Memorandum

DATE: September 14, 2022
FROM: Christine Schwake
RE: Rationale for Section 401 Water Quality Certification for 2021-1076 City of Clinton

Project Proponent: City of Clinton
Corps #: 2021-1076
DNR #: 22-N-045-09-01-S

Project Description: The project includes diversion of wastewater from the Archer Daniels Midland Company (ADM) wastewater treatment plant to the City of Clinton’s (City) Regional Wastewater Reclamation Facility (RWRC) for treatment. The project work at the treatment plant will include addition of anaerobic pretreatment with an ADI-BVF, two biological nutrient reduction basins, two final clarifiers, new rotary drum thickener, and a two-channel rotary press addition for sludge handling. This work will result in 3.38 acres of wetland loss. ADM discharges treated wastewater to the Mississippi River and operates under National Pollutant Discharge Elimination System (NPDES) Permit No. 2326101. The Clinton RWRC discharges to Beaver Slough (Mississippi River) and operates under NPDES Permit No. 2326001. The City has come to an agreement with ADM for the City to accept the proposed waste stream from ADM. This requires new conveyance piping and expansion of the existing RWRF to accommodate the additional flow and load capacity and meet future discharge limits. The Project is funded by the Clean Water State Revolving Fund (CWSRF) Program, assigned SRF project #CS1921021-01.

The ADM Pump Station is a submersible style pump station with pumps located in a sump pit. The pumps are submerged and pump out through the 24-inch force main. Construction of the outfall expansion is needed to convey the future flow for discharge into the Beaver Slough of the Mississippi River. The current outfall is a single 36-inch diameter pipe. The proposed outfall construction adds a parallel 30-inch pipe to increase the outfall capacity.

The proposed project would result in the discharge of fill material into approximately 3.38 acres of emergent wetland. The total permanent loss of wetlands would be 3.38 acres. Impacts to aquatic resources are shown on the attached map. The permanent impacts occur at the RWRF.

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’s wastewater system for the next 20 years. The Clinton RWRF is responsible for the collection, transport, and treatment of wastewater for the cities of Clinton, Camanche, and Low Moor. The RWRF discharges treated wastewater to Beaver Slough of the Mississippi River. The City’s RWRF cannot meet future limits for E. coli listed in its NPDES permit without modification. ADM owns and operates another wastewater treatment facility for industrial process wastewater. The ADM plant discharges treated wastewater to Beaver Slough, just upstream of the City’s discharge point. The ADM plant will not be able to adequately treat its wastewater in the future, due to its age and changes in its NPDES discharge requirements. To meet new NPDES discharge limits at ADM’s current plant, ADM would need to make major facility upgrades requiring a large footprint. The ADM wastewater plant is landlocked between the railroad tracks, Beaver Slough, an industrial landfill, and a neighboring industry. With no available land to expand to, it is not economically nor physically feasible to implement the treatment processes required to reach new discharge limits on-site. (See the public notice, Attachment 1, for more detail.)

Project Location: 4025 South 30th Street, Clinton Iowa. S22, T81N, R6E, Clinton County, Iowa. UTM NAD-83 Zone 15. Northing 4632268.13, Easting 7290522.20. Latitude 41.8057, Longitude -90.2556.
Receiving Streams
Mill Creek is an A1, BWW1 designated use waterbody and the Mississippi River (Beaver Slough) is an A1, BWW1, HH designated use waterbody. The designations have been adopted in Iowa’s state rule described in the rule-referenced document of Surface Water Classification effective on July 24, 2019.

Antidegradation
Social and Economic Importance
As stated in the “Clinton, Iowa Regional Wastewater Reclamation Facility ADM Expansion and Conveyance Project Section 404 Submittal Package” prepared by Veenstra & Kimm Inc. April 21, 2022 (see Attachment 2), “The Clinton Regional Wastewater Reclamation Facility (RWRF) is responsible for the collection, transport, and treatment of wastewater for the cities of Clinton, Camanche, and Low Moor. The RWRF discharges treated wastewater to Beaver Slough of the Mississippi River. The City’s RWRF cannot meet future limits for E. coli listed in its NPDES permit without modification. Archer Daniels Midland Company (ADM) owns and operates another wastewater treatment facility for industrial process wastewater. The ADM plant discharges treated wastewater to Beaver Slough, just upstream of the City’s discharge point. The ADM plant will not be able to adequately treat its wastewater in the future, due to its age and changes in its NPDES discharge requirements.

To meet new NPDES discharge limits at ADM’s current plant, ADM would need to make major facility upgrades requiring a large footprint. The ADM wastewater plant is landlocked between the railroad tracks, Beaver Slough, an industrial landfill, and a neighboring industry as shown in Figure 1. With no available land to expand to, it is not economically nor physically feasible to implement the treatment processes required to reach new discharge limits on-site.

