation in the bed, allowing the system to treat wastewater that is near freezing. No screening or grit removal is required for this system. As with Alternate 2, a large portion, as much as one-third, of Cell #2 would need to be converted for use as the SAGR.

**Reasons for Selection of Proposed Alternative:** Alternate 3 - Triplepoint's NitrOx™ Process was selected as it is the most cost effective and will ensure the WWTP meets all required limits.

The project site was selected for the availability of land (it is already City-owned), proximity to existing infrastructure, engineering criteria, capital cost, operational costs and considerations, as well as minimization of the impacts to the environment.

### ***MEASURES TAKEN TO ASSESS IMPACT***

**Public Involvement:** A public hearing was held on October 25, 2022 at 6:00PM. The public notice of this hearing was published in the Morning Sun News Herald on September 22, 2022. The purpose of this hearing was to present the environmental and financial impacts of the proposed improvement project. No written or oral comments were received.

**Coordination and Documentation with Other Agencies and Special Interest Groups:**

The following Federal, state and local agencies were asked to comment on the proposed project to better assess the potential impact to the environment:

U.S. Army Corps of Engineers  
U.S. Fish and Wildlife Service  
State Historical Society of Iowa (State Historical Preservation Office)  
Iowa DNR Conservation and Recreation Division  
Iowa DNR Flood Plain Management Section  
Citizen Band Potawatomi Indian Tribe  
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 Tribal Council  
Osage Tribal Council  
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 Tribal Business and Claims Committee  
Louisa County Historic Preservation Commission

No adverse comments were received from any agencies or general public. 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 soils over an area greater than one acre; 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. Properties that contain regulated materials are located within or very near the proposed project area. If construction activities find an unknown area of contamination, it is the responsibility of the applicant to follow the procedure for notification of hazardous conditions (567 IAC 131.2). Excavated soil that contains a hazardous substance must be assessed and properly disposed of (567 IAC 100.4).

**Historical/Archaeological:** The State Historical Preservation Office (SHPO), the Certified Local Government and various Native American tribes with an interest in the area were provided information regarding the project. The DNR has determined, and the SHPO has concurred (R&C#211058571), that this undertaking will result in “no historic properties affected” based on the scope of the project, the prior use of the project area, and the findings of the Phase I Archeological Survey conducted on the project property. 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 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).

**Environmental:** A Joint Application was submitted by the City's consultant to the Iowa DNR Conservation and Recreation Division and U.S. Army Corps of Engineers. The DNR Flood Plain Management Section will determine if the proposed project requires a permit for impacts to the 100-year floodplain. The DNR Conservation and Recreation Division will determine if the project will impact any State-owned lands or State-listed threatened or endangered species. The U.S. Army Corps of Engineers will determine if the proposed project will impact wetlands or jurisdictional waters of the United States. According to the Iowa DNR Conservation and Recreation Division, the proposed project will not interfere with any State-owned parks, recreational areas or open spaces. The U.S. Army Corps of Engineers concurs that the project will not impact wetlands. The project will not impact any wild and scenic rivers as none exist within the State of Iowa.

The U.S. Fish & Wildlife Service Section 7 Technical Assistance website consultation determined, and Iowa DNR Conservation and Recreation Division agree, that the project will not impact threatened or endangered species or their habitats. 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. According to the Iowa DNR Flood Plain Management Section, this project will not impact the 100-year floodplain. No adverse impacts are expected to result from this project, such as those to surface water quantity, or groundwater quality or quantity. Therefore, no significant impact to surface water quality, fish, shellfish, wildlife, or their natural habitats is expected to result from this project.

**Land Use and Trends:** The project will not displace population nor will it alter the character of existing residential areas. The proposed project is within the present corporate limits of Morning Sun in areas zoned residential, commercial, or industrial. No significant farmlands will be impacted. 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 Irrecoverable Commitment of Resources:** Fuels, materials, and various forms of energy will be utilized during construction.

### ***POSITIVE ENVIRONMENTAL EFFECTS TO BE REALIZED FROM THE PROPOSED PROJECT***

Positive environmental effects will be improved treatment of the wastewater from the City of Morning Sun, 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, and 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.
- 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.
- No historic properties will be adversely affected by the proposed project. 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 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.

THEREFORE:

The above project conforms to the criteria in 567 Iowa Administrative Code 92.8(1)“b” relating to compliance with the National Environmental Policy Act of 1969. No adverse effect or significant environmental impact is foreseen at this time.

