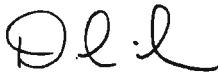


**Environmental Assessment
For The
Lake Forest Clean Water District's
Proposed Wastewater
Treatment System**

"I hereby certify that this assessment was prepared by me at the request of The Lake Forest Clean Water District in accordance to the guidelines and procedures stipulated in RD Instruction 1970-C".



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April 8, 2020
Date



Table of Contents

Executive Summary.	3
1.0 Purpose and Need for Project .	3
1.1 Project Description (Proposed Action) .	3
1.2 Purpose and Need of Project .	4
2.0 Alternatives to the Proposed Action .	4
3.0 Affected Environment/Environmental Consequences .	5
3.1 Land Use/ Important Farmland/ Formally Classified Land .	5
3.2 Floodplains .	6
3.3 Wetlands .	7
3.4 Cultural Resources .	8
3.5 Biological Resources .	8
3.6 Water Quality Issues .	10
3.7 Socio-economic/Environmental Justice Issues .	10
3.8 Miscellaneous Issues .	11
4.0 Summary of Mitigation .	12
5.0 Correspondence and Coordination .	13
6.0 Exhibits .	14
6.1 Preliminary Engineering Report from Waters Engineering	
6.2 Project Summary Sent to Reviewing Agencies	
6.3 Project Maps	
6.4 Photos of the proposed Project Area	
6.5 Floodplain Map From the FEMA Flood Map Service Center	
6.6 National Wetlands Inventory Maps via https://www.fws.gov/wetlands/Data/Mapper	
6.7 Letter to the Historical Preservation Office with Section 106 Review form	
6.8 Correspondence From SHPO and Section 106 Review	
6.9 Tribal Directory Assessment Information	
6.10 Email to the 8 tribes with an interest in Ste. Genevieve County	
6.11 Letter from the Miami Tribe of Oklahoma	
6.12 Email to the U.S. Fish and Wildlife Service	
6.13 Email from the U.S. Fish and Wildlife Service	
6.14 Correspondence to the Missouri Department of Conservation	
6.15 Letter to the U.S. Corps of Engineers	
6.16 Email correspondence to and from the U.S. Corps of Engineers	
6.17 Civil Rights Impact Analysis (Form RECD 2006-38)	
6.18 Email to the Federal Assistance Clearing House	
6.19 Letter from the Federal Assistance Clearing House	

Executive Summary

The Lake Forest Clean Water District is proposing a project to improve the effectiveness of their wastewater collection and treatment system. The proposed project will be completed within the Lake Forest Estates subdivision and the existing wastewater treatment facility (lagoon). Lake Forest Estates is located in Ste. Genevieve County, Missouri.

According to the 2010 census Lake Forest Estate's population was 773. The Lake Forest Clean Water District was formed for the purpose of planning, financing, and operating the water and wastewater systems. The proposed project will improve the present wastewater collection and treatment system and meet current and future DNR regulations.

The Lake Forest Clean Water District contracted the services of Waters Engineering, Inc. to design a wastewater system that will effectively treat the wastewater for the residences of Lake Forest Estates. Portions of the original Preliminary Engineering Assessment (PER) pertaining to environmental issues are included in this environmental assessment (Exhibit 6.1). Details concerning the preliminary engineering assessment can be directed to Richard Cochran, JR., P.E. at 573-471-5680.

The scope of this environmental assessment supplements the original preliminary engineering assessment prepared by Waters Engineering, Inc. by assessing environmental affects that the project may have upon the locality, and identify any concerns that need to be addressed or mitigated during project development and design. The District is seeking USDA Rural Development or Missouri Department of Natural Resources funding for the financing of the proposed project.

1.0 Purpose and Need for Project

1.1 Project Description (Proposed Action)

The Lake Forest Clean Water District proposes the following infrastructure improvements to their wastewater Treatment system:

- Repair and replace gravity mains as needed.
- Replace existing lines that are in the shallow areas of the lake water with ductile iron pipe. The lakes will be drained and the pipes will be buried. The lakes will then be refilled to current levels.
- Convert the existing aerated lagoon to a Sequencing Batch Reactor.