![Figure1 - ADM Treatment Plant Aerial](image-url)
For these reasons, the City of Clinton and ADM have come to an agreement for the City to accept the waste stream from ADM. The City of Clinton is currently in the process of designing improvements to increase the capacity of the RWRF to accommodate ADM's waste stream and meet future E. coli limits.

This project is important for the environment and public health. Eliminating as much suspended solids, E. coli, and other pollutants from the river is essential for people and wildlife. To learn more about Escherichia coli (E. coli), please visit the Centers for Disease Control and Prevention website: [https://www.cdc.gov/ecoli/index.html](https://www.cdc.gov/ecoli/index.html). It is important for tourism for the Mississippi River to be a safe environment for people and wildlife.

In addition, it will provide jobs in both the design and construction phases. Materials needed for the project will likely be locally purchased.

Therefore, this project would provide important social and economic benefits.

**Alternatives Analysis**

The City has stated that a range of alternatives for the project were developed and considered to reduce and avoid impacts to aquatic resources while maintaining project purpose. The City is aware that compensatory mitigation would be required for the loss of wetland resources and has proposed purchasing 3.38 acres emergent wetland credits from the Nahant Marsh Mitigation Site in Davenport, Iowa.

As stated in the "Clinton, Iowa Regional Wastewater Reclamation Facility ADM Expansion and Conveyance Project Section 404 Submittal Package" prepared by Veenstra & Kimm Inc. April 21, 2022 (see Attachment 2), "The proposed project is needed to meet NPDES discharge limits for the City of Clinton and ADM. To meet the needs of both parties, The City of Clinton and ADM have come to an agreement for the City to accept the waste stream from ADM. For the City to accommodate the additional waste stream from ADM while mitigating impacts to the environment, several alternatives were considered as discussed below.

**ALTERNATIVE 1: NO ACTION**

This alternative consists of the continued operation of the City of Clinton's RWRF and ADM's wastewater treatment facility as usual. The City's RWRF cannot meet future limits for E. coli listed in its NPDES permit without modification. The ADM plant will not be able to adequately treat its wastewater in the future, due to its age and changes in its NPDES discharge requirements. The inability to meet NPDES discharge limits also results in environmental damage to the receiving water body. For these reasons, the alternative was not deemed practicable.

**ALTERNATIVE 2: LAND APPLICATION**

This alternative consists of diverting ADM's waste stream for land application. To meet Iowa Wastewater Facilities Design Standard Chapter 21 design requirements for land application, the minimum storage required is 200 days. About 1,620 acres of land would be required to store this volume, neglecting any buffer area. There is not land of this area within 5 miles of the wastewater plant, so Alternative 2 was not considered a practicable option.

**ALTERNATIVE 3: EXPANSION OF CLINTON RWRF WITH ADDITION OF LOW-RATE ANAEROBIC PRETREATMENT, CLASS A SLUDGE PRODUCTION, AND UV DISINFECTION**

This alternative would consist of additions and modifications to the City's existing RWRF. The RWRF must be expanded to ensure that the additional waste stream from ADM will not take up any of the City's existing treatment capacity. The existing capacity accounts for slight anticipated population growth over the next 20 years. The City's existing influent flow from the residential and commercial users would enter the facility as it currently does, through grit removal and screening in the Headworks Building. From there, the existing influent flow would be directed to a new Aeration Basin splitter box, where it blends with pretreated industrial waste from ADM.
For the new proposed waste stream from the local SIU ADM, new structures and processes would be added to the City's existing RWRF. These processes would include a Low-Rate Anaerobic Lagoon system for pretreatment. From the Low-Rate Anaerobic Lagoons, the industrial waste stream would be blended with the municipal waste stream at a new Aeration Basin splitter box.

From there, the blended waste stream would flow through the plant much like it currently does. The wastewater would pass through the Aeration Basins (BNRs) and then through the Final Clarifiers.

New units would be added in parallel to accommodate the additional flow. Next, a new UV Disinfection system would be added to meet the new E. coli effluent limits. From there, flow would be split to the existing effluent pump station and a new effluent pump station, which would each discharge to the existing permitted outfall at Beaver Slough.

The sludge produced by both the City's existing RWRF and the new proposed waste stream from the local SIU ADM would be handled in a new sludge handling facility. The sludge handling facility would be a conversion of the City's existing Aerobic Digesters to sludge holding tanks, and a Biosolids Dryer would be installed to receive and process dewatered solids. The biosolids storage area would be large enough to provide over two years holding time with dewatered solids. This process would result in Class A Sludge Production.

The alternative also entails conveyance system upgrades to transport wastewater from ADM to the RWRF and from the RWRF to the existing permitted outfall at Beaver Slough. New pumping stations and a dedicated sewer main would need to be constructed from the ADM facility to the City's RWRF. Another effluent pumping station at the RWRF would need to be added, with a new force main to the City's permitted outfall.

