

IEPA PROJECT PLAN (AMENDED)

Water System Improvements
PWS Facility #IL 1034600

Prepared for:

VILLAGE OF LEE

DeKALB & LEE COUNTIES

PO Box 65
Lee, Illinois 60530

IEPA Loan Project No. L17:

May 2019

Revised July 2019

Amended September 2023

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& ASSOCIATES LLC**
CONSULTING ENGINEERS

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LIST OF ABBREVIATIONS

AF	Annualization Factor
CPH	Cost per Household
CPI	Consumer Price Index
DCEO	Department of Commerce & Economic Opportunity
EPA	Environmental Protection Agency
FWS	Fish and Wildlife Service
GIS	Geographic Information System
GPD	Gallons Per Day
GPM	Gallons Per Minute
HP	Horsepower
IEPA	Illinois Environmental Protection Agency
ISWS	Illinois State Water Survey
IR	Interest Rate
MCL	Maximum Contaminant Level
MG	Million Gallons
MGD	Million Gallons per Day
MHI	Median Household Income
NOAA	National Oceanic and Atmospheric Administration
NMFS	National Marine Fisheries Service
NPDES	National Pollution Discharge Elimination System
TIF	Tax Increment Financing
TDH	Total Dynamic Head
TMDL	Total Maximum Daily Load
TSS	Total Suspended Solids
WQS	Water Quality Standards
WTP	Water Treatment Plant

VILLAGE OF LEE

WATER SYSTEM IMPROVEMENTS

2023 PROJECT PLAN

1. COMMUNITY BACKGROUND INFORMATION

1.1 Village Overview

The Village of Lee is located in DeKalb and Lee Counties in Illinois, approximately 15 miles southeast of Rochelle and 17 miles southwest of DeKalb, Illinois. The Village is governed by a Board of Trustees and has been in existence for over 150 years.

1.2 Population Demographic and Economic Projections

The Village of Lee is a small rural community with a population of 313 as of 2020. Lee is primarily a bedroom community with very limited commercial services. School children are bussed to the Indian Creek Schools in Shabbona and Waterman. The Village of Lee straddles the DeKalb County and Lee County Line.

The Village's population is expected to be increasing at a steady rate of 0.5% for the next 20 years. The projected population of the Village is 346 by the end of 2040.

2. EXISTING WATER SUPPLY & TREATMENT FACILITIES

2.1 Existing Usage

Table 1 (below) shows the average and maximum daily usage per two months for 2022 and 2023.

TABLE 1
Bi-Monthly Water Demand Volumes

Date	Year	Water Demand (Gallons)
11/1 - 1/1	2021-2022	828,200
1/1 - 3/1	2022	705,700
3/1 - 5/1	2022	830,000
5/1 - 7/1	2022	778,933
7/1 - 9/1	2022	830,000
9/1 - 11/1	2022	776,900
11/1 - 1/1	2022-2023	877,100
1/1 - 3/1	2023	896,100
3/1 - 5/1	2023	730,600
5/1 - 7/1	2023	916,900

The current water demand information shows that the average gallons of water used per day is approximately 13,617. Hence the average water demand per person (313 users) is around 45 gallons per day.

Based on a projected population of 346 and a water usage of 45 gallons per day per person, the future water demand is projected to be 15,570 gallons per day. Using a peaking factor of 2.7, the maximum demand will be 42,039 gpd (29 gpm). Existing Well No. 2 (140 gpm) has adequate capacity to meet the Village's current and future demands.

2.2 Water Supply

The water distribution system currently serves 145 customers. A map of the current distribution system is provided as Exhibit 1.

On April 13, 2022, the IEPA conducted a field evaluation of Lee's community water supply and recommended that undersized water mains be replaced. A copy of the letter and recommendations from the IEPA are provided in Exhibit 2. In order to remain in compliance, the Village is submitting this Project Plan.

The Village of Lee has only one reliable water source as Well No. 1 is 119 years old and virtually unrepairable. The Village's other well, Well No. 2, is the primary duty well and provides most of the water for the Village.

Also, there have been several deficiencies noted with the existing water system. Due to undersized mains and dead-end lines maintaining a minimum required pressure of 20 pounds per square inch (psi) throughout the system is not always possible.

2.3 Well Field

Water supply to the system is provided almost exclusively by Well No. 2 at the Village's water works facility. The Village's water sources consist of the following:

Well No. 1: The Village's original well (Well No. 1) was completed in 1904 to a depth of 335 feet. The well is finished in sand and gravel and is cased with a 6-inch pipe to a depth of 235 feet and 4.5-inch pipe from 235 feet to 335 feet. In 1947 the well was sounded and found to have a depth of 325 feet. The well produces 70 gallons per minute and is treated with chlorine and phosphate.

Well No. 2: Well No. 2 is located 60 feet southeast of Well No. 1 and is located in the same sand and gravel aquifer. Well No. 2 was drilled in 1964 to a depth of 338 feet. The well is cased with a 10-inch pipe to a depth of 323 feet followed by 15 feet of 10-inch No. 6 stainless steel shutter screen. Well No. 2 produces 140 gallons per minute and is treated with chlorine and phosphate.

In February of 2008 the Village had Well No. 2 inspected and repaired by Layne-Western. The pump and column pipe were pulled, inspected, and repaired or replaced as necessary and the well was televised. The well was found to have approximately 3 feet of accumulated fill in the bottom of the hole. The pump motor was replaced along with the column pipe and wiring.

Both wells have adequate natural fluoride, so fluoride treatment is not currently performed.

2.4 Water Storage Facilities

In the past, the Village operated two (2) hydropneumatic tanks to provide pressure to the distribution system. The original tank is a 13,000-gallon riveted tank located adjacent to Well No. 1 in the Village's water works facility. A newer, 21,500-gallon welded steel tank is located in a separate water works building located on Viking Vie between Kirke Gate and Nissen Stigen. The older tank was recently inspected and found to be unusable due to its deteriorating condition and is no longer in service. The new tank now serves as the sole source of pressure for the distribution system.