The following exhibits are included in section six to explain the proposed project in more detail:

- Preliminary Engineering Assessment from Waters Engineering, Inc. (Exhibit 6.1)
- Proposed Wastewater Project Summary (Exhibit 6.2)
- Maps of the general area, collection lines, and lagoon modifications (Exhibit 6.3)
- Photos of the proposed project area (Exhibit 6.4)

1.2 Purpose and Need of Project

The wastewater collection system for the Lake Forest Clean Water District has a high amount of inflow and infiltration (I&I) and the treatment system is in need of renovation. The treatment facility cannot consistently meet current DNR requirements for ammonia and disinfection and is currently out of compliance. In order to meet legal requirements and keep up with the demands of the residents in Lake Forest Estates the District needs to make the renovations listed in section 1.1.

2.0 Alternatives to the Proposed Action

1. **No Actions:** This option was not considered. The wastewater treatment plant is unable to properly treat wastewater that will meet DNR requirements.
2. **Line the gravity mains with CIPP:** This proposed action is described on page 9 of the Preliminary Engineering Assessment (Exhibit 6.1)
3. **Replace portions of the gravity mains with a pressure system:** This proposed action is described on pages 9-11 of the Preliminary Engineering Assessment (Exhibit 6.1)
4. **Replace portions of the gravity mains with new gravity piping:** This proposed action is described on pages 11-14 of the Preliminary Engineering Assessment (Exhibit 6.1)
5. **Pump to a nearby community:** This proposed action is described on page 14 of the Preliminary Engineering Assessment (Exhibit 6.1)
6. **Convert the existing treatment plant to land application:** This proposed action is described on pages 14-16 of the Preliminary Engineering Assessment (Exhibit 6.1).
7. **Move the discharge or treatment plant to different receiving stream:** This proposed action is described on pages 16-17 of the Preliminary Engineering Assessment (Exhibit 6.1).

8. **Modification of the existing aerated lagoon:** This proposed action is described on page 17 of the Preliminary Engineering Assessment (Exhibit 6.1)
9. **Conversion to a lagoon with fixed film media:** This proposed action is described on pages 19-20 of the Preliminary Engineering Assessment (Exhibit 6.1).
10. **Conversion to an activated sludge system:** This proposed action is described on pages 17-21 of the Preliminary Engineering Assessment (Exhibit 6.1).
11. **Construction of a new reverse osmosis treatment plant:** This proposed action is described on pages 23-26 of the Preliminary Engineering Assessment (Exhibit 6.1).

The Lake Forest Clean Water District has chosen alternative #4 (replace portions of the gravity mains with new gravity piping to solve the I&I problem and alternative #10 (conversion to an activated sludge system).

3.0 Affected Environment/Environmental Consequences

3.1 Land Use/ Important Farmland/ Formally Classified Land

The Farmland Protection Policy Act (FPPA), the USDA regulation implementing the FPPA (7 CFR Part 658), and USDA Departmental Regulation No. 9500-3, "Land Use Policy", provide protection for important farmland and prime rangeland and forestland.

3.1.1. Affected Environment: The affected environment will be contained to the area within the Lake Forest Clean Water District boundaries of Lake Forest Estates (Exhibit 6.3).

No formally classified lands will be affected. Formally classified lands include:

- National parks and monuments
- National natural landmarks
- National battlefield park sites
- National historic sites and parks
- Wilderness areas
- Wild and scenic or recreational rivers
- Wildlife refuges
- National seashores, lake shores, and trails
- State Parks
- Bureau of Land Management administered lands
- National forests and grasslands
- Native American owned lands

None of the above lands are included in the proposed project area.

3.1.2 Environmental Consequences:

Land Use: The land that will be used for the proposed project will not change. No additional land will be required for the proposed project. All work will be done within the existing man-made lakes and the existing wastewater treatment plant (lagoon).

Important Farmland: The USDA Natural Resource Conservation Service has not reviewed the proposed action since no new land will be used for the proposed project. The proposed project is within the existing man-made lakes, the existing wastewater treatment plant (lagoon), and will not convert any local farmland.

Prime forestlands will not be affected by the scope of this project.

3.1.3 Mitigation: No mitigation is required to minimize impacts to farmland in the proposed project area.

3.2 Floodplains

Continued encroachments on floodplains decrease the natural flood-control of these land areas, create the need for expensive manmade flood-control measures and disaster-relief activities, and endangers both lives and property. In compliance with Executive Order 11988, "Floodplain Management", and USDA Departmental Regulation 9500-3, "Land Use Policy", it is USDA's policy to avoid to the extent possible:

1. The long and short-term adverse impacts associated with the occupancy and modification of floodplains and
2. Direct or indirect support of floodplain development wherever there is a practicable alternative.