Alternative No. 3 provides sufficient treatment to meet the effluent limits listed in the newly received NPDES permit and sufficient capacity to accept the new proposed waste stream. This alternative would require temporary and permanent impacts to aquatic resources as discussed in the Wetland Mitigation section. These impacts include:

- Permanent impacts to 3.38 acres of wetlands, including fractions of forested and emergent wetlands.
- Temporary impacts to forested/scrub/shrub and emergent wetlands along the conveyance system alignment.

Alternative No. 3 provides sufficient capacity and treatment to meet the effluent limits listed in the newly received NPDES permit. Evaluation of Alternative No. 3 indicated it has both the lowest capital cost and present worth cost, making it the most practicable and economically efficient alternative.

**ALTERNATIVE 4: EXPANSION OF CLINTON RWRF WITH ADDITION OF MEDIUM-RATE ANAEROBIC PRETREATMENT, EXPANSION OF AEROBIC DIGESTION, AND UV DISINFECTION**

This alternative would consist of additions and modifications to the City's existing RWRF. The RWRF must be expanded to ensure that the additional waste stream from ADM will not take up any of the City's existing treatment capacity. The existing capacity accounts for slight anticipated population growth over the next 20 years. The City's existing influent flow from the residential and commercial users would enter the facility as it currently does, through grit removal and screening in the Headworks Building. From there, the existing influent flow would be directed to a new Aeration Basin splitter box, where it blends with pretreated industrial waste from ADM.

For the new proposed waste stream from the local SIU ADM, new structures and processes would be added to the City's existing RWRF. These processes would include a Medium-Rate Anaerobic Lagoon system for pretreatment. From the Medium-Rate Anaerobic Lagoons, the industrial waste stream would be blended with the municipal waste stream at a new Aeration Basin splitter box.
From there, the blended waste stream would flow through the plant much like it currently does. The wastewater would pass through the Aeration Basins (BNRs) and then through the Final Clarifiers. New units would be added in parallel to accommodate the additional flow. Next, a new UV Disinfection system would be added to meet the new *E. coli* effluent limits. From there, flow would be split to the existing effluent pump station and a new effluent pump station, which would each discharge to the existing permitted outfall at Beaver Slough.

The sludge produced by both the City's existing RWRF and the new proposed waste stream from the local SIU ADM would be handled in an expanded sludge handling facility. The sludge handling facility would include an expansion of the City's existing Aerobic Digesters, additional thickening and dewatering equipment, and additional sludge storage space. This process would continue to produce Class B sludge.

The alternative also entails conveyance system upgrades to transport wastewater from ADM to the RWRF and from the RWRF to the existing permitted outfall at Beaver Slough. New pumping stations and a dedicated sewer main would need to be constructed from the ADM facility to the City's RWRF. Another effluent pumping station at the RWRF would need to be added, with a new force main to the City's permitted outfall.

Alternative No. 4 provides sufficient capacity to accept the new proposed waste stream. The Medium-Rate Anaerobic Lagoon system has a smaller footprint than the Low-Rate system, which would result in less of an impact to the wetlands surrounding the RWRF. However, the Medium-Rate Anaerobic Lagoon system was determined not to provide sufficiently consistent treatment to meet the effluent limits listed in the newly received NPDES permit due to reliability concerns. The alternative was also determined not to be economically efficient.

PERMITEE’S PREFERRED ALTERNATIVE

The alternatives were evaluated based on practicability, economic efficiency, and environmental impact. Alternative No. 3, expansion of existing RWRF with the addition of low-rate anaerobic pretreatment, expansion of the aeration basins (BNRs) and final clarifiers, addition of UV disinfection, and conversion of the existing aerobic digestion process to Class A sludge production, is the preferred reasonable treatment alternative.

The selected preferred alternative, Alternative No. 3, is the least degrading reasonable alternative identified, in accordance with 567 IAC 61.2(2) and the Iowa Antidegradation Implementation Procedure (2010 and 2016). See Attachment 2 for details regarding how this was determined.

Pollutants of Concern

The pollutants present in the discharge from this type of project may be substances present in runoff, or are the result of a spill. The DNR has identified the following pollutant of concern in discharges from this project and the potential impacts on water quality:

*Increased Turbidity/Total Suspended Solids*

The turbidity of water is related to the amount of suspended solids contained in the water. Suspended solids decrease the clarity of water, reduce light penetration, and can impair the photosynthetic activity of aquatic plants. Suspended solids can be aesthetically displeasing and can reduce the recreational value of a water body. If suspended solids screen out light and impair growth of aquatic plants, dissolved oxygen levels can decrease. Suspended solids can be harmful to fish and other aquatic life by causing abrasive injuries and clogging gills and respiratory passages.

Increases in turbidity/total suspended solids from projects authorized by this project will generally be local and temporary. To address turbidity/total suspended solids, the permittee will control runoff to water bodies using a variety of best management practices (BMPs).