2.5 Distribution System

The Village's water distribution system consists of 2-inch, 4-inch, 6-inch and 8-inch mains, most of which were constructed between 1904 and 1964. Some of the 4-inch mains are old asbestos-cement pipes that are in poor condition. Recently, the Village replaced a 2-inch galvanized water line on Skole Gate between Hardanger Gate and Nissen Stigen with a new 6-inch main and built a new 8-inch main on Sor Gate between the BNSF Railroad tracks to provide system redundancy and better looping between those portions of the system on the east and west sides of the railroad.

In addition to mains, the distribution system includes related appurtenances including valves, service curb stops, flushing hydrants, and fire hydrants. Water meters have been installed on all service lines. As stated previously, a map of the existing distribution system is included in Exhibit 1.

3. JUSTIFICATION OF THE PROPOSED PROJECT CURRENT AND PROJECTED WATER SYSTEM PRODUCTION

3.1 Water Supply Improvements

With a single reliable water supply well, the Village's public water supply system is vulnerable to losing water service. The Village's only reliable well is Well No. 2. Well No. 2 has consistently met all water quality criteria. Well No. 2 was constructed to draw water from a sand and gravel aquifer located at a depth of 323 feet and has provided almost all of the Village's drinking water since its construction in 1965.

It is recommended that the Village construct a new well to be located on Village property across the street from the existing water works facility property to take advantage of the existing building. The new well will be designed to provide 140 to 150 gallons per minute and will be plumbed into the existing building for treatment before the water is discharged to the distribution system. A location map showing the locations of the proposed work to be performed as described in this Project Plan has been included at Exhibit 3.

After the new well is constructed, tested, and approved for service, Well No. 1 will be abandoned per the current Illinois Department of Public Health guidelines.

3.2 Water Storage Improvements

To provide more consistent and reliable water storage volume, the Village of Lee is proposing to construct a new, single pedestal, spheroid-type water tower having a capacity of 50,000-gallons. The construction of the elevated storage tank will eliminate the need for the two (2) existing hydropneumatic tanks and said tanks will be removed upon commissioning of the new water tower.

The tower will be located on property owned by the Village of Lee, across the street from the existing water treatment facility.

3.3 Distribution System Improvements

The proposed water distribution system improvements will eliminate the 2-inch mains and the 4-inch asbestos-cement mains. In addition, the original 6-inch water main crossing beneath the BNSF railroad, which was constructed 115 years ago, will be replaced with a new 8-inch main installed in a casing pipe under the BNSF railroad. There

will be an approximate total of 4,020 feet of new 8-inch main and 1,010 feet of new 6-inch main. The locations of the proposed distribution system improvements have been provided at Exhibit 3.

The new water mains will provide a looped connection between Erickson Gate and Hardanger Gate. The looping will not only improve pressure in the system but will also improve water quality by allowing circulation within the system and reducing stale water in the dead-end mains.

New 8-inch mains will be provided on East and West Hardanger Gate, South Erickson Gate, Viking Vie, East Kirke Gate, and under the BNSF railroad. New 6-inch mains will be provided on West Kirke Gate and Nissan Stigen.

4. CURRENT AND/OR FUTURE POTENTIAL FOR VIOLATIONS

The Village's current public water supply meets or exceeds all applicable laws and regulations. The Village would like to continue an effort to meet all applicable laws and regulations. Currently, there are pockets in the village experiencing low water pressure. This project aims to ensure the Village addresses these issues.

5. RECOMMENDED BASIS OF DESIGN

5.1 Water Supply Improvements

Current IEPA Standards require that a Public Water Supply served by groundwater wells must be served by multiple wells and that the combined delivery must equal or exceed the maximum average daily demand with the largest producing well out of service. Since Well No. 2 is the Village's only reliable source of water, a new water production well needs to be constructed to meet current IEPA standards.

As stated previously, Well No. 2 has a capacity of 140 gallons per minute, which is more than adequate to meet current and future maximum daily demands. The construction of a new well, Well No. 3, having a similar design capacity of 140 to 150 gallons per minute to Well No. 2 would allow the Village to meet current IEPA standards and allow for redundancy in the equipment (chemical feed pumps, electrical components, fittings, etc.) required to be maintained on-hand for system maintenance.

It is recommended that the Village construct a new well to be located on Village property across the street from the existing water works facility property to take advantage of the existing building. The new well will be designed to provide 140 to 150 gallons per minute and will be plumbed into the existing building for treatment before the water is discharged to the distribution system. A location map showing the locations of the proposed work to be performed as described in this Project Plan has been included at Exhibit 3.

5.2 Water Storage Improvements

The existing hydropneumatic tank system served by Well No. 2 provides sufficient capacity to meet current IEPA standards. However, the existence of this system prohibits the Village from providing sufficient firefighting capabilities and limits the Village's ability to promote future economic growth.

It is recommended that the Village of Lee construct a new, single pedestal, spheroid-type water tower having a capacity of 50,000-gallons. The 50,000-gallons size is the smallest available tank size of this style and type. The volume provided will meet the current IEPA standard requiring that the minimum storage capacity for systems not providing fire protection shall be equal to the average daily consumption. The proposed tanks volume will exceed this requirement in the existing and future conditions.

The tower will be located on property owned by the Village of Lee across the street from the existing water treatment facility.

5.3 Distribution System Improvements

As noted in the IEPA system review letter provided in Exhibit 2, the IEPA does not permit the use of water mains smaller than 4-inches in diameter. The Village's distribution system has numerous feet of 2-inch water mains and numerous feet of 4-inch asbestos cement water mains which are old and approaching the end of their useful life. These mains are insufficient to meet the Village's current and future water demands and it is recommended that these mains be replaced with new, 6-inch and 8-inch water mains.