3.2.1 Affected Environment: The affected environment will be contained to the area within the Lake Forest Clean Water District boundaries of Lake Forest Estates (Exhibit 6.3).

3.2.2 Environmental Consequences: All project work will be done below the water surface of the existing man-made lakes and within the existing wastewater lagoon. A FEMA flood map (Exhibit 6.5) displays the floodplain along Big Bottom Creek.

The Lake Forest Clean Water District and the existing wastewater treatment was built around the Big Bottom Creek. Three dams were built and man-made lakes were the result. These dams and lakes absorb the flood waters. There has not been any flooding in the subdivision since it was built.

All work on the collection lines will be done when the lakes are partially drained and will be covered when the lakes are allowed to reach normal levels. The wastewater lagoon is protected by the dam on Lake Anne. Therefore, there are no long or short-term adverse impacts associated with the occupancy and modification of floodplains and no direct or indirect support of floodplain development.

3.2.3 Mitigation: No mitigation is required to minimize impacts to floodplains in the proposed project area.

3.3 Wetlands

Executive Order 11990, "Protection of Wetlands" states that it is Federal policy to avoid to the extent possible the long and short-term adverse impacts associated with the destruction or modifications of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. Each agency, therefore, to the extent permitted by law, shall avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds that:

1. There is no practicable alternative to such construction, and
2. The proposed project includes all practicable measures to minimize harm to wetlands that may result from such use. In making this finding the head of the agency may take into account economic, environmental, and other pertinent factors.

3.3.1 Affected Environment: The affected environment will be contained to the area within the Lake Forest Clean Water District boundaries of Lake Forest Estates (Exhibit 6.3).

3.3.2 Environmental Consequences: The entire project area is in a highland area. The gravity lines will be replaced under the normal water level of the three man-made lakes and the work done at the existing wastewater lagoon will be done inside of the fenced lagoon area.

An FWS Wetlands Inventory Map of the wetlands around Lake Forest Estates shows no wetlands near the proposed project area (Exhibit 6.6).

Therefore, it is determined that the project will not cause any long or short-term adverse impacts associated with the destruction or modifications of wetlands.

3.3.3 Mitigation: No mitigation is required to minimize impacts to wetlands in the proposed project area.

3.4 Cultural Resources

The National Historic Preservation Act (NHPA) of 1966, as amended (16 U.S.C. § 470 et seq.) and the Advisory Council on Historic Preservation's (ACHP) implementing regulations, 36 CFR Part 800 (Section 106 regulations), requires Federal agencies to take into account the effect their actions may have on historic properties that are within the proposed project's area of potential effect. This evaluation must take place prior to the carrying out of such actions. The area of potential effect is the geographic area or areas within which a proposed project may cause changes in the character or use of historic properties. Historic property means any prehistoric or historic District, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places. This term includes, for the purposes of the Section 106 regulations, artifacts, records, and remains that are related to and located within such properties. The term "eligible for inclusion in the National Register" includes both properties formally determined as such by the Secretary of the Interior and all other properties that meet National Register of Historic Properties listing criteria.

3.4.1 Affected Environment: The affected environment will be contained to the area within the Lake Forest Clean Water District boundaries of Lake Forest Estates (Exhibit 6.3).

3.4.2 Environmental Consequences: The Missouri Department of Natural Resource's Historic Preservation Office was notified of the proposed project on March 5, 2020 and asked to review the proposed project for cultural resources in the area (Exhibit 6.7). SHPO responded with a Cultural Resource Assessment Section 106 Review dated March 16, 2020 (Exhibit 6.8). The review stated "Adequate documentation has been provided. There will be no historic properties affected by the current project".

A search for American Indian tribes with an interest in Ste. Genevieve County was conducted on March 6, 2020 (Exhibit 6.9). Eight tribes were identified and an email was sent to each of the Indian tribes contact person (Exhibit 6.10). Only one tribe responded to the email. The Miami tribe wrote a letter stating "the Miami tribe offers no objection to the above-referenced project at this time". If any cultural remains are found during the project construction the Miami tribe requested immediate consultation (Exhibit 6.11).

3.4.3 Mitigation: No mitigation is required to minimize impacts to historical or cultural resources in the proposed project area.