Best Management Practices in Permit and Certification Conditions

*Permit-Based BMPs*

The Corps has BMP-based conditions in the individual Section 404 permit.
Construction activity that disturb one or more acres require a storm water NPDES permit (NPDES Permit No. 2326101) from the DNR. For projects that require storm water NPDES permits, Storm Water Pollution Prevention Plans (SWPPPs) are developed, which typically include BMP-based conditions.

Certification-Based BMPs
The DNR is adding BMP-based conditions to the draft certification (See Attachment 3 for the draft certification). The combined listed BMPs, when adhered to by the permittees, protect Iowa’s water quality by controlling erosion and sediment runoff to prevent pollution from reaching the nearby water bodies. Antidegradation requirements will be considered to be met if all appropriate and reasonable BMPs required by permit and certification are applied and maintained. See, 567 IAC 61.2(2); Iowa Antidegradation Implementation Procedure § 6.3.

For the above discussed reasons, the DNR makes the following findings:
1. The level of water quality necessary to protect applicable beneficial uses is fully maintained. Water quality shall not be degraded to a level that does not comply with the applicable Water Quality Standards (WQS).

   This is based on reviewing the Corps/DNR public notice (Attachment 1), the Veenstra & Kimm Inc. “Clinton, Iowa Regional Wastewater Reclamation Facility ADM Expansion and Conveyance Project Section 404 Submittal Package” (Attachment 2), as well as adding certification conditions (Attachment 3). The DNR concludes that the level of water quality necessary to protect applicable beneficial uses is fully maintained.

2. The highest statutory and regulatory requirements for new discharges are achieved through the alternatives analysis.

   The DNR is in agreement that Veenstra & Kimm’s selected alternative is the least degrading reasonable alternative (Alternative 3), and therefore degradation is “necessary” as defined in the AIP. The DNR is in agreement that the project will accommodate important social and economic development, as described above. The DNR finds that the BMP-based approach, with certification conditions (Attachment 3), ensures that the highest statutory and regulatory requirements for a discharge from this project are met.

3. All cost-effective and reasonable BMPs for nonpoint source pollution control are implemented.

   As discussed above, certification conditions ensure BMPs are implemented, and so all cost-effective and reasonable BMPs for nonpoint source pollution control are implemented. Additionally, the BMP-based approach would include all BMPs specified in the NPDES storm water permit, the certification, and individual Section 404 permit.

4. Allowing degradation of water quality is necessary and accommodates important economic or social development from activities authorized by this project.

   The DNR is in agreement that the project will accommodate important social and economic development, as described in further detail above.
PUBLIC NOTICE

Applicant: City of Clinton, IA
Date: August 30, 2022
Expires: September 28, 2022
CEMVR-RD-2021-1076
Section 10/404/408

Joint Public Notice
US Army Corps of Engineers
Iowa Department of Natural Resources

1. **Applicant:** City of Clinton, 4025 South 30th Street, Clinton, Iowa 52732.

2. **Project Location:** The project is located at 4025 South 30th Street, Clinton, Iowa. Clinton County, Iowa. The approximate center of the project is located at: UTM NAD-83 Zone 15. Northing 4632268.13, Easting 729052.20. Latitude 41.8092, Longitude -90.2426.

3. **408 Request:** In compliance with 33 USC 408 (Section 14 of the Rivers and Harbors Act of 1899; hereinafter Section 408), the Clinton Regional Wastewater Reclamation Facility currently discharges to Beaver Slough and, requested permission to modify the Clinton Levee, an existing federally-authorized flood risk management project situated along Beaver Slough part of the Mississippi River. The proposal includes adding a 30-inch discharge pipe to the Mississippi River. Modifications to the USACE levee are located at the old municipal sewage treatment plant.

4. **Project Description:**
   
   A. The project includes diversion of wastewater from the Archer Daniels Midland (ADM) wastewater treatment plant to the City of Clinton’s Regional Wastewater Reclamation Facility for treatment. The project work at the treatment plant will include addition of anaerobic pretreatment with an ADI-BVF, two biological nutrient reduction basins, two final clarifiers, new rotary drum thickener and a two-channel rotary press addition for sludge handling. This work will result in 3 acres of wetland loss. ADM discharges treated wastewater to the Mississippi River and operates under NPDES Permit No. 2326101. The Clinton Regional Wastewater Reclamation Facility discharges to Beaver Slough and operates under NPDES Permit No. 2326001. The City of Clinton has come to an agreement with ADM for the City to accept the proposed waste stream from ADM. This requires new conveyance piping and expansion of the existing RWRF to accommodate the additional flow and load capacity and meet future discharge limits. The Project is funded by the Clean Water State Revolving Fund (CWSRF) Program, assigned SRF project #CS1921021-01.