The proposed water distribution system improvements will eliminate the 2-inch mains and the 4-inch asbestos-cement mains. In addition, the original 6-inch water main crossing beneath the BNSF railroad, which was constructed 115 years ago, will be replaced with a new 8-inch main installed in a casing pipe under the BNSF railroad. There will be an approximate total 4,020 feet of new 8-inch main and 1,010 feet of new 6-inch main. The locations of the proposed distribution system improvements have been provided at Exhibit 3.

The new water mains will provide a looped connection between Erickson Gate and Hardanger Gate. The looping will not only improve pressure in the system but will also improve water quality by allowing circulation within the system and reducing stale water in the dead-end mains.

New 8-inch mains will be provided on East and West Hardanger Gate, South Erickson Gate, Viking Vie, East Kirke Gate, and under the BNSF railroad. New 6-inch mains will be provided on West Kirke Gate and Nissan Stigen.

6. ABILITY TO MAINTAIN REGULATORY COMPLIANCE & ENVIRONMENTAL IMPACTS

6.1 General

The proposed water system improvement is expected to have the following minor and temporary impacts.

1. Human impact. The proposed construction will cause no major inconveniences to the residents and no relocation of dwellings or families will be required. The proposed facilities will be adequate for serving any additional population resulting from future community growth. The design of the new facilities will protect or improve the aesthetic value of the surrounding land and improve water pressure and water quality for the residents.

2. Natural resources. The project will be within the Village boundaries and contained in relatively small areas. Thus, there should be little effect on any of the community's natural resources. Construction is not expected to have adverse impacts on rare and endangered species, historic/cultural resources, agricultural land, air and water quality, recreational area, wetlands, flood plains, or other sensitive environmental areas.

3. Unavoidable Adverse Impacts. Construction is expected to cause only temporary and minor adverse effects due to noise and dust of normal construction activities. The proposed facilities have some reserve capacity for community growth. As growth occurs, proper design and construction of residential and commercial development will avoid long-term adverse effects on the environment.

The benefits of an improved water supply system are judged to outweigh the temporary adverse construction effects. With proper planning of growth, no long-term adverse environmental impacts are expected.

6.2 *Destruction of Sensitive Ecosystems including Wetlands and Habitats of Endangered Species During Construction*

No construction is planned in any potential wetland, and no endangered species are known to inhabit the project area. An IDNR EcoCAT printout is provided as Exhibit 4.

6.3 *Historical, Archeological, Geological, Cultural or Recreational Areas During Construction*

A copy of the State Historic Preservation Agency clearance letter is provided as Exhibit 5.

6.4 *Prime Agricultural Land*

The construction of the new improvements will take place within the existing Village Limits on Village-owned land or in the right-of-way. Prime agricultural land will not be disturbed for this project.

6.5 *Flood Plains and Floodways*

According to the Federal Emergency Management Agency (FEMA) flood map, none of the planned projects will be constructed within a flood plain or floodway, or along or adjacent to a jurisdictional river, lake, or stream without a mapped floodway or flood plain.

6.6 *Destruction of Sensitive Ecosystems including Wetlands and Habitats of Endangered Species During Construction*

No construction is planned in or adjacent to known wetlands and no endangered species are known to inhabit the project area. An IDNR EcoCAT report is provided as Exhibit 4.

6.7 *Damage and Pollution to Surface Water due to Erosion During Construction*

Construction will be within the municipal limits of the Village. Sediment and erosion control specifications will be followed during the construction. Application will be made or a construction-phase NPDES storm water permit where required. The total surface area disturbed by construction will likely be less than one acre at any given time during the construction. No special or highly erodible areas will be disturbed. The probability of any damage or pollution to surface water due to erosion during construction is low.

6.8 Drinking Water Supplies

The construction and operation of the proposed project is intended to improve the Village of Lee's drinking water supply and will not adversely impact other local drinking water supplies.

6.9 Displacement of Households, Businesses or Services

No households, businesses, or services will be displaced during or as a result of the construction.

6.10 Noise Pollution

There will be construction-associated noise. Construction equipment requires legal and operating mufflers. Backup alarms on mobile equipment are a required industry standard safety feature.

6.11 Direct Violation During Construction or Operation of any Statutes or Regulations

Temporary boil orders to small segments of the served population may be required during the construction due to the complexity of the construction to take place; however, no other violations of any statutes or regulations are anticipated during construction or operation.

6.12 Changes in Patterns of Land Use or Population

The construction will not alter land use or population demographics.

6.13 Environmental Effects Resulting from Changes in Land Use and Population Growth

Because there are no anticipated changes in land use or population growth, secondary environmental impacts are not anticipated.

7. PROJECT LOCATION MAP(S)

7.1 Location Map



Figure 1: Location Map

Exhibit 3, attached, provides a map of proposed improvements.

8. ESTIMATED COSTS

8.1 General

The following is a detailed construction cost estimate, including contingencies, planning, design, construction management, property acquisitions, legal fees, easements, etc.

8.2 Capital Cost

TABLE 2
Estimated Costs

Division	Project	Construction	Design Engineering	Construction Engineering	Division Total
A	Well No. 3 and Building Improvements	\$1,000,000	\$70,836.74	\$37,409.84	\$1,108,246.58
B	0.05 MG New Water Tower	\$850,000	\$117,265.18	\$31,798.36	\$999,063.54
C	Water Main Improvements	\$1,200,000	\$79,822.09	\$44,891.80	\$1,324,713.89
	Total	\$3,050,000	\$267,924.00	\$114,100.00	\$3,432,024.00

9. ESTIMATED LOAN TERMS

Total and complete funding for this project is anticipated to be by IEPA Loan with principal forgiveness at a reduced interest rate as determined by incentive qualifications. Without these incentives, the Village and users will be financially burdened beyond the ability for project completion, and therefore reduce the chances to meet future compliance requirements. The following breakdown describes 1) the estimated IEPA Loan assuming full project with current base loan requirements, and 2) the IEPA Loan Terms with the assumed incentives received.