3.5 Biological Resources

Threatened and Endangered Species. There are many plant and animal species that are threatened with extinction or exist in greatly reduced numbers partly as a result of human activities. The Endangered Species Act (ESA) of 1973 establishes a national program for the conservation and protection of threatened and endangered

species of plants and animals and the preservation of habitats upon which they depend. Under Section 7 of the ESA, Federal agencies are required to consult with USFWS and/or the National Marine Fisheries Service (NMFS) for all threatened and endangered species and species that inhabit coastal areas or are anadromous (fish born in fresh water that spend most of their life at sea and return to fresh wastewater to spawn).

3.5.1 Affected Environment: The affected environment will be contained to the area within the Lake Forest Clean Water District boundaries of Lake Forest Estates (Exhibit 6.3).

3.5.2 Environmental Consequences:

Threatened and endangered species: The U.S. Fish and Wildlife Service was contacted via email on March 6, 2020 and a follow-up email was sent on March 30, 2020 (Exhibit 6.12).

In an email dated April 6, 2020 the Fish and Wildlife Service concluded that “The U.S. Fish and Wildlife Service (Service) has reviewed the information provided in your March 6, 2020 letter regarding the proposed Wastewater Treatment System Improvements in Lake Forest Estates, Ste. Genevieve County, Missouri. The Service offers the following comments pursuant to the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1544).”

“Our data and your photos indicate that federally listed species, proposed species, candidate species, and designated and proposed critical habitat are not likely to be impacted by the proposed project action. With respect to wetlands and other important fish and wildlife habitat, it appears that the proposed action will not significantly impact these resources. If project plans change or portions of the proposed project were not evaluated, it is our recommendation that the changes be submitted for our review” (Exhibit 6.13).

State of Missouri Fish and Wildlife Resource Concerns: The Missouri Department of Conservation was contacted on March 6, 2020 (Exhibit 6.14). As of April 8, 2020 the Department has not responded or sent a Natural Heritage Review Report.

The proposed project is not likely to have an adverse impact or directly affect the federally protected habitats or state protected habitats of endangered animal or plant species.

3.5.3 Mitigation: No mitigation is required to minimize impacts to biological resources in the proposed project area.

3.6 Water Quality Issues

3.6.1 Affected Environment: The affected environment will be contained to the area within the Lake Forest Clean Water District boundaries of Lake Forest Estates (Exhibit 6.3).

3.6.2 Environmental Consequences:

A letter was sent to the U.S. Army Corps of Engineers on March 13, 2020 requesting clarification concerning a need for a 404 permit (Exhibit 6.15).

Jennifer Sikes of the U.S. Army Corps of Engineers replied with some questions and Dennis Sidors of Environmental Data Services responded to those questions. Jennifer Sikes then responded that a NW3 permit (sometimes called a non-reporting general permit) would cover this as a maintenance activity (Exhibit 6.16). The NW3 permit may be applied for when detailed plans and a schedule is created for the replacement of the collection pipes. If a 404 permit is desired for the project this environmental assessment will act as the NEPA document required by the Corps of Engineers for that 404 permit.

Since the collection pipes will be replaced while the lakes are partially drained and then refilled, and the treatment plant will produce a cleaner effluent, the proposed project is not likely to have an adverse impact or negatively affect the water quality of the area.

3.6.3 Mitigation: No mitigation is required to minimize impacts to water quality issues.

3.7 Socio-economic/Environmental Justice Issues

Proposed projects funded by or in part by RD/RUS have a potential to affect the socio-economic conditions of the areas being served. Applicants should be aware of potential effects to the socio-economic makeup of the area proposed to be served and be prepared to discuss these effects. Effects could be beneficial or adverse. In addition, applicants need to determine if their proposed project has or may have a disproportionately high and adverse human health or environmental effects on minority and low-income populations.

Executive order 12989 "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations", dated February 11, 1994, and USDA DR 5600-2 "Environmental Justice", dated December 15, 1997, requires the consideration of environmental justice issues into NEPA environmental reviews.

3.7.1 Affected Environment - The affected environment will be contained to the area within the Lake Forest Clean Water District boundaries of Lake Forest Estates (Exhibit 6.3).

3.7.2 Environmental Consequences: A conforming wastewater system in the project area will promote a healthier living environment for both the residents of the area. A healthy wastewater system will enable the area to prosper and meet current DNR requirements under the clean water act.

Environmental Justice Issues: The existing wastewater structures will remain the same. The wastewater treatment plant is isolated with no residences nearby. Repairs to the collection system should be accomplished within a short time period and not be a burden to anyone for long periods.

The proposed improvements will not affect any minority races. In fact the improvements will benefit all residences of Lake Forest Estates regardless of race. Therefore this will not have a significant negative effect on any residences in the area.