   B. The ADM Pump Station is a submersible style pump station with pumps located in a sump pit. The pumps are submerged and pump out through the 24-inch forcemain. Construction of the outfall expansion is needed to convey the future flow for discharge into the Beaver Channel of the Mississippi River. The current outfall is a single 36-inch diameter pipe. The proposed outfall construction adds a parallel 30-inch pipe to increase the outfall capacity.
C. The proposed project would result in the discharge of fill material into approximately 3.38 acres of emergent wetland. The total permanent loss of wetlands would be 3.38 acres. Impacts to aquatic resources are shown on the attached map. The permanent impacts occur at the Regional Wastewater Reclamation Site.

5. **Purpose and Need**: 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 Clinton’s wastewater system for the next 20 years. The Clinton Regional Wastewater Reclamation Facility (RWRF) is responsible for the collection, transport, and treatment of wastewater for the cities of Clinton, Camanche, and Low Moor. The RWRF discharges treated wastewater to Beaver Slough of the Mississippi River. The City’s RWRF cannot meet future limits for E.coli listed in its NPDES permit without modification. Archer Daniels Midland Company (ADM) owns and operates another wastewater treatment facility for industrial process wastewater. The ADM plant discharges treated wastewater to Beaver Slough, just upstream of the City’s discharge point. The ADM plant will not be able to adequately treat its wastewater in the future, due to its age and changes in its NPDES discharge requirements. To meet new NPDES discharge limits at ADM’s current plant, ADM would need to make major facility upgrades requiring a large footprint. The ADM wastewater plant is landlocked between the railroad tracks, Beaver Slough, an industrial landfill, and a neighboring industry. With no available land to expand to, it is not economically nor physically feasible to implement the treatment processes required to reach new discharge limits on-site.

6. **Avoidance and Minimization**: The applicant has stated that a range of alternatives for the project were developed and considered to reduce and avoid impacts to aquatic resources while maintaining project purpose. The applicant is aware that compensatory mitigation would be required for the loss of wetland resources and has proposed purchasing 3.38 acres emergent wetland credits from the Nahant Marsh in Davenport, Iowa.

7. **Agency Review**: The project plans have been submitted to the Iowa Department of Natural Resources for state certification of the proposed work in accordance with Section 401 of the Clean Water Act. The certification, if issued, will express the Department's opinion that the proposed activity will comply with Iowa's water quality standards (Chapter 61 IAC). The applicant has also applied for authorization of work in the floodplain pursuant to Chapter 455B of the Iowa Code and other applicable state permits. Written comments concerning possible impacts to waters of Iowa should be addressed to: Iowa Department of Natural Resources, 502 East 9th Street, Des Moines, Iowa 50319. A copy of the comments should be provided to the Corps of Engineers office (see paragraph 11, of this public notice for address).

8. **Historical/Archaeological**: The State Historic Preservation Office (SHPO) has provided a concurrence letter in accordance with Section 106 of the National Historic Preservation Act. The concurrence letter is included in Appendix E. Various indigenous tribes with an interest in the area were provided information about the project and asked to comment. No adverse comments have been received, and SHPO has concurred that “no historic properties affected” as a result of the project.

9. **Endangered Species**: District staff has performed a preliminary review of this application for the potential impact on threatened or endangered species pursuant to Section 7 of the Endangered Species Act as amended. The following threatened or endangered species are listed by the United States Fish and Wildlife Service (FWS) as occurring in Clinton County, Iowa: Northern long-eared bat (Threatened), Higgins Eye (pearl mussel) (Endangered), Monarch Butterfly (Candidate), Eastern Prairie Fringed Orchid (Threatened), Western Prairie Fringed Orchid (Threatened). Any comments it may have concerning Federally-listed threatened or endangered species or their critical habitat will be considered in the final assessment of the proposed project.

10. **Dredge/Fill Material Guidelines**: The evaluation of the impact of the proposed activity on the public interest will also include application of the guidelines promulgated by the Administrator of the United States Environmental Protection Agency under authority of Section 404(b) of the Clean Water Act (40 CFR Part 230).
11. **Public Interest Review.** The decision whether to issue the Corps permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food production and, in general, the needs and welfare of the people.

12. **Who Should Reply.** The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition, or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity. These statements should be submitted on or before the expiration date specified at the top of page 1. These statements should bear upon the adequacy of plans and suitability of locations and should, if appropriate, suggest any changes considered desirable.

13. **Public Hearing Requests.** Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing. A request may be denied if substantive reasons for holding a hearing are not provided.

14. **Reply to the Corps of Engineers.** Comments concerning the Corps permit should be addressed to the District Engineer, U. S. Army Corps of Engineers, Rock Island District, ATTN: OD-PP (Nelson), Clock Tower Building - Post Office Box 2004, Rock Island, Illinois 61204-2004. Mr. Jeff Nelson (309/794-5559) may be contacted for additional information or emailed at jeffrey.e.nelson@usace.army.mil.