IEPA Loan Assuming **NO** Qualifying Incentives

Estimated IEPA Loan Amount:	\$3,432,024.00
Current Base Interest Rate:	1.81%
Expected Loan Term Length:	20 Years
Approximate Annual Loan Repayment:	\$205,298/Year

IEPA Loan **WITH** Qualifying Incentives

Estimated Eligible Amount:	\$3,432,024.00
Estimated Principal Forgiveness %:	50%
Estimated IEPA Loan Amount:	\$1,716,012.00
Current Base Interest Rate:	1.81%
Expected Loan Term Length:	20 Years
Approximate Annual Loan Repayment:	\$102,648/Year

10. FINANCIAL ARRANGEMENTS

10.1 Current Financing

The Village of Lee collects water rate user fees and debt services fees to fund the operation of the existing public water supply system. In June of 2023, the Village implemented a new water rate structure intended to provide funds for the operation, maintenance, and replacement of system components and will provide the funding for debt service loan repayment of the previously described loan amount. All of the current 145 users are metered and billed based on the metered amount of water used.

The base rate for metered users is \$45 based on 2,000 gallons and \$26.50 per 1,000 gallons billed on a bi-monthly basis. In addition to the usage rate, the Village charges a debt service surcharge fee of \$18 on a bi-monthly basis. Based on previous usage, the new water rate will generate approximately \$142,500 in the first full year. An annual 2% increase is built into the fee structure to account for inflation and increasing costs related to labor and materials.

10.2 Future Replacement

The Village is aware that it must plan to be prepared for replacement of portions of the system due to wear and/or needed upgrades. Capital replacement and future maintenance of proposed capital improvements have been incorporated into the updated fee structure.

10.3 Proposed Financing

The Village intends to finance this project with the previously outlined user fees for the purpose of repaying the proposed loan. The rate structure will be reviewed annually and adjusted as needed to ensure that the loan can be repaid, and all O & M costs are satisfied.

The Village is committed to making improvements to their water system that will improve the reliability and quality of drinking water for the current residents. They look forward to working with the IEPA to complete these projects.

11. IMPLEMENTATION PLAN

11.1 Schedule

An outline of the project implementation schedule with associated estimated date of completion for the various project phases is provided in the following Table 3.

TABLE 3
Project Implementation Schedule

<u>Task</u>	<u>Estimated Date of Completion</u>	
Well #3		
Complete plans and specifications & submit to IEPA	October	2022
IEPA Construction Permit issued	February	2023
Advertise for bids	November	2023
Begin construction	March	2024
Complete construction	June	2025
Water Tower		
Complete plans and specifications & submit to IEPA	September	2023
IEPA Construction Permit issued	October	2023
Advertise for bids	November	2023
Begin Construction	March	2024
Complete Construction	June	2025
Water Main Improvements		
Complete plans and specifications & submit to IEPA	November	2023
IEPA Construction Permit issued	February	2024
Advertise for bids	July	2024
Begin construction	August	2024
Complete construction	June	2025

12. Inter-governmental and/or Service Agreements

No inter-governmental or service agreements are anticipated for the project.