A Civil Rights Impact Analysis, Form 2006-38 (Exhibit 6.17) has been included in this assessment and will be completed by USDA Rural Development staff. No adverse civil rights impacts from this proposed project are anticipated.

Therefore, the proposed project is not likely to have an adverse impact on socio-economic issues or negatively affect environmental justice issues.

3.7.3 Mitigation: No mitigation measures are required for socio-economic or environmental justice issues in the project area.

3.8 Miscellaneous Issues

3.8.1 Affected Environment: The affected environment will be contained to the area within the Lake Forest Clean Water District boundaries of Lake Forest Estates (Exhibit 6.3).

3.8.2 Environmental Consequences:

Air Quality: There are no specific air quality concerns related to the Lake Forest Estates project.

Transportation: There are no anticipated environmental impacts to the transportation system associated with this proposed project.

Noise: The major source of noise will be during construction of the project. Construction noise will be temporary and no long-term adverse impacts will occur. No adverse impacts are expected as a result of the proposed action.

Solid Waste Management: Solid waste resulting from the project is expected to be typical rubbish waste from normal construction debris, and should be

disposed of in the nearest landfill or transfer station. No toxic, hazardous, or radioactive substances will be utilized or produced as a result of this project.

Hazardous or toxic waste: No hazardous or toxic waste sites are known to be within the project area. The U.S.EPA does not list any superfund sites in the project area.

Energy: The primary source of energy in the project area is electricity and natural gas. The proposed changes will consume slightly less energy than the current activities due to less I&I in the system.

Permitting: The Federal Assistance Clearinghouse was contacted on March 6, 2020 (Exhibit 6.18). They have notified various government agencies of the proposed project. In a letter dated March 24, 2020 the Clearinghouse stated that “none of the agencies involved in the review had comments or recommendations to offer at this time” (Exhibit 6.19).

State and Local agencies may require certain permits for construction and usage of the wastewater and storm water facilities. Additional State or Local permits may be required. During project design, the project design consultant must identify what specific permits will be required.

3.8.3 Mitigation: No mitigation measures are required for any miscellaneous environmental issues in the project area.

4.0 Summary of Mitigation

No mitigation measures are required for the construction of the proposed project.

5.0 Correspondences and Coordination

Environmental Assessment Correspondence Log for the Lake Forest Clean Water District's Proposed Wastewater Collection and Treatment Facility Improvements

Agency	PHONE	Date Sent	Date Received
HISTORICAL, ARCHAEOLOGICAL SITES			
State Historical Preservation Office Division of Parks and Historical Preservation P.O. Box 176 Jefferson District, MO 65102-0176			
	573-751-7858	3/5/2020	3/19/2020
Emails sent to tribes with interests in Ste. Genevieve County			
Apache Tribe of Oklahoma		3/6/2020	No Response
Delaware Nation, Oklahoma		3/6/2020	No Response
Delaware Tribe of Indians		3/6/2020	No Response
Miami Tribe of Oklahoma		3/6/2020	4/6/2020
Osage Nation		3/6/2020	No Response
Peoria Tribe of Indians of Oklahoma		3/6/2020	No Response
Quapaw Tribe of Indians		3/6/2020	No Response
Seneca-Cayuga Nation		3/6/2020	No Response
CRITICAL HABITAT AND ENDANGERED SPECIES			
U.S. Fish and Wildlife Service 101 Park DeVille Drive #A Columbia, MO 65201			
	573-876-1911	3/6/2020	4/6/2020
Policy Coordination Section Department of Conservation P.O. Box 180 Jefferson District, MO 65102-0180			
	573-751-4115	3/6/2020	No Response
CLEARING HOUSE			
Federal Assistance Clearinghouse Office of Administration, Truman Building			
	573-751-1851	3/6/2020	3/27/2020

Supporting Documents and Exhibits

- 6.1** Preliminary Engineering Report from Waters Engineering dated February 7, 2020
- 6.2** Project Summary Sent to Reviewing Agencies
- 6.3** Project Maps
- 6.4** Photos of the proposed Project Area
- 6.5** Floodplain Map From the FEMA Flood Map Service Center
- 6.6** National Wetlands Inventory Maps via <https://www.fws.gov/wetlands/Data/Mapper>
- 6.7** Correspondence to the Historical Preservation Office with Section 106 Review form
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- 6.15** Letter to the U.S. Corps of Engineers
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