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**Signatures**

*Matthew A. Zehr*

Chief, Western Branch
Regulatory Division

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**Drawings No. CEMVR-RD-2021-1076**

- Exhibit A, Vicinity Map
- Exhibit B, Location Map
- Exhibit C, RWRF ADI-BVF Site Plan
- Exhibit D - Outfall Plans v5-C1 OUTFALL PLAN & PROFILE
- Exhibit E – Impacts

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**REQUEST TO POSTMASTERS:** Please post this notice conspicuously and continuously until the expiration date specified at the top of page 1.

**NOTICE TO EDITORS:** This notice is provided as background information for your use in formatting news stories. This notice is not a contract for classified display advertising.
Figure 5 – Wetland Impacts – RWRF

Total Permanent Impacts = 3.38 Acres
Figure 6 – Wetland Impacts – Force Mains
April 21, 2022

District Engineer
US Army Corps of Engineers, Rock Island District
Attn: Jeffrey Nelson
Clock Tower Building
P. O. Box 2004 Rock Island IL 61204-2004

CLINTON, IOWA
REGIONAL WASTEWATER RECLAMATION FACILITY
ADM EXPANSION AND CONVEYANCE PROJECT
SECTION 404 SUBMITTAL PACKAGE

Enclosed please find the Section 404 submittal package documents for the City of Clinton, Iowa, for the Regional Wastewater Reclamation Facility (RWRF) ADM Expansion and Conveyance Project. The project includes temporary and permanent impacts to wetlands as outlined below.

The project includes diversion of wastewater from the Archer Daniels Midland wastewater treatment plant to the City of Clinton’s Regional Wastewater Reclamation Facility for treatment. Archer Daniels Midland Company (ADM) discharges treated wastewater to the Mississippi River and operates under NPDES Permit No. 2326101. The Clinton Regional Wastewater Reclamation Facility discharges to Beaver Slough and operates under NPDES Permit No. 2326001. The City of Clinton has come to an agreement with ADM for the City to accept the proposed waste stream from ADM. This requires new conveyance piping and expansion of the existing RWRF to accommodate the additional flow and load capacity and meet future discharge limits.

The Project is funded by the Clean Water State Revolving Fund (CWSRF) Program, assigned SRF project #CS1921021-01. All the necessary environmental and cultural clearances are being attained as required by the CWSRF Program. This includes compliance with Iowa DNR Flood Plain/Sovereign Lands, USFWS and SHPO concurrence, etc. The Joint Application was submitted in Fall 2021 to Iowa DNR and USACE. The Project also includes modifications to the USACE levee at the old municipal sewage treatment plant, which require Section 408 permission.
If you have any questions, please contact us at 1-800-241-8000.

VEENSTRA & KIMM, INC.

David J. Haugen, P.E.
Project Purpose and Need

The Clinton Regional Wastewater Reclamation Facility (RWRF) is responsible for the collection, transport, and treatment of wastewater for the cities of Clinton, Camanche, and Low Moor. The RWRF discharges treated wastewater to Beaver Slough of the Mississippi River. The City’s RWRF cannot meet future limits for E.coli listed in its NPDES permit without modification. Archer Daniels Midland Company (ADM) owns and operates another wastewater treatment facility for industrial process wastewater. The ADM plant discharges treated wastewater to Beaver Slough, just upstream of the City’s discharge point. The ADM plant will not be able to adequately treat its wastewater in the future, due to its age and changes in its NPDES discharge requirements.

To meet new NPDES discharge limits at ADM’s current plant, ADM would need to make major facility upgrades requiring a large footprint. The ADM wastewater plant is landlocked between the railroad tracks, Beaver Slough, an industrial landfill, and a neighboring industry as shown in Figure 1. With no available land to expand to, it is not economically nor physically feasible to implement the treatment processes required to reach new discharge limits on-site.

Figure 1 – ADM Treatment Plant Aerial

For these reasons, the City of Clinton and ADM have come to an agreement for the City to accept the waste stream from ADM. The City of Clinton is currently in the process of designing improvements to increase the capacity of the RWRF to accommodate ADM’s waste stream and meet future E.coli limits.
Alternative Analysis

The proposed project is needed to meet NPDES discharge limits for the City of Clinton and ADM. To meet the needs of both parties, the City of Clinton and ADM have come to an agreement for the City to accept the waste stream from ADM. For the City to accommodate the additional waste stream from ADM while mitigating impacts to the environment, several alternatives were considered as discussed below.

ALTERNATIVE 1: NO ACTION

This alternative consists of the continued operation of the City of Clinton’s RWRF and ADM’s wastewater treatment facility as usual. The City’s RWRF cannot meet future limits for E.coli listed in its NPDES permit without modification. The ADM plant will not be able to adequately treat its wastewater in the future, due to its age and changes in its NPDES discharge requirements. The inability to meet NPDES discharge limits also results in environmental damage to the receiving water body. For these reasons, the alternative was not deemed practicable.