13. NAME AND ADDRESS OF LOCAL NEWSPAPER(S)

**Dixon Telegraph
113 South Peoria Ave.,
Dixon, IL 61021**

**DeKalb Chronicle
121 W Lincoln Hwy,
DeKalb, IL 60115**

Exhibit 1: Current Distribution System Map

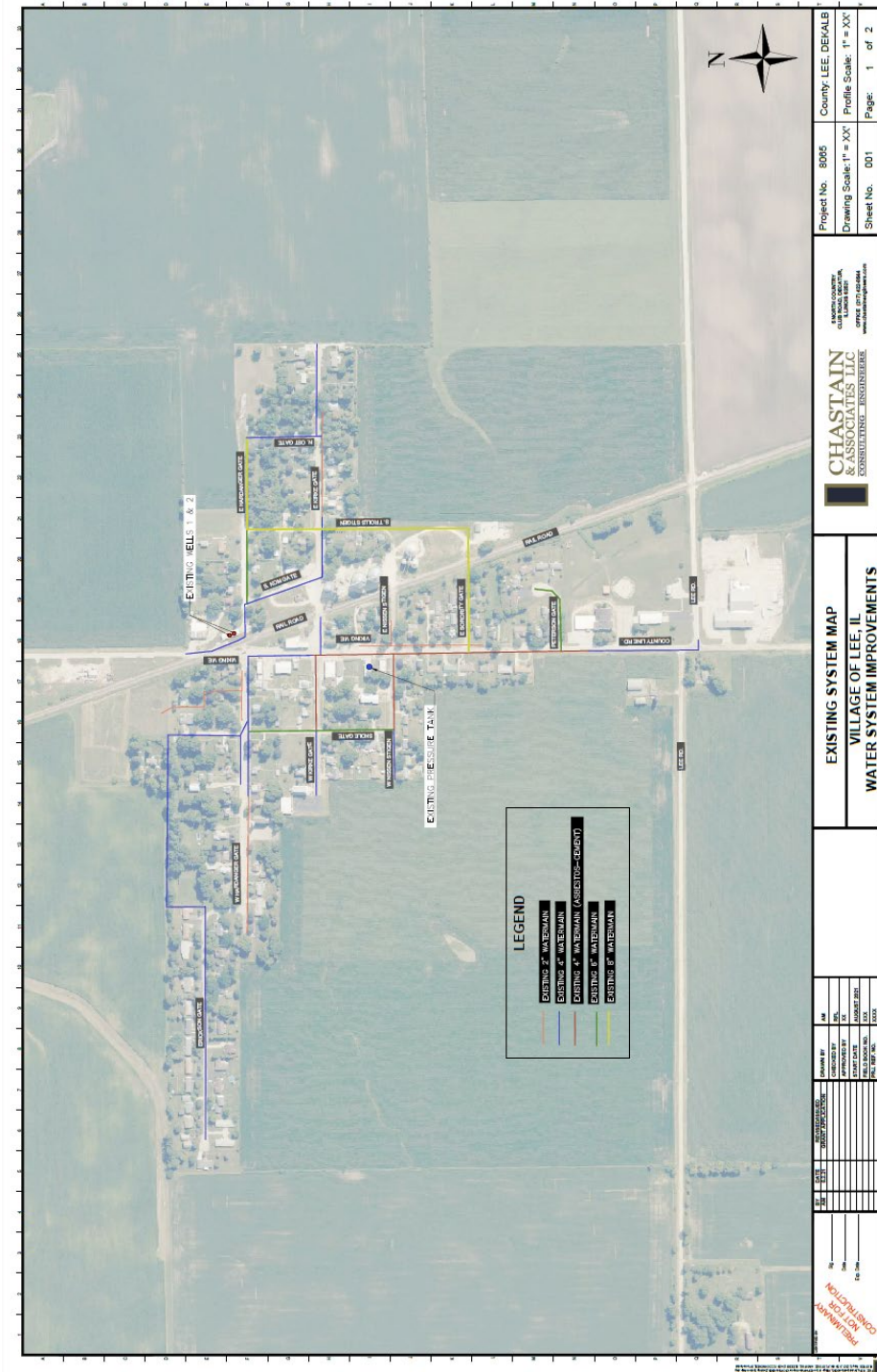


Exhibit 2: April 2022 IEPA Field Evaluation Letter



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

JB PRITZKER, GOVERNOR

JOHN J. KIM, DIRECTOR

LEE - Lee County
Facility Number: 1034600

May 4, 2022

Joshua Carlson, Village President
Village of Lee
PO Box 65
Lee, IL 60530

Dear Mr. Carlson:

An engineering evaluation of the Lee Community Water Supply has been completed. A field inspection was made on April 13, 2022, by Fei Zhao of this office. Mr. Jay Mulholland, Certified Operator, was present.

The Environmental Protection Agency periodically conducts these evaluations to determine if your community water supply meets the requirements of the Illinois Pollution Control Board's public water supply rules, regulations, and related standards. A list of deficiencies is outlined on Attachment A.

A written reply listing a specific date to correct the deficiencies is required within 45 days. Also, please review attachment B. This attachment presents reminders and recommended improvements.

The Village's response and questions regarding your water system should be directed to Fei Zhao, Illinois EPA-PWS, 4302 North main St., Rockford, IL 61103.

This letter is a Noncompliance Advisory and is not a Violation Notice as specified in Section 31(a) (1) of the Act. If you do not adequately respond to the Noncompliance Advisory within 45 days, the Illinois EPA may issue a formal violation notice according to Section 31(a) (1) of the Act.

2125 S. First Street, Champaign, IL 61820 (217) 278-5800
1101 Eastport Plaza Dr., Suite 100, Collinsville, IL 62234 (618) 346-5120
9511 Harrison Street, Des Plaines, IL 60016 (847) 294-4000
595 S. State Street, Elgin, IL 60123 (847) 608-3131

2309 W. Main Street, Suite 116, Marion, IL 62959 (618) 993-7200
412 SW Washington Street, Suite D, Peoria, IL 61602 (309) 671-3022
4302 N. Main Street, Rockford, IL 61103 (815) 987-7760

PLEASE PRINT ON RECYCLED PAPER

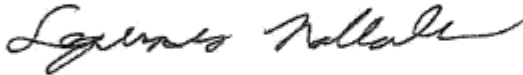
Water System Improvement Project Plan Amendment
Lee, Illinois

LEE - Lee County
Facility No. 1034600
May 4, 2022
Page Two

We appreciate the cooperation and courtesy extended to us during this survey. If you have questions regarding the evaluation do not hesitate to advise this office located at 4302 North Main Street, Rockford, Illinois, phone 815/987-7760.

Sincerely,

ENVIRONMENTAL PROTECTION AGENCY



Segundo Nallatan, P.E.
Rockford Regional Manager
Illinois Environmental Protection Agency
Division of Public Water Supplies
847-608-3138
FAX: 847-608-3139
E-Mail: Segundo.nallatan@illinois.gov

SN:FZ

cc: Jay Mulholland

ATTACHMENT A

LEE - Lee County

Inspection Date: April 13, 2022

SUMMARY OF DEFICIENCIES

The current evaluation of your community water supply indicates that the following conditions appear to violate Title IV of the Illinois Environmental Protection Act 415 ILCS 5/1-57.17 (2018) (The Act), 35 Illinois Administrative Code (35 IAC), the Recommended Standards for Water Works (2012) (Standards) and related standards.

1. The residential cross-connection control survey has not yet been performed. A community water supply must conduct a cross connectional control survey of the distribution system at least every 3 years. The purpose of the survey is to identify improper plumbing arrangements that may allow contamination of the water supply through backflow or backsiphonage conditions, and to require those improper plumbing arrangements to be eliminated. The survey is not intended to include an actual visual inspection of piping or plumbing systems. The required cross-connection control survey may be performed by the owner, official custodian or an authorized delegate. All residential and commercial customers must be included in the survey. Records from the biennial survey must be kept on file for ten years.

From each completed survey, the community water supply must develop an inventory of the following: all customers surveyed, the number of responding customers, identification of service connections required to have a backflow preventer installed and those not required under 77 Ill. Adm. Code 890.1130, backflow preventers installed, service connections that require further risk evaluation and corrective actions to mitigate cross connections. (The Act, Section 19; 35 IAC 604.1505)

2. The Village of Lee does not have a written Emergency Management Plan. Each community water supply must develop an emergency operation plan for the provision of water under emergency circumstances, including earthquakes, floods, tornadoes, and other disasters. The emergency operations plan must include a review of the methods and means by which alternative supplies of drinking water could be provided in the event of destruction, impairment or contamination of community water supply.