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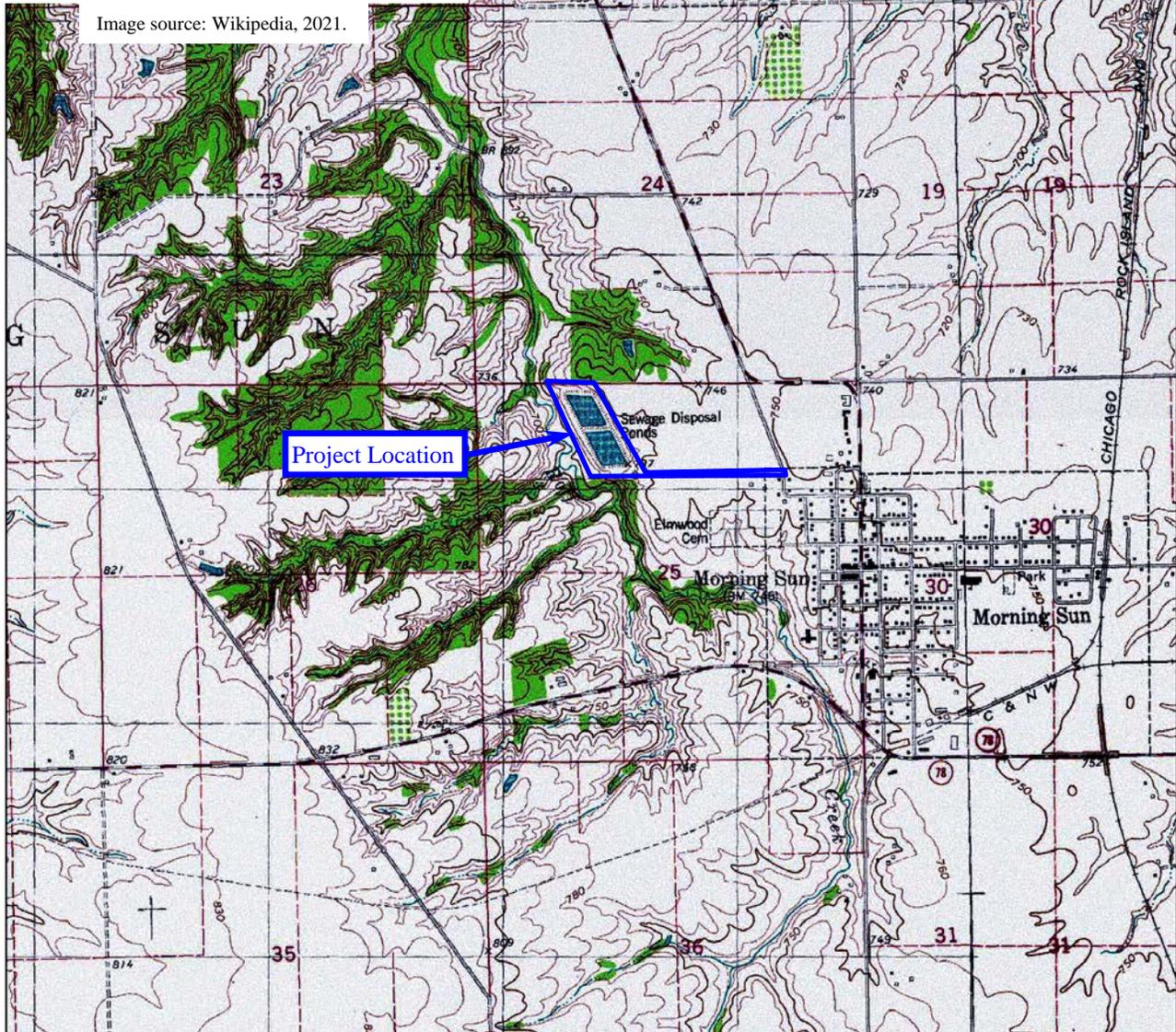
Casey Laskowski

Environmental Review Specialist  
State Revolving Fund  
Iowa Department of Natural Resources

**USGS 7.5 Minute Quadrangle: Morning Sun**  
**Section: 25, Township: 73 N, Range: 04 W**  
**Date: 1981**  
**Scale: 1 Inch = 2,000 Feet**