ALTERNATIVE 2: LAND APPLICATION

This alternative consists of diverting ADM’s waste stream for land application. To meet Iowa Wastewater Facilities Design Standard Chapter 21 design requirements for land application, the minimum storage required is 200 days. About 1,620 acres of land would be required to store this volume, neglecting any buffer area. There is not land of this area within 5 miles of the wastewater plant, so Alternative 2 was not considered a practicable option.

ALTERNATIVE 3: EXPANSION OF CLINTON RWRF WITH ADDITION OF LOW-RATE ANAEROBIC PRETREATMENT, CLASS A SLUDGE PRODUCTION, AND UV DISINFECTION

This alternative would consist of additions and modifications to the City’s existing RWRF. The RWRF must be expanded to ensure that the additional waste stream from ADM will not take up any of the City’s existing treatment capacity. The existing capacity accounts for slight anticipated population growth over the next 20 years. The City’s existing influent flow from the residential and commercial users would enter the facility as it currently does, through grit removal and screening in the Headworks Building. From there, the existing influent flow would be directed to a new Aeration Basin splitter box, where it blends with pretreated industrial waste from ADM.

For the new proposed waste stream from the local SIU ADM, new structures and processes would be added to the City’s existing RWRF. These processes would include a Low-Rate Anaerobic Lagoon system for pretreatment. From the Low-Rate Anaerobic Lagoons, the industrial waste stream would be blended with the municipal waste stream at a new Aeration Basin splitter box.

From there, the blended waste stream would flow through the plant much like it currently does. The wastewater would pass through the Aeration Basins (BNRs) and then through the Final Clarifiers.
New units would be added in parallel to accommodate the additional flow. Next, a new UV Disinfection system would be added to meet the new E.coli effluent limits. From there, flow would be split to the existing effluent pump station and a new effluent pump station, which would each discharge to the existing permitted outfall at Beaver Slough.

The sludge produced by both the City’s existing RWRF and the new proposed waste stream from the local SIU ADM would be handled in a new sludge handling facility. The sludge handling facility would be a conversion of the City’s existing Aerobic Digesters to sludge holding tanks, and a Biosolids Dryer would be installed to receive and process dewatered solids. The biosolids storage area would be large enough to provide over two years holding time with dewatered solids. This process would result in Class A Sludge Production.

The alternative also entails conveyance system upgrades to transport wastewater from ADM to the RWRF and from the RWRF to the existing permitted outfall at Beaver Slough. New pumping stations and a dedicated sewer main would need to be constructed from the ADM facility to the City’s RWRF. Another effluent pumping station at the RWRF would need to be added, with a new force main to the City’s permitted outfall.

Alternative No. 3 provides sufficient treatment to meet the effluent limits listed in the newly received NPDES permit and sufficient capacity to accept the new proposed waste stream. This alternative would require temporary and permanent impacts to aquatic resources as discussed in the Wetland Mitigation section. These impacts include:
- Permanent impacts to 3.38 acres of wetlands, including fractions of forested and emergent wetlands.
- Temporary impacts to forested/scrub/shrub and emergent wetlands along the conveyance system alignment.

Alternative No. 3 provides sufficient capacity and treatment to meet the effluent limits listed in the newly received NPDES permit. Evaluation of Alternative No. 3 indicated it has both the lowest capital cost and present worth cost, making it the most practicable and economically efficient alternative.

**ALTERNATIVE 4: EXPANSION OF CLINTON RWRF WITH ADDITION OF MEDIUM-RATE ANAEROBIC PRETREATMENT, EXPANSION OF AEROBIC DIGESTION, AND UV DISINFECTION**

This alternative would consist of additions and modifications to the City’s existing RWRF. The RWRF must be expanded to ensure that the additional waste stream from ADM will not take up any of the City’s existing treatment capacity. The existing capacity accounts for slight anticipated population growth over the next 20 years. The City’s existing influent flow from the residential and commercial users would enter the facility as it currently does, through grit removal and screening in the Headworks Building. From there, the existing influent flow would be directed to a new Aeration Basin splitter box, where it blends with pretreated industrial waste from ADM.

For the new proposed waste stream from the local SIU ADM, new structures and processes...
would be added to the City’s existing RWRF. These processes would include a Medium-Rate Anaerobic Lagoon system for pretreatment. From the Medium-Rate Anaerobic Lagoons, the industrial waste stream would be blended with the municipal waste stream at a new Aeration Basin splitter box.

From there, the blended waste stream would flow through the plant much like it currently does. The wastewater would pass through the Aeration Basins (BNRs) and then through the Final Clarifiers. New units would be added in parallel to accommodate the additional flow. Next, a new UV Disinfection system would be added to meet the new E. coli effluent limits. From there, flow would be split to the existing effluent pump station and a new effluent pump station, which would each discharge to the existing permitted outfall at Beaver Slough.