The community water supply must review its emergency operations plan at least every 3 years and revise the plan as necessary. The community water supply must maintain the emergency operations plan on site and make it available to the Agency, upon request. (The Act, Section 18 and 19; 35 IAC 604.135(d))

ATTACHMENT B

LEE - Lee County

Inspection Date: April 13, 2022

REMINDERS AND/OR RECOMMENDED IMPROVEMENTS

1. The average daily pumpage is relatively high for the population served and the amount of unaccounted water exceeds 15%. The amount of unaccounted water for 2021 was 54%. A thorough check of the distribution system is recommended for leaks. The accountability and financial condition of the water system would be enhanced by a review of billing procedures. Additionally, consumer water meters should be repaired or replaced if found to be defective or inaccurate. Meters should be replaced at a 10 year or more frequent interval.
2. Develop a source water protection plan by July 26, 2024 that contains the following minimum elements (Rule/Reg.: Section 18 of the Act 415 ILCS 5/17, 35 IAC Sections 604.305, 604.310, 604.315, 604.320, 604.325, and 604.330(b)):
 - a. A vision statement as set forth in Section 604.310;
 - b. a source water assessment as set forth in Section 604.315;
 - c. the objectives set forth in Section 604.320; and
 - d. an action plan as set forth in Section 604.325.
3. Some of the watermains are undersized. As a result, the system may not be able to maintain the minimum required pressure of 20 pounds per square inch (psi). The minimum allowable watermain size is four inches in diameter. If minimum pressure cannot be maintained, or if the undersized mains require extensive repairs, installation of adequately sized watermains is required. A construction permit must be acquired from this Agency prior to replacing undersized watermains. (The Act, Sections 15 and 18; 35 IAC Part 602.200, 604.1415(b), 604.145; Standards 8.1.1 and 8.2.2)

Supply: LEE - Lee County
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WELLS AND WELLHEAD PROTECTION

Well #1 (ID #11566) produces 70 gpm. Well #2 (ID #11567) produces 160 gpm. Well 2 currently is the main well. A project plan for water system improvements was submitted in 2019 and proposed to construct a new well and abandon Well 1. The minimum setback zone is 200 feet for each well.

TREATMENT

Sodium hypochlorite is fed from graduated solution tanks into well discharge line.

Blended phosphate (95% poly to 5% ortho) for iron control is added. Phosphate solution is diluted in a bulk tank and transferred to a day tank. Safety equipment are provided at the treatment plant.

FINISHED WATER STORAGE

Storage consists of one 21,500-gallon pressure tank located in the water building on Viking Vie. One 13,000-gallon pressure tank at the treatment plant (TP01) is no longer in service. The 21,500-gallon pressure tank exceeds 80 gallons per service connection requirement, but the gross volume is less than the average daily usage according to the 2021 adequacy. The 2019 project plan mentioned above also proposed to construct a water tower and remove two pressure tanks.

DISTRIBUTION

The section the Village west of the railway, comprising of $\approx 2/3$ of the customers, was served by one aged watermain which crosses under the railway near the well house. A second rail crossing, about 1000' of new watermain, was added to loop the system.

The system consists of 2, 4, 6, and 8-inch mains. Numerous two-inch diameter watermains are present. Seven dead ends in the system are flushed monthly in the summer. The system is flushed twice a year. Valves exercise program is not in place. A basic map with watermains and service connections is available at treatment plant.

The amount of water billed for 2021 was 5,059,133 gallons. Unaccounted water is about 54%.

Supply: LEE - Lee County
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MONITORING AND REPORTING

Operating Reports: Monthly operating reports include well production, chlorine and phosphate usage and chlorine residual tests for finished water and distribution. Reports are submitted regularly.

Bacteriological: Routine bacteriological sample results have been satisfactory. Coliform bacteria MCL or monitoring violations have not occurred since the previous inspection. The 2020 coliform sampling requirements are two raw samples and one distribution sample collected each month.

D/DBP: TTHM and HAA5 samples are collected on quarterly basis since September 2020. According to the recent results in February 2022, it was reported 52 ug/l of TTHM and 29.6 ug/l of HAA5. During the inspection, the distribution chlorine residual was 1.42 mg/l free at old fire station. The chlorine residual for finished water at TP01 was 2.16 mg/l free.

Nitrate: Nitrate samples collected on July 14, 2021, reported 0.09 mg/l.

IOC: IOC samples collected on April 1, 2020, were within the MCLs.

Fluoride: The natural fluoride content was 0.78 mg/l according to the IOC sample results in April 2020, and no supplemental fluoride solution is added to treatment.

VOC: VOC samples collected on August 5, 2020, reported no detection.

SOC: SOC samples collected on February 5, 2020, reported no detection.

Radiological: The Gross Alpha sample collected on February 4, 2020, reported no detection. The Combined Radium sample collected on August 3, 2016, reported 0.89 pCi/l.

Lead and Copper: Five samples collected on July 13, 2019, ranged from 0 to 2.4 ug/l of lead and 42 to 650 ug/l of copper.

WATER SYSTEM MANAGEMENT

Joshua Carlson is the Village President and Official Custodian. Jay Mulholland is the Certified Operator. Mike Woodberry is the Daily Operator.

Supply: LEE - Lee County
Facility #: 1034600
Inspection Date: April 13, 2022

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CROSS-CONNECTION CONTROL

The Agency approved Lee's cross-connection control ordinance. No potentially high hazard users were reported to be connected to the water system. No cross-connection survey was conducted after 2016.

PERMITS

No construction permit activity reported for this period.

EMERGENCY MANAGEMENT PLAN

Lee does not have an Emergency Management Plan.