**North**



## USGS Topographic Map

Morning Sun Wastewater Treatment Plant Improvements  
Morning Sun, IA

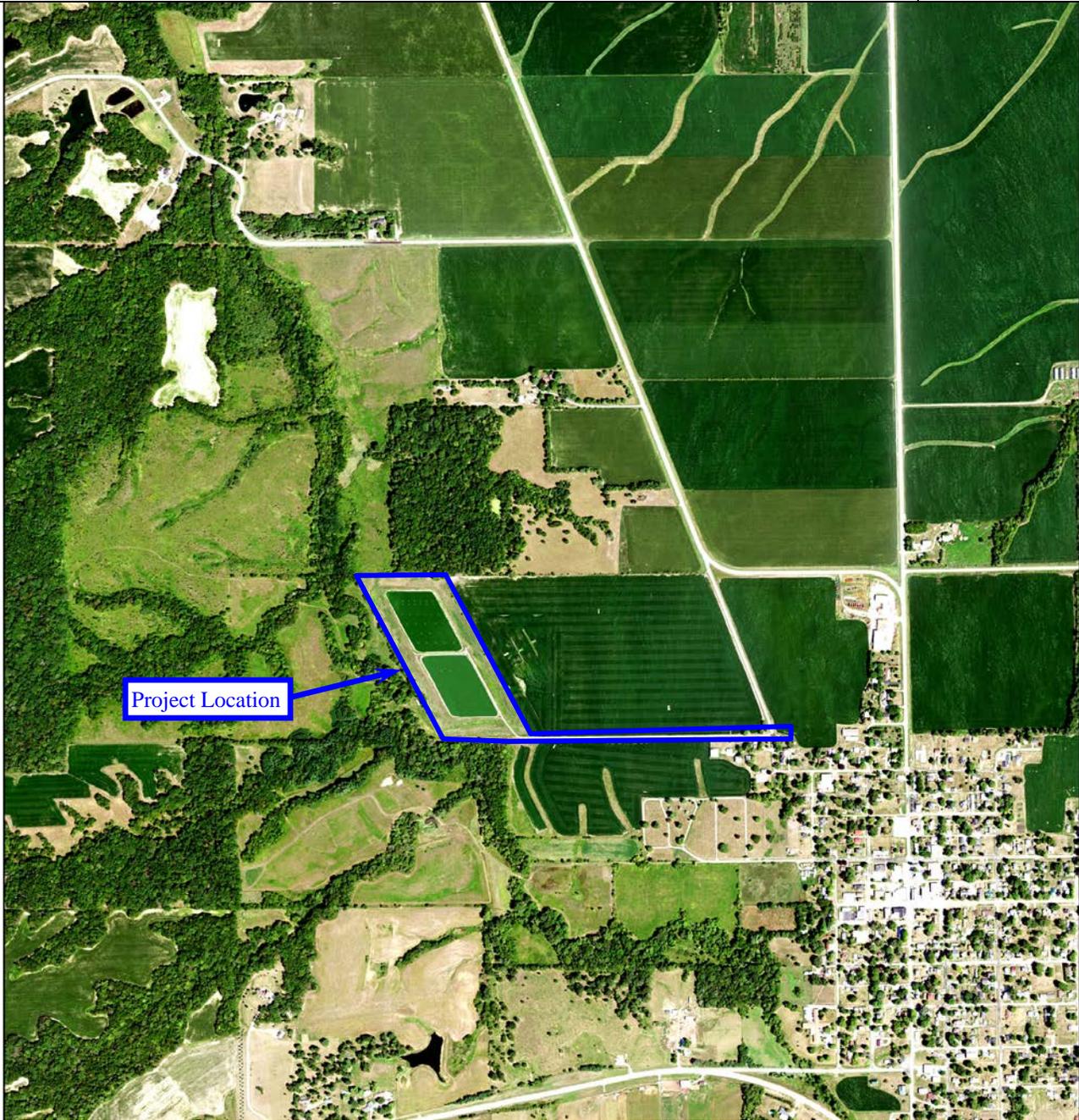


State Revolving Fund  
502 East 9<sup>th</sup> Street  
Des Moines, IA 50319-0034

Location information provided by Hart-Frederick Consultants



North



Project Location

## Aerial Photograph 2017

Morning Sun Wastewater Treatment Plant Improvements  
Morning Sun, IA



State Revolving Fund  
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Des Moines, IA 50319-0034