The sludge produced by both the City’s existing RWRF and the new proposed waste stream from the local SIU ADM would be handled in an expanded sludge handling facility. The sludge handling facility would include an expansion of the City’s existing Aerobic Digesters, additional thickening and dewatering equipment, and additional sludge storage space. This process would continue to produce Class B sludge.

The alternative also entails conveyance system upgrades to transport wastewater from ADM to the RWRF and from the RWRF to the existing permitted outfall at Beaver Slough. New pumping stations and a dedicated sewer main would need to be constructed from the ADM facility to the City’s RWRF. Another effluent pumping station at the RWRF would need to be added, with a new force main to the City’s permitted outfall.

Alternative No. 4 provides sufficient capacity to accept the new proposed waste stream. The Medium-Rate Anaerobic Lagoon system has a smaller footprint than the Low-Rate system, which would result in less of an impact to the wetlands surrounding the RWRF. However, the Medium-Rate Anaerobic Lagoon system was determined not to provide sufficiently consistent treatment to meet the effluent limits listed in the newly received NPDES permit due to reliability concerns. The alternative was also determined not to be economically efficient.

**PERMITTEE’S PREFERRED ALTERNATIVE**

The alternatives were evaluated based on practicability, economic efficiency, and environmental impact. Alternative No. 3, expansion of existing RWRF with the addition of low-rate anaerobic pretreatment, expansion of the aeration basins (BNRs) and final clarifiers, addition of UV disinfection, and conversion of the existing aerobic digestion process to Class A sludge production, is the preferred reasonable treatment alternative.
IOWA DEPARTMENT OF NATURAL RESOURCES
SECTION 401 WATER QUALITY CERTIFICATION

Certification issued to:  
City of Clinton  
4025 South 30th Street  
Clinton, IA 52732

Project certified: U.S. Army Corps of Engineers, No. CEMVR-RD-2021-1076  
State 401 Water Quality Certification, No. 22-N-045-09-01-S

Project Description: Wastewater will be diverted from the Archer Daniels Midland Company wastewater treatment plant to the City of Clinton’s Regional Wastewater Reclamation Facility for treatment.

Project Location: 4025 South 30th Street, Clinton Iowa. S22, T81N, R6E, Clinton County, Iowa. UTM NAD-83 Zone 15. Northing 4632268.13, Easting 729052.20. Latitude 41.8057, Longitude -90.2556.

The Iowa Department of Natural Resources (DNR) has issued this State 401 Water Quality Certification (Certification) pursuant to Section 401 (40 C.F.R. §121). The U.S. Army Corps of Engineers requires state Certification before a Section 404 permit can be issued.

Subject to the attached conditions, incorporated by reference herein, the DNR has determined that a discharge from the proposed project will comply with water quality requirements of the state of Iowa (567 IAC 61).

Prepared By: __________________________ Date Executed: __________, 2022
Christine Schwake, Christine.schwake@dnr.iowa.gov; Iowa DNR, 502 East 9th Street, Des Moines, IA 50319-0034  
(515) 725-8399
(1) During construction and upon completion of the project, actions must be taken to prevent pollution affecting public health, fish, shellfish, wildlife, and recreation due to turbidity, pH, nutrients, suspended solids, floating debris, visible oil and grease, or other pollutants entering a water of the state. This condition will ensure permittees comply with Iowa’s narrative water quality standards found at 567 IAC 61.3(2);

(2) Equipment used in waters of the state shall be cleaned of all hazardous materials, pesticides, fuels, lubricants, oils, hydraulic fluids, or other construction-related, potentially hazardous substances before arriving on site. Wash water shall not be discharged into a water of the state. This condition will ensure permittees comply with Iowa’s narrative water quality standards found at 567 IAC 61.3(2);

(3) All cleared vegetative material shall be properly managed in such a manner that it cannot enter a water of the state and cause a violation of water quality standards. This condition will ensure permittees comply with Iowa’s narrative water quality standards found at 567 IAC 61.3(2);

(4) All construction debris shall be properly managed in such a manner that it cannot enter a water of the state. This condition will ensure permittees comply with Iowa’s narrative water quality standards found at 567 IAC 61.3(2);

(5) Erosion shall be managed so that sediment is not discharged to a water of the state in a manner that causes a violation of water quality standards. This condition will ensure permittees comply with Iowa’s narrative water quality standards found at 567 IAC 61.3(2);

(6) Riprap and temporary crossings shall consist of clean material free of coatings of potentially hazardous substances. No asphalt or petroleum-based material shall be used as or included in riprap material placed in any water of the state or within the high-water table. This condition will ensure permittees comply with Iowa’s narrative water quality standards found at 567 IAC 61.3(2); and

(7) Stockpiled dredged materials on the shore shall be managed so that sediment is not discharged to a water of the state in a manner that causes a violation of water quality standards. This condition will ensure permittees comply with Iowa’s narrative water quality standards found at 567 IAC 61.3(2).