FZ

Supply: LEE - Lee County
 Facility #: 1034600
 Inspection Date: April 13, 2022

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WELL SUMMARY

WELL#	CAPACITY	TP	WELL	GUI-SEP	MINIMUM Setback	WELL STATUS	VULN. Waiver	BACKUP
1	70 gpm	01	11566	Yes	200ft	Active	No	No
2	160 gpm	01	11567	Yes	200ft	Active	No	No

PLANT CAPACITIES

Total Well Capacity 331,200 gpd
 Pressure Storage 21,500 gal
 Total Storage Capacity 34,500 gal

CHANGES & IMPROVEMENTS SINCE LAST INSPECTION (2017):

1. Well 2 currently works as a main well.
2. The 13,000-gallon pressure tank at TP01 is out of service.

DEFICIENCIES NOTED IN LAST INSPECTION (2017):

1. Chlorine residual test results recorded on the monthly operating reports show insufficient chlorine is present in many areas of the water system. - CORRECTED
2. Lee does not have a written Emergency Management Plan. - NOT CORRECTED
3. Goggles and apron for the handling of water treatment chemicals are not available for the operator. - CORRECTED
4. A construction permit has not been obtained for the fixed natural gas generator. - ONGOING

RECOMMENDATIONS NOTED IN PREVIOUS INSPECTION (2017):

1. The access hatch to the riveted hydropneumatics appears not to be useable. - CORRECTED
2. Many of the watermains are undersized. - NOT CORRECTED
3. Water system operations do not include a program to exercise valves. - NOT CORRECTED
4. Dead ends normally require additional flushing operations to maintain an adequate chlorine residual. - CORRECTED
5. It was recommended to add commercial grade dehumidifiers to reduce the humidity in the pump house. - CORRECTED

TECHNICAL CAPACITY

TECHNICAL CAPACITY ASSESSMENT	YES	NO	Does not apply
Record your systems total annual pumpage for 2021: <u>11,051,000</u> Gallons			
Record your systems peak day water production in 2021: <u>67,000</u> Gallons			
Amount of water billed or sold to customers <u>5,059,133</u> gallons			
Number of service connections and population served: <u>145</u> services / <u>313</u> residents			
Is standby/emergency power equipment exercised?	<input checked="" type="checkbox"/>		
Check frequency equipment exercised (<input type="checkbox"/> weekly) (<input type="checkbox"/> monthly) (<input type="checkbox"/> quarterly) (<input checked="" type="checkbox"/> annual) (<input type="checkbox"/> other)	<input checked="" type="checkbox"/>		
Are water mains routinely flushed and maintained? Flushing frequency: <input type="checkbox"/> annual <input checked="" type="checkbox"/> spring/ fall <input type="checkbox"/> as needed	<input checked="" type="checkbox"/>		
Are the locations of all valves in the distribution system precisely known?		<input checked="" type="checkbox"/>	
Are all valves periodically exercised and maintained? List exercising frequency _____		<input checked="" type="checkbox"/>	

MANAGERIAL CAPACITY

MANAGERIAL CAPACITY ASSESSMENT	YES	NO	N/A
Is a written emergency response plan in place and up to date?		<input checked="" type="checkbox"/>	
Do you maintain copies of all water sample results, operating reports and inspection reports?	<input checked="" type="checkbox"/>		
Does the utility perform inspections of work performed on the system by outside contractors?	<input checked="" type="checkbox"/>		
Do you have a cross connection control program? Record date of last survey: _____		<input checked="" type="checkbox"/>	
Where are cross connection control survey results and record kept? _____			

FINANCIAL CAPACITY

FINANCIAL CAPACITY ASSESSMENT	YES	NO	N/A
Does your water system generate sufficient revenue to meet estimated expenses during the current and forecasted budget years?	<input checked="" type="checkbox"/>		
Are adequate reserve funds in place to provide for emergency repairs?		<input checked="" type="checkbox"/>	
Can your organization cover the costs of an emergency or failure of its most vulnerable system component? (source / storage tank / treatment etc?)	<input checked="" type="checkbox"/>		
Are water rates sufficient? What is the rate? <u>.0077 per 1.00 gal</u>	<input checked="" type="checkbox"/>		
Public Water Supply Name <u>The Village of Lee</u> ID: <u>11567</u>			
Date: <u>4-22-2022</u> Prepared by: <u>Jay McCallister</u>			

Exhibit 3: Location Map of Proposed Work

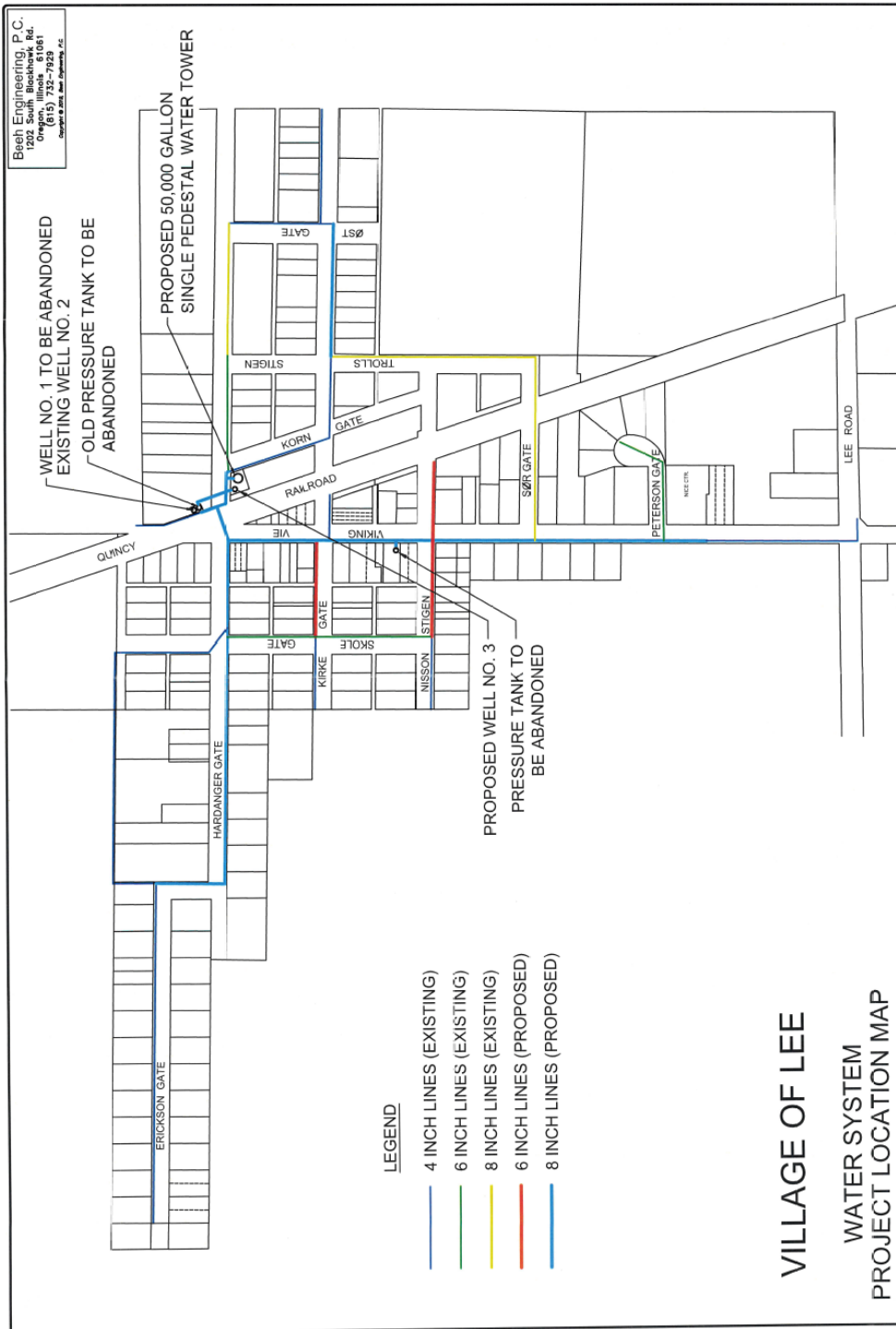


Exhibit 4: IDNR EcoCAT Report



Applicant: Chastain & Associates LLC
Contact: Ron Legner
Address: 5 N. Country Club Road
Decatur, IL 62521

IDNR Project Number: 2208017
Date: 12/20/2021
Alternate Number: 8065, 1911334

Project: Village of Lee Water System Improvements
Address: various, Lee

Description: Construction of a new public water supply well, a single pedestal water tower, and water distribution improvements.

Natural Resource Review Results

Consultation for Endangered Species Protection and Natural Areas Preservation (Part 1075)

The Illinois Natural Heritage Database contains no record of State-listed threatened or endangered species, Illinois Natural Area Inventory sites, dedicated Illinois Nature Preserves, or registered Land and Water Reserves in the vicinity of the project location. Therefore, consultation under part 1075 is terminated.

Wetland Review (Part 1090)

The Illinois Wetlands Inventory does not show wetlands within 250 feet of the project location. Therefore, the wetland review under Part 1090 is terminated.

This review is valid for two years unless new information becomes available that was not previously considered; the proposed action is modified; or additional species, essential habitat, Natural Areas, or wetlands are identified in the vicinity. If the project has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary. Termination does not imply IDNR's authorization or endorsement.

Location

The applicant is responsible for the accuracy of the location submitted for the project.

County: DeKalb

County: Lee

Township, Range, Section:
38N, 3E, 6

Township, Range, Section:
38N, 2E, 1



IL Department of Natural Resources
Contact
Adam Rawe
217-785-5500
Division of Ecosystems & Environment

Government Jurisdiction
IL Environmental Protection Agency
Permit Section
PO Box 19276
Springfield, Illinois 62794 -9276

Disclaimer

The Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of natural resources in Illinois. This review reflects the information existing in the Database at the time of this inquiry, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, compliance with applicable statutes and regulations is required.

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1. The IDNR EcoCAT website was developed so that units of local government, state agencies and the public could request information or begin natural resource consultations on-line for the Illinois Endangered Species Protection Act, Illinois Natural Areas Preservation Act, and Illinois Interagency Wetland Policy Act. EcoCAT uses databases, Geographic Information System mapping, and a set of programmed decision rules to determine if proposed actions are in the vicinity of protected natural resources. By indicating your agreement to the Terms of Use for this application, you warrant that you will not use this web site for any other purpose.
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Unauthorized use, tampering with or modification of this system, including supporting hardware or software, may subject the violator to criminal and civil penalties. In the event of unauthorized intrusion, all relevant information regarding possible violation of law may be provided to law enforcement officials.

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EcoCAT generates a public record subject to disclosure under the Freedom of Information Act. Otherwise, IDNR uses the information submitted to EcoCAT solely for internal tracking purposes.

Exhibit 5: State Historical Preservation Office Clearance



Illinois Department of Natural Resources

One Natural Resources Way Springfield, Illinois 62702-1271
www.dnr.illinois.gov

JB Pritzker, Governor
Colleen Callahan, Director

Various County PLEASE REFER TO: SHPO LOG #013071819
Lee - DeKalb & Lee Counties
Erickson Gate, Hardanger Gate, Kirke Gate, Nisson Stigen, Sor Gate, Peterson Gate, Skokie Gate, Viking Vie, Korn Gate, Trolls Stigen, Ost Gate
IEPA LOAN
Water system improvements - new water tower, wells & water mains

January 5, 2022

Ron Legner
Chastain and Associates LLC
5 North Country Club Road
Decatur, IL 62521

Dear Mr. Legner:

We have reviewed the documentation submitted for the referenced project(s) in accordance with 36 CFR Part 800.4. Based upon the information provided, no historic properties are affected. We, therefore, have no objection to the undertaking proceeding as planned.

Please retain this letter in your files as evidence of compliance with section 106 of the National Historic Preservation Act of 1966, as amended. This clearance remains in effect for two (2) years from date of issuance. It does not pertain to any discovery during construction, nor is it a clearance for purposes of the Illinois Human Skeletal Remains Protection Act (20 ILCS 3440).

If you are an applicant, please submit a copy of this letter to the state or federal agency from which you obtain any permit, license, grant, or other assistance. If further assistance is needed contact Jeff Kruchten, Chief Archaeologist at 217/785-1279 or Jeffery.kruchten@illinois.gov.

Sincerely,

A handwritten signature in black ink that reads "Carey L. Mayer".

Carey L. Mayer, AIA
Deputy State Historic
Preservation